Community College Moment

Sustainability

Front Cover
"Ed Bowen, a Chief Elder of the Conderated Tribes of Coos, Siuslaw and Lower Umpqua Indians, at Heceta Head 2005" by John Bauguess

Community College Moment
Spring 2006

The *Community College Moment* is a faculty-led journal that offers a forum for high quality progressive works that reflect a new vision of scholarship at the intersection of academic, activist and community interests. The *Moment* seeks to encourage and enhance the vital, inclusive scholarly culture uniquely possible at a comprehensive community college.

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Community College Moment

Volume Six
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Living With Limitations

The community college is all about opportunity—providing opportunity for those who may not enjoy it elsewhere. It's a noble mission, and the countless success stories begun at community colleges are proof enough the mission is the right one.

But times change. Conditions, perceptions and attitudes change. What was once taken for granted now comes into question. Money, time, energy—how, where and why they are spent becomes a matter of debate. Resources, from the temporal to the fundamental, are showing their capacity. What quality education is available at a school stripped of its funding? How much food can we grow in soil exhausted of its nutrients? How many square miles can a single sheriff's deputy be expected to patrol? Where shall we dig our wells when the water has dried up? How do we sustain a lifestyle whose primary sustenance must be perpetual growth?

The answer is: We don't. All of us, in our personal, professional and public lives, are facing the challenge of rethinking our priorities, making choices, of living with limitations.

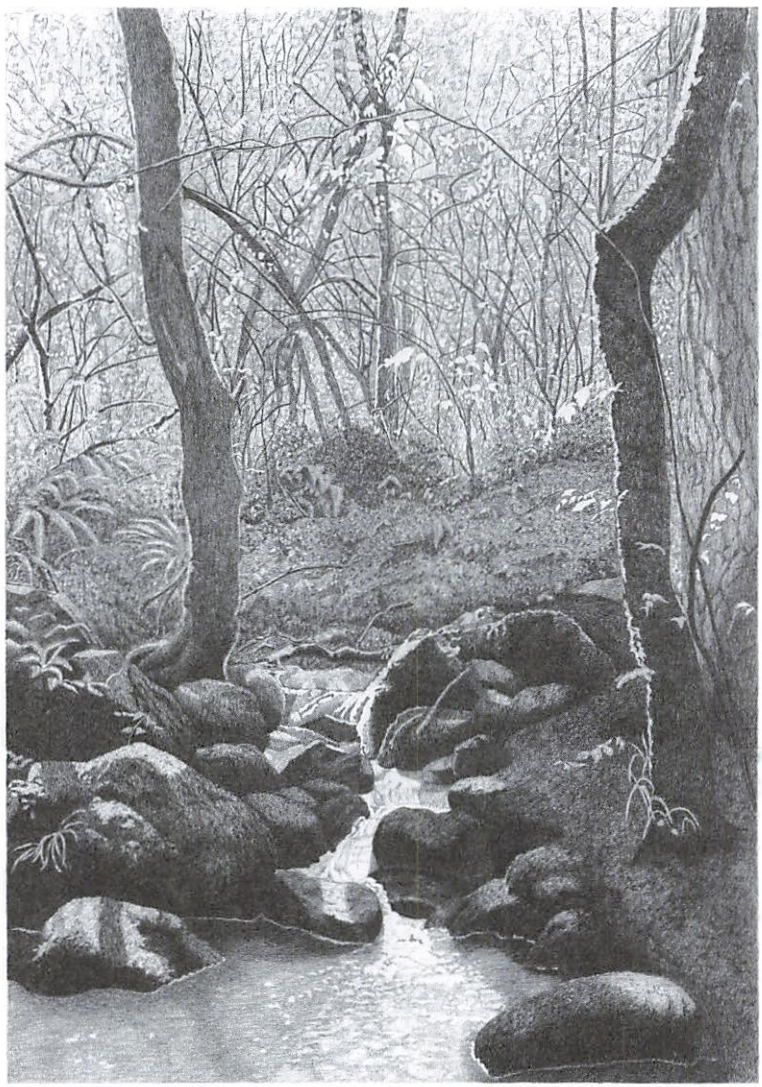
A common question we hear is: What kind of world do we want to leave for our children? We might also consider what kind of world we want to live in today. As we look around, we might ask ourselves: When we were younger and dreaming of the future, is this what we had in mind? What have we done right? What have we done wrong? What must change? What *can* change?

There is much activity at Lane regarding this issue of sustainability, more than we could ever hope to cover in these pages. It's an issue whose time has come—an issue on which we invite you to read, consider, discuss and, above all, act. You can begin by turning this page.

The Editors

Headwaters of Amazon Creek

Margaret Robertson



Peace

Bill Woolum

When Nancy quit Subway to run the Tall Pine
We knew it'd be some work, but shit
You hire these kids and they're always wantin' time off
Like Chantell called last night and
Said she couldn't make it because Saturday was her
Boyfriend's uncle's new girlfriend's birthday
And she had to go over to Thompson Falls for the party. And then
Last week we paid out a thousand bucks
For one of them computer cash registers
And right off Melanie spilled a goddamn huckleberry shake
All over it and the son of a bitch froze up
Colder than a polar bear's ass.
Last night my log truck engine blew
And Buff had to haul it up to a shop two hours
Out of Spokane in Newport and who knows when I can drive again
But, Christ, who wants to haul logs anyway with this rod in my leg
The pins damn near poking through my skin
Thanks to scarin' the shit out of old Art Listoe
When he drove up for some curly fries
And yells out his old Dodge Ram that I look like a pig on ice
Floppin' around up there on the Tall Pine roof,
Fixin' that kitchen outtake fan but changin' his tune
When I fell off and bounced my pelvis like a ping pong ball off the parking lot.
It just ain't right, Bill, but I got some time tomorrow
So let's get down to Seven Feathers
And kick the holy hell out of that new I Dream of Jeannie machine
Clear the cobwebs
And see if I can't find me some real peace.

Bill Woolum
teaches literature and writing at Lane Community College. He enjoys acting in plays and is a licensed lay preacher in the Episcopal church.

Locality and Non-Locality: The Community College in the 21st Century

Dr. Mary Furgol

Editors' note: The following was presented as the Lane Community College Strategic Learning Initiative In-service keynote speech on September 15, 2005. It has been slightly edited for print.

First of all thank you for inviting me to Lane Community College. I appreciate the opportunity to visit another community college, to talk with many of you and to see and learn from what you are doing. I am going to talk primarily about teaching. However, like all historians, I cannot resist giving some historical context.

I was born in Dunfermline, Scotland, in the same small town where Andrew Carnegie was born. Dunfermline lies in the shadows of Dunfermline Abbey, where the heart of Robert the Bruce is buried—those of you who are fans of the movie "Braveheart" will know who I am talking about. It did not take me long once we moved to the United States to discover that publicly admitting such a fact as sharing Carnegie's birthplace is not necessarily a wise thing to do—at least in Pittsburgh! In Scotland's working class communities, such as the one in which I grew up, Carnegie's name was a household word, not as a robber-baron industrialist, but rather as the local boy who had made good and then spent his fortunes giving back to the poor and underprivileged ranks he had left behind, by funding libraries and public parks and founding institutes for the arts. In fact, I reached the age of nine before I realized that the word for "library" did not need "Carnegie" in front of it to be a noun.

I eventually would attend the University of Edinburgh, where I majored in history. I specialized in 19th century social history, examining the impact of industrialization on the poor of Glasgow and Scotland, and also comparatively with the rest of Britain, northern Europe and the eastern seaboard of the U.S. It is quite haunting and depressing to realize that in many ways our language and discourse on poverty in the West has changed little since the late 18th and early 19th centuries. The notion that those who are poor are usually to blame for their economic state, and that they should be held to a higher moral standard as regards their public and private behavior, is still very much with us. It seems to be all right for those who are wealthy to drink, gamble and womanize, precisely because they are wealthy. But if the poor are caught smoking or drinking or having children out of wedlock, then the very fabric of our society is threatened. Such contradictions inherent in the 19th century "gospel of wealth" approach—which Carnegie ruthlessly exploited to earn his wealth in the steel industry—are echoed today.

Another Scotsman, whose works were and still are used to support the 19th century gospel of wealth, is Adam Smith. Parts of Smith's writings are familiar: on the division of labor being the best way to produce goods, and the need to have no government interference but rather let the invisible hand of the marketplace guide and optimize

profits. Perhaps it is time for a new treatment of Smith. He was first of all a moral philosopher, not an economist. Like David Hume, he was fascinated by how humans react to the misfortunes of one another. To me, it is highly significant that Smith not only dispelled the mercantilist idea that the wealth of nations consisted of gold and silver, but also did *not* say that the wealth of nations consisted of profit; rather, he argued the wealth of nations was labor. Also, Smith warned against abusing that labor. He described the potential results of consigning workers to the monotony of repeated labor at the same task:

> The man whose whole life is spent in performing a few simple operations, of which the effects too are, perhaps, always the same, or very nearly the same, has no occasion to exercise his understanding, or to exercise his invention in finding out expedients for removing difficulties. He naturally loses, therefore, the habit of such exertion, and generally becomes as stupid and ignorant as it is possible for a human creature to become. The torpor of his mind renders him, not only incapable of relishing or bearing a part in any rational conversation, but of conceiving any generous, noble, or tender sentiment, and consequently of forming any just judgment concerning many of the ordinary duties of private life. Of the great and extensive interests of his country, he is altogether incapable of judging…[1]

Unfortunately, this part of Smith's writings tends to be overlooked. Or perhaps it is not.

As Britain industrialized, there were a number of individuals who were genuinely concerned with the new phenomenon of vast, urban, unemployed poor. The churches, the traditional dispensers of charity, could not keep up with the rapidly deteriorating conditions in industrial and mercantile centers such as Glasgow, Liverpool, Leeds, Manchester and Birmingham. One intriguing churchman whose work I studied was Thomas Chalmers, a Church of Scotland minister in Glasgow. He first attended St. Andrews, then Edinburgh University, was ordained as a minister, assigned a parish, and then found God! His fame as a preacher began to spread and eventually he was brought to a large, important parish in the heart of Glasgow. He became even more famous while at this Tron parish, and began to establish mid-week sermons. If we were suddenly transported back to Glasgow in 1816, we would find his Tron church packed (women being escorted in first so as not to be manhandled by the crowd) and as the noon hour approached, bankers, merchants and lawyers would leave their place of business to hear the great man preach. He would eventually publish his writings that grew out of these sermons in a multi-volume work entitled *The Christian and Civic Economy*.

Although highly popular with the middle class, Chalmers was dumbfounded by the teeming masses of the working class. Their material needs were so severe during the post-Napoleonic war economic slumps that he believed he would never be able to persuade them to listen to the Gospel. Constantly plagued with requests for financial

assistance as opposed to spiritual guidance, he eventually decided to create a system to deal with the poor.

There is much about Chalmers' ideas in general that deeply troubles me. However, what I do admire in him is that he was one of the first to grasp the need for a systematic approach to breaking down inner cities into small, manageable communities. Chalmers harkened back to his idyllic experiences in a small, rural parish and argued that urban parishes needed to go through a retracting process to return to the rural origins of the inhabitants. Where his system was visionary was his ability to perceive, at a time when few others did, that we can actively create smaller units out of the large. As he broke his huge parish into districts, he also created a thorough support system by appointing a bevy of elders, deacons and teachers to visit and attend to their district's needs. To maintain such high numbers of parochial visitors, he even allowed women to join the ranks of what he called his "moral police"—though I hasten to add only respectable women were allowed. He described the ensuing structure as being guided by the principle of locality: You take people where they are, put them into small, manageable groups and systematically support them.

Chalmers was original in a number of ways, and his works spread beyond Scotland to England, Europe and North America. They were read by those who founded the Charity Organization Society in England, which in turn influenced the work of Jane Addams in Hull House in Chicago. As a teacher, I have found myself returning to Chalmers' locality principle time and again. Before I talk further about its applications to teaching, though, let me give a brief background of my own introduction to teaching.

My paternal grandfather was a coal miner, and my maternal grandfather was a postman who had fought in World War I. The former came from that proud group of Scottish miners, many self-educated, who particularly prided themselves on their reading and work in the community and union. My own parents were each the first in their family to attend college—particularly impressive in my mother's case, as a woman and majoring in mathematics and French. After my father returned from service in World War II, they both became teachers.

As you may imagine, I grew up surrounded by reminders of the importance of education and also with an emphasis on egalitarianism—difficult to maintain, given the elite nature of British higher education during my university days in the 1970s and '80s. Although at first I was not certain I wanted to pursue a path in teaching, I decided to attend a year of teacher training after I had completed my M.A. and before embarking on my Ph.D. The emphasis at that time was very much on methodology. We studied Piaget, looking at what styles of teaching were appropriate for each stage of development, and we dissected the teaching process: the need for aims and objectives, lesson plans, variety of materials. It would be fair to say the emphasis was mostly on the teacher and teaching and not so much on the learner and learning.

Almost immediately in my teaching practice I was given a class that was described as "difficult." My experience with that class—mostly thirteen-year-old boys—would quickly shift my interest to the learner. Their regular teacher had decided to try them out with a new history curriculum that used primary sources. As I came to know the students, one

boy, whom I'll call Alex, struck me as being particularly bright. One day I had given them an extract from an 18th century document about Bonnie Prince Charlie. The set of questions included one that asked the students the Prince's attitude towards the women of the court. Alex's reply was that the Prince had his way with the ladies whenever he wanted! I was puzzled, since the document actually implied the opposite, and I asked him how he had come up with the answer. "Easy, Miss," he replied. "It says it right there: 'he was cool with the ladies.' " This led to a sophisticated discussion about language and how its meaning might change throughout the course of history. It was one of those magical moments in the classroom.

When I began my full-time teaching career in the U.S. in 1993, several things impressed me straightaway. First of all was the mission of the community college, with its open admissions policy and the possibility of transferring as a junior to a four-year college. There is no exact equivalent of it in Britain. There is similarity in the low cost, but that combined with an open admissions policy means that, unlike in Britain, the community college provides the potential for an egalitarian and comprehensive education. Second, the particular community college I am at [Montgomery College in Maryland] draws students from over 160 countries, so the classrooms are full of students representing all reaches of the world as well as a variety of ages, races and socio-economic class. The third thing that impressed me was the conversations I was hearing amongst some faculty. Their emphasis was very much on the learner. I joined the critical literacy group where we explored learning styles and read such household names as Chaffee on critical thinking, Gardner on multiple intelligences, and Cross and Angelo on assessment techniques. It was invigorating to be in such an atmosphere—which also seems to be dedicated to the vision statement here at Lane of "transforming lives through learning."

Lane's Strategic Learning Initiative also supports this, with its emphasis on facilitating the "systemic redesign of the learning environment." Its aims are echoed in two learning abstracts from the League for Innovation in Community College Teaching. Khaki Wunderlich, Annette Bell and Lisa Ford write:

> In his book, *Intelligence Reframed*, Howard Gardner noted, "The challenge of the next millennium consists precisely of this: Now that we know about the enormous differences in how people acquire and represent knowledge, can we make these differences central to teaching and learning? Or will we continue to treat everyone in a uniform way? [2]

Carolane Williams writes:

> Building a path toward becoming a learning campus doesn't just happen. It takes a concerted effort on the part of all campus faculty, staff, and administrators to move this vision from being the educational phrase *du jour* to actually becoming the way the institution operates. A

> learning campus in its practical sense is more of a journey than a destination. Therefore, it is imperative that the path be paved with concrete plans and activities that will generate enthusiasm, solicit campuswide support, and promote an environment where good ideas can take root. In the article, "Learning Leadership," Marilyn Amey states that developing a learning perspective requires that we focus not on what is, but on what can be.[3]

About seven years ago, a group of faculty at my community college was given the chance to dream a little and to focus on "what can be." We were told we could create a program and a curriculum almost from scratch. The main aim, on the part of the administrators who gave us this charge and the funding, was to produce a "Scholars" program to enhance the image of the college. The program has achieved that, but it has also become an excellent model for the creation of learning communities in general. When I was asked to join, it was Chalmers' locality principle—the idea of structures that are both flexible and systemic—as well as my work on pedagogy that engaged me in the project. The idea of taking a small group of students out of the larger whole and creating a program which involved them in taking courses together and getting to know a group of faculty well was and continues to be compelling. The one aspect of our community college that was hard to overcome individually in the classroom—its sheer size and the difficulty students had in getting to know one another—seemed to be addressed in this new model. Students would have small classes where they would come to know a set group of faculty and counselors and have the support that comes from knowledge and familiarity. Also, we decided that the students should be from many majors—that is, it would not be a humanities program, nor an arts or sciences program. In this way we would also court a rich cross-fertilization of ideas among the students' different interests.

We created a curriculum which kept the students together for half of their degree credits, with the other thirty credits being courses in their major or electives which we encouraged them to take. Four courses were interwoven: world history, literature, philosophy and art. For a year we planned our curriculum, using our knowledge of learning styles, and studying the freshman experience for insights into what helps students come together, work together, and become critical thinkers and lifelong learners. We were also greatly aided in this by the news that the college would fund them traveling to Cambridge University for a four-week summer school between their freshman and sophomore years.

The first group of scholars entered the program in 1999. Although the four core instructors had been meeting together for a year, none of us were prepared for what would happen once we entered the classroom. The experience of team-teaching not only revolutionized the way several of us now approach teaching, but also dramatically changed the way each of us now approaches our discipline. For example, the philosophy professor talks about how listening to and participating in the history, literature and art sections has made him rethink his approach to teaching philosophy, now placing far

more emphasis on the historical context of ideas. Trips to museums and art galleries, undertaken to enhance a more kinesthetic and visual approach to learning, achieved this not only for the students but also for the teachers, as each time we went together we would see different aspects and implications for our own and each other's disciplines. With the addition of music to the curriculum, we now have a whole new auditory and sensory set of directions to explore.

As an historian, I have always tried to incorporate some literature and art into my teaching, but now those links are so much more apparent for the students. The most profound impact on my approach to history has come as a result of the incorporation of philosophy, through my colleague's interest in the philosophy of science. As I listened to his section on 20th century physics, I became intrigued by the section on Bell's theorem of non-locality, an interest that was enhanced by one of our regular roundtable speakers, who is a quantum physicist. I do not presume to know Bell's theorem as a physicist does, but what I have grasped about the ability of two photons sent in different directions to affect one another's direction and movement from afar has significant implications for the humanities and also for history. Just as the scientific revolution of the 17th century spawned the Enlightenment that applied the implications of the new science of Descartes, Newton and Leibniz to ask questions of society, politics and the individual, so many modern thinkers such as Derrida and Foucault have asked new questions of cultures and ourselves in response to the developments in science and thought of the 20th century. Postmodernism has been very good at placing new emphasis on the *petit narrative* as opposed to the meta-narrative, and the result has been the "discovery" of the voices of many who had hitherto been lost through time: women and minority groups in general. But the result has tended to be a separation of humanity into smaller and smaller groups without reconnecting us all in some overarching quest. Perhaps those of us in the arts and humanities should be raising the questions that non-locality has raised in the world of quantum physics. Is there a parallel here to human interaction? How are we, as conscious human beings, connected across time and space?

Certainly in teaching the Scholars Program I have been struck time and again by the connections and bonds made between the students, faculty and counselors, and by the way these bonds continue after they leave the program. Defined in this way, non-locality parallels and complements Chalmers' locality principles—we need community, the small group identity; we learn better in such settings; but, like photons, we humans impact one another from far distances, especially when we have had common human experiences, common "sets of instructions." How much more important, then, to nurture the small and local, then stand back and watch the ripple effect of those connections on the lives of the students and teachers as they part from one another and continue to impact one another's lives for years to come.

We have found that designing opportunities for students to come together informally is of vital importance. They begin their freshman year with an overnight retreat. Not only does this give the students a chance to begin to get to know one another, but there are also opportunities for team-building activities. Every other week during the semester we have what is called Philo (short for philosophy) Café—the philosophy

professor and I meet with students at his house where we discuss issues that have come up in class and anything else that might be of importance. In the process, we model civil discourse for them. After the first few weeks, the students usually begin to get together themselves. Coupled with the bonding that comes from an extremely rigorous work load in the core, quickly a learning community begins to emerge.

Assessment is also important in this process. As the students engage in such activities as concept mapping, assignments based on a visit to the Organization of American States and to the art galleries, a Middle East peace simulation exercise, and a large team activity at the end of their first year in which each group is charged with collaboratively creating an ideal community, the impact on their thinking and analytical skills is profound. The interdisciplinary nature of core learning encourages them to make connections.

In the second year of the program, the students take a team-taught international relations and capstone course, in which they develop a research project on the theme of globalization. They present their resulting paper at a colloquium which we hold in February. We have recently introduced a short retreat at the beginning of the second semester of their sophomore year. This gives them the opportunity to present their findings to the program faculty, counselors and staff in a relatively benign setting. Some students have gone on to present these papers at the Beacon Conference for community college honors students on the east coast, and one has used her paper in her research position with the National Cancer Research Institute.

We have also created rituals and moments to keep the scholars bound together. It is actually very easy to do, as most feel a connection even when they are apart (that nonlocality principle again). Every December we have a winter solstice Philo Café for all Scholars classes, and also a picnic in May to welcome each new class. At the end of their sophomore year we hold a celebration, a *Skoal*, for the graduating class, where they plant a donated tree on campus. We also now produce a newsletter twice a year to help maintain contact with all seven Scholars classes to date.

There are of course a number of ways the success of a program can be measured. Our graduation rates are impressive—84 percent (94 percent among Hispanics). With comparable groups in the college the rate is 8 to 10 percent. Transfer rates are over 90 percent. This success is also a result of the counseling component of the program. Each class has a counselor who is identified as "their" counselor. Although the latter has other duties, the students gain consistent advising and counseling. We could also measure success by where our scholars go—Georgetown, American University, Amherst, George Washington, St. Mary's College.

But if we use those standards alone, we miss something of the essence of the program. A number of the students we accept are "at risk." In the first two years of the program we had a teen mother in each of the classes. One of them left after one year without completing the program. As a statistic, she is shown as having "dropped out." Yet that misses so much. We learned later that she had been hesitant to accept our offer of a scholarship in our program because of the commitments it entailed while she was also looking after her child. But she did in the end join us, and during her one year in the

program became the most profound thinker of the group and the most lyrical writer. She married after one year and moved to be with her husband. She wrote a letter explaining this to us. In it she described how she had entered the program with "the weight of the world" on her shoulders, but was leaving it "standing on top of the world."

Similarly, I am very proud in Cambridge when I see our students. At first I was afraid they might be intimidated by the experience, overwhelmed by the grandeur and attitude of the university. However, we have not found that to be the case. The students are impressed, yes, but not intimidated. During the four weeks they bond further and also deepen many of their critical thinking skills as they experience living in another culture.

The next challenge we face at my college is common to all learning initiatives: expanding that model of the learning community and innovative interdisciplinary teaching. To do that we need to maintain and sustain the support that led to the innovation. When teachers develop new and sometimes daring approaches, it is good for them and for administrators to have the confidence to continue to develop and support such effort, to keep the conversations focused and energized and always to keep the students at the heart of it all.

I will end where I began: with Andrew Carnegie. As a child, Carnegie used to gaze through the railings at the grounds of the estate of the local laird in Dunfermline. As the son of a poor weaver, he had no hope of access to such an expanse of ground nor the riches and privileges it represented. As an old man, he returned to Dunfermline from the U.S., was given a grand parade along its high street, and he turned over the grounds of that estate, which he had just bought, to the town councilors to be used in perpetuity for the recreation of the inhabitants, poor and rich alike. Today, so many people peep through the railings and barriers to higher education, are denied access literally or figuratively, or do not succeed after they arrive. The community college, though, invites everyone in. That is what makes it the best and most honest place to work in higher education. What makes it an inspiring place to be is the challenge we face each day in helping those who enter to succeed, and in sustaining the energies and vision of those who teach. I wish each of you well in this coming semester and year as you continue to consolidate and develop teaching and learning initiatives. And most of all, I wish you many moments of magic in the classroom.

Endnotes

[1] Smith, Adam. *Wealth of Nations.* V.i.f 50 Libery Fund, 782

[2] Wunderlich, Khaki, Annette Bell and Lisa Ford. "Improving Learning Through Understanding of Brain Science Research." Learning Abstracts, January 2005, Vol. 8, No. 1, http://www.league.org/publication/abstracts/learning/lelabs200501.html

[3] *Williams, Carolane.* "Becoming a Learning Campus: Moving from Rhetoric to Reality." Learning Abstracts, May 2005, Vol. 8, No. 5 http://www.league.org/publication/abstracts/learning/lelabs200505.html

Dr. Mary Furgol *is chair of the history and political science department at Montgomery College, Rockville Campus in Maryland. She also directs the Montgomery Scholars, a two-year honors program for students straight from high school who want an intensive, team-taught and interdisicplinary honors curriculum within the context of a learning community. Born and educated in Scotland, she received her M.A. and Ph.D. in history from the University of Edinburgh. She was named 2003 Maryland Professor of the Year by the Carnegie Foundation for the Advancement and Support of Education (CASE).*

Marcelle Stay *teaches at Lane Community College. She spent most of her early childhood in Germany and doesn't remember learning to read in either English or German, with equal fluency in both when she returned with her parents to the United States at age 8. She attended public schools in San Antonio, Texas and a private liberal arts college in Santa Fe, NM (St. John's College) before doing graduate work in communication at Idaho State University. Besides communication studies, her favorite classes at ISU were in creative writing and art history. The nature of messages and their rhetoric, running, reading and public radio were her passions until she met a tall chemist at ISU and they were married in June 2004. She moved to Eugene soon thereafter and has been waterlogged ever since.*

Grandmother's Inheritance

Marcelle Stay

My aunts say I got her figure and spicy temper,
her nose, chin and her love of reading westerns.

I got her Kitchen-Aid,
a lemon squeezer and some old linens.

What I wanted
were her gardening hands
and Latin plant vocabulary,
her serenity. . .

She invited everyone into her kitchen
to eat tomato and bacon sandwiches with whole milk
in stubby glasses. As we ate, hummingbirds and bees
would visit the feeder on the other side of the bay window.

. . . her simple philosophy of loving,
her humorous patience with my sometimes-grouchy grandfather.

The power she held
over flowers and hummingbirds,
making them feel welcome, too
isn't sorted and divvied among
shirttail cousins.
They need her grace.

As do I,
More than I knew.

The Blue Chair

Sandra Jensen

I am in despair as I write to you this morning. A fine, gray mist sifts over the green Willamette fields. The mustard saturates my eyes with saffron yellow as it undulates away into stands of white oak and Douglas fir. This morning, black-headed grosbeaks made their first appearance in the valley, and yesterday we saw an immature black-shouldered kite flashing white over the racing, blue hood of the car. We just caught a glimpse of its eye before it curved sharply up into free space.

My school, Linn-Benton Community College, sprawls spaciously among these early May fields. In the courtyard, a warm spring sun illumines the drenched, burnt-crimson of the rhododendrons. My office is on the second floor of the Takena Building. It is two and a half yards by three yards, and is shared by five part-time English teachers. I teach one class on Monday, Wednesday and Friday. To get here, I commute an hour each way on unwaveringly straight I-5 down the valley where the pioneers found their golden promise at the end of the Oregon Trail. My monthly paycheck is $324.

In my office are two desks, some file cabinets, a bookcase, two chairs for teachers, and one chair for visiting students. It is this chair, turquoise molded fiberglass on bent metal legs, that is the source of the morning's black mood. I have just said goodbye to Kimi, who came in to tell me she is dropping my class. Kimi is seventeen years old with a GED. She is a skinny kid with springy, red hair, splotchy freckles and smart green eyes. Today she was dressed in rags: torn, hightop sneakers; snagged leotard; an unwashed, tie-dyed shirt. Jittery, jumpy, twitchy, she looked like Pippi Longstocking on drugs.

"Mrs. Jensen, I just got out of alcohol and drug rehab in March. I dunno. I guess I got too ambitious and thought I could take on the world with all these classes."

"But Kimi, you were doing fine with your writing. Why do you have to drop?"

Teeth chattering, body twitching, Kimi said, "Mrs. Jensen, I guess I'm having a little problem with my sobriety." *Why are you telling me this, Kimi? Do I look like your counselor?*

Jana was in that same chair last Wednesday. Jana is a mother of three now returning to school after her husband left her. She's hoping to be a dental hygienist, but she explains that she has to drop my Writing 115 class, too. "My sister was murdered in Salem, and they just caught the guy. I have to appear at the trial as a witness." Her brown eyes are full of the held-back tension of determinedly unshed tears, and all I can find to say is, "I understand." *But I know I don't; I couldn't possibly understand. I'm not her therapist.*

Nina also sat in the blue chair last week. She's a beautiful woman in her forties with four children and a first grandchild. With her long, straight black hair and Chinese/Irish beauty, she still looks like a likeable kid herself, except for the black eyes and the bruises

along one side of her face and down her arm. "I had a court order against him, Mrs. Jensen, and the first time he attacked me I called 9-1-1, and they put him in jail. But he was released because they needed the cell space. Nobody called to tell me he was out. He came straight to my apartment, broke in, and beat me up. Now he's in a car across the street. Everywhere I go, he follows me. I don't know how, but I have to disappear. I really like your class, Mrs. Jensen, but I'm afraid he's going to kill me."

What am I supposed to say? "But Nina, you were doing so well with your pronoun reference problems."

Blue chair, blue chair, whatever happened to Alicia, who sat there explaining her problem to me after being gone most of the quarter? She had had stomach flu the first day she didn't come to class. She had been dropping someone off at the local airstrip, and on the way home from the Lebanon Airport, she had pulled over to throw up in a ditch. A man in a pick-up stopped as if to offer to help and raped her right there in the irrigation ditch among the lovely, yellow mustard and Alicia's viral vomit. She threw up right on him, and she still got pregnant. The worst that could have happened to him is that he got the flu.

Alicia didn't drop the class, but she wrote an essay about getting raped. It was full of grammar and punctuation and organizational errors, and because I'm a good teacher, do you think I flunked Alicia? You know, she didn't attend much class the last few weeks of the term after the abortion, and she had a hard time focusing on her verb tenses.

Laurel slept every class in the front row. Finally, she told me it was because she couldn't sleep at night because her boyfriend had been stalking her for weeks. I took her to the library. I literally put her hands on the keys of the database computer. "Type, Laurel. Write 'anti-stalking laws' and push 'enter.'" A nineteen-year-old blonde zombie on tranquillizers, Laurel pushed through the fog and wrote her research paper on what she could do about being stalked. I saw her pursuer waiting outside the library. I got used to seeing his dusty white Camaro outside the classroom window. Laurel learned what Nina already knew, that she could get a court order. She left the class bright, with a new idea, followed by her lethal shadow. I never saw her on campus again, and she never came by to pick up her "A" paper. I have no idea what happened to her, and Nina's story doesn't encourage me to suppose the best. But she's a successful student, and isn't that what really counts in this profession? And anyway, I'm not her mother.

Julie's a success story, too. Julie and her fiancé were both on the Mt. Bachelor Ski Patrol. On a mid-term weekend, they were doing the last sweep of the slopes together. The heavy spring snow cut loose above the tree line and roared down the steep, narrow run Brad was sweeping, and Brad got swept. Julie's classroom journal faithfully recorded the details of his death, how they recovered his body in pieces by digging in the places where the snow was bright red, his funeral, the grief of her almost-in-laws, her own thoughts of suicide. Her research report on a snow safety program for kids was

late, but I waived my late papers policy, and she got an "A." Julie is a successful student, who knows how to manage her time.

I wish I knew how to tell you that I'm not exaggerating. I wish I could tell you in your far off place that not all the stories I hear from the blue chair are from women, although most of them are. To balance the equation, I should mention that Keith McCrory took his shirt off in class two weeks ago. We had been reading about slaves being whipped. Keith said, "You can't imagine what that feels like. All you want to do is die."

"Oh, and what do you know about it?" challenged another male student. Keith, who works in the Salem legislature and is going to school to be a paralegal, stripped off his tie and shirt and showed us the keyloided web of long, lash-mark scars on his back. "My Dad beat me and my brother with willow sticks soaked in salt water."

I should mention sixteen-year old Scott, who also dropped the class last week because, "Oh, Mrs. Jensen, I guess maybe I smoke a little too much dope. I just can't seem to focus this term. Maybe I'll be back in the fall." Or the father who told me he had chained his son to the bed, which was then locked in a closet, because his son was selling dope at Crescent Valley High School (perhaps to a bright sixteen-year-old named Scott, who was starting college early). Tell me, what category does *that* story fit into?

> Annie drove out from Kansas with her dog Fathom ("I call him Fathom because he's so deep") to join her boyfriend and go to school at LBCC. The boyfriend was living with another woman, and now Annie is living in her car because no one will rent to her and Fathom. *Why are you telling me this, Annie? Do I look like your social worker?*
>
> Elizabeth's ex-husband bribed their two boys to drive her to a park, lock her in their van, and abandon her. The police found her, and now she's finishing the class from a safe house in Bend. She's completely deaf because her husband said, "I'll beat you about the head and ears if you try to go back to school," and did. Elizabeth learned sign language and gets tutorial help through the Learning Disabilities Program.

When do I stop telling these stories? Why are there so many to tell? People move to rural Oregon from all over the country because the "quality of life" is rated so highly by all the magazines. But a harsh, daily violence soaks this green and gentle land with private grief, private blood, private stories. We are an open-enrollment school, and these are the people who flood through our doors.

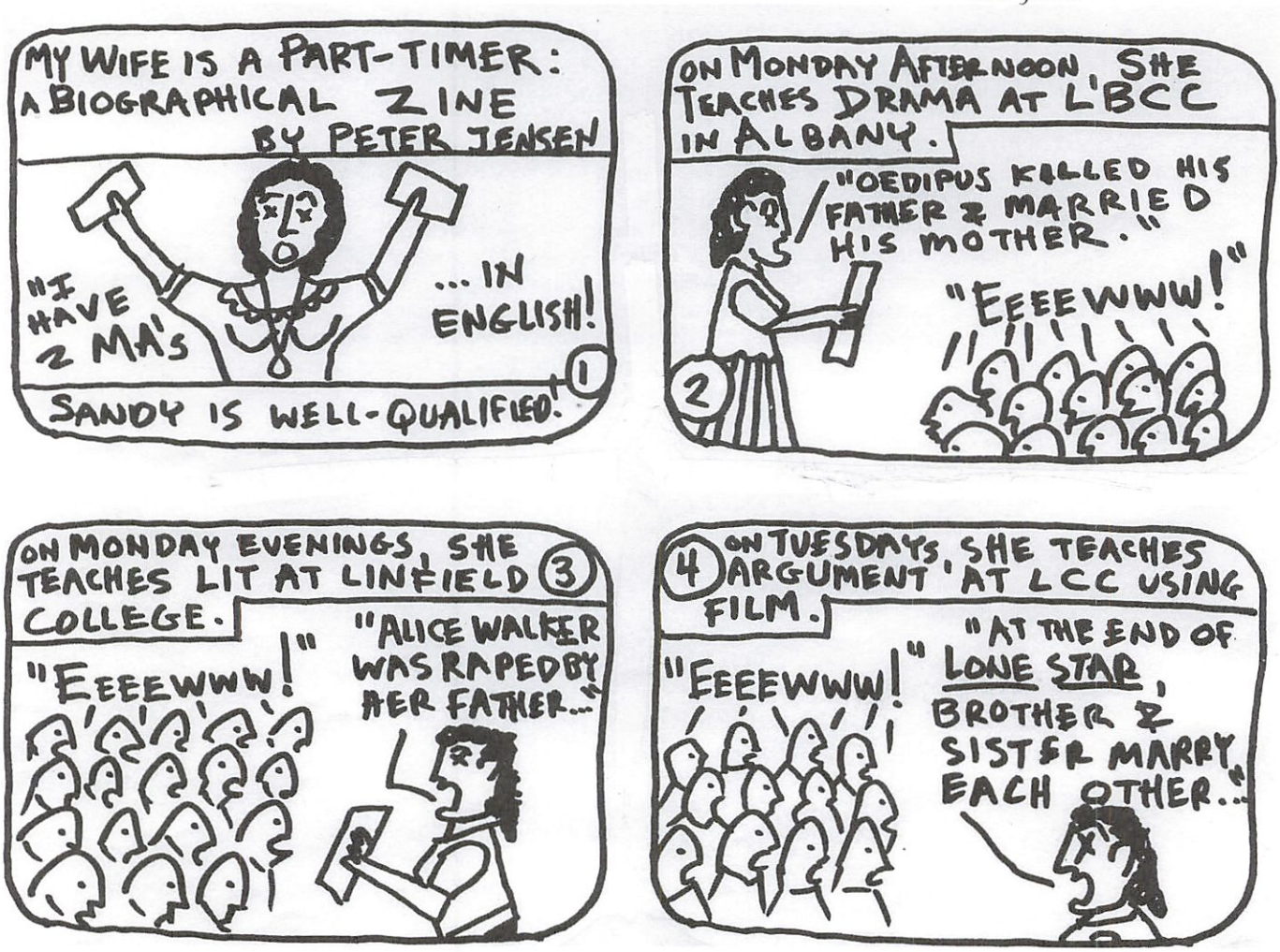
There are three weeks left in the term, and I have maybe five or eight students left out of an enrolled twenty-four. It doesn't matter to me, of course. I stare at the empty blue chair. I'll still get paid $324 at the end of the month.

Sandra Jensen
is a Northwest native who was raised "East of the Mountains" in the middle of eighty acres of apple orchard. She has published across multiple genre lines, including poetry, fiction, academic, and creative non-fiction for twenty years. Her first book of poetry, I Saw Us in a Painting, *has just been released by Walking Bird Press (2006). She writes and teaches at Lane Community College, Linn Benton Community College, and Linfield College from her home in Eugene, Oregon.*

Peter Jensen
teaches writing and literature at Linn Benton Community College in Albany. He was also a prize-winning cartoonist for his high school newspaper and is inspired by his students to get back into the Sharpie, cartooning 'zine revolution (as you can see by the cartoon on the following page).

A Part-Timer's Biographical Zine

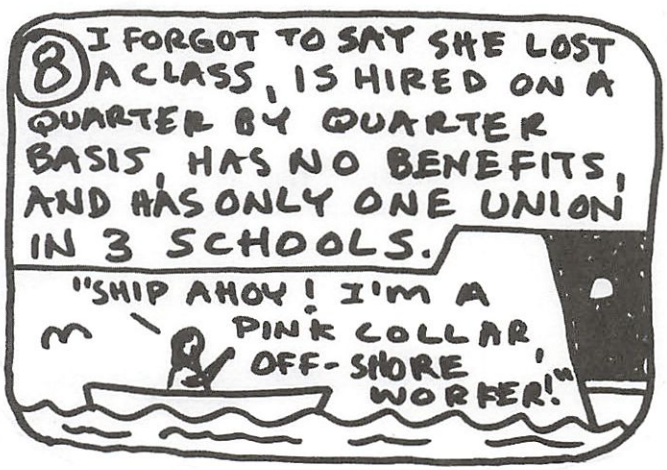
Peter Jensen




ON WEDNESDAY, SHE TEACHES WRITING LAB FOR LBCC IN SWEET HOME.
GAS
"THAT'LL BE $31.00."
"EEEEWWW!"
$31.00
5


ON THURSDAYS, SHE TEACHES ON-LINE.
"DISCUSS ESSAY BY LINH KIEU NGO ON "CANNIBALISM."
STUDENTS' EMAIL RESPONSE
"EEEEWWW!"
6


ON FRIDAY, SANDY GETS HER PAYCHECKS.
7
"EEEEWWW!"
BILLS


8
I FORGOT TO SAY SHE LOST A CLASS, IS HIRED ON A QUARTER BY QUARTER BASIS, HAS NO BENEFITS, AND HAS ONLY ONE UNION IN 3 SCHOOLS.
"SHIP AHOY! I'M A PINK COLLAR, OFF-SHORE WORKER!"

Haibun

Jean LeBlanc

Astrology

From my cubicle at work I hear colleagues lament tuition payments, tattoos, midnight telephone calls. Front page headlines announce another casualty, another accident, another arrest, all followed by names not yet twenty years old. So when my friends rhapsodize about their baby's future, as foretold by the stars, what can a childless skeptic do but nod and smile?

little stream
the ocean will not ask you
your name

That One Student

The week before final exams, it's my grand finale in Comp. II. I take my class on an imagery tour from Isaiah's "all flesh is grass" to Whitman ruminating on "What is the grass?" to Sandburg's "I cover all." We ponder the miracle of this common stuff; we explore the secret language of lawn, wheat field, battlefield, cemetery. Through poetry, we reapers grim look for meaning in the swath we cut through life. Or are we the grass, awaiting the scythe?

all semester
her mouth
a sneer

One Thousand Misplaced Apostrophes

After a morning of grading papers, I take my stiff shoulders for a walk around campus. A day neither winter nor spring, gray and chilly yet tinged with the scent of earth unfreezing. The scrim of ice has melted from the pond.

three birch saplings
uproot themselves
boys in t-shirts

Back to the cubicle and my students' tales of tentative ventures into the tame woods of northwestern New Jersey. With every essay I grade, my own spelling deteriorates. I pause even at the crime of *its'* and think, *something doesn't look right.* I am distracted by a recurring white flash out of the corner of my eye.

upper campus, lower campus
the shuttle bus
weaves a semester

Jean LeBlanc
grew up in Massachusetts and now lives in Newton, New Jersey. She is a part-time English instructor at Sussex County Community College. Her poetry and essays have appeared in numerous journals, including the Lullwater Review, Journal of New Jersey Poets, Modern Haiku, *and* Frogpond *(the journal of the Haiku Society of America). She also has two poems in the anthology* The Muse Strikes Back *(Story Line Press, 1997). Her writing is informed by the natural world, from backyard garden to wild woodland.*

My Father's Eyes

Michele Meredith

I look at you—you look at me;
But I cannot truly tell whether you see me;
Or what you think as you hurry abruptly from me…
Puzzling…yet ironically…enlightening.

I could get lost in the muck and mire
Couching my hurt in words curt and terse;
Progressive thoughts hurtling in reverse—
And like a prisoner of dread duck my head to
Avoid your stare…the unspoken, 'why are you here?'

So here we are again;
Blown spectrum, senseless dictum,
Rights, privilege, legacy,
Isms, schisms, dogma…dogma-*nure?*
Bigotry, alienation, exclusion, idiocy!
Tolerate diversity?
Condescendingly entertaining me,
You know you want no part of me!

Your eyes ask the question, I know the answer.
While you try to determine my fate;
There are things about me I appreciate:
I am. I have.
I am the face of determination. I am the voice of hope.
I have in many instances and through much—overcome.
I am the product of courage. I have evolved.

How comforting for me to know that there is one who affirms me;
Not based on accomplishment or accolades,
Not victories, failures or escapades,
But simply that I am…me.

While you glare at me contemptuously,
Rudely and impatiently dismissing me,
I know.
I'm not a conjured, carved or molten being,
But created in beautiful imagery
And through my Father's eyes with joy I see,
I am indeed loved…for me.
That's my joy. That's my peace.
While your eyes pierce me like a blade,
I walk away *knowing* that I am
Fearfully and wonderfully made.

Michele Meredith *is a full-time instructor at Lane Community College, educator, dedicated Special Educator, parent of a teenager and advocate for people with disabilities. She earned an M.S. and Ph.D. from the University of Oregon and a B.S. with honors from the University of The West Indies in Kingston, Jamaica, her homeland. Colleagues say she brings to the Lane faculty, and the students in the ABSE department, her deep wisdom, compassion and creativity.*

Why Not Teach Intelligent Design in Our Schools? A Passionate Look at the Controversy

Nick Strobel

Like numerous counterparts across the nation, my city's high school board is considering mandating the teaching of Intelligent Design alongside biological evolution in the biology classes. If your community is not grappling with this issue yet, it *will* soon! I am in both "camps" in the science-religion debate/dialogue. I am an astronomy professor with a Ph.D. in astrophysics from a major research university, and I am an active, participating member of a United Methodist church.[1]

As a Christian and as a scientist, I am against the requirement of teaching Intelligent Design in our school science classes. Intelligent Design is actually the Bible-literalist creationism idea with slick scientific-looking packaging. If one is going to teach about Intelligent Design, then one must teach about the Designer. As a Christian, I do not want my children being instructed on the Designer by biology teachers who will eventually have to meet the theological criteria of literalist beliefs held by a subset of Christians. As a Christian who has experienced the presence of God through study of the Bible, I do *not* agree that I must read the scriptures as literal fact. I do *not* believe that the truth of the scriptures is only valid if it can be proven or verified by physical means. I do not believe that the only valid truth is factual. A literalist view of scriptures is an outgrowth of the philosophy and time period from which modern science arose (called the Enlightenment) that identified truth with factuality. The truth of the Bible is metaphorical and does not depend on historical factuality.[1]

The requirement of teaching Intelligent Design in our schools is a first step in forcing our children to believe in a literalist interpretation of the Bible and in a fundamentalist conception of God. As a patriot who loves this country, I do not want a public representative in authority (a school teacher) giving my children the message that they should hold a particular religious viewpoint. As a Christian, I do not want that public authority teaching my children a religious belief that I do not share. This will happen if the Intelligent Design proponents and creationists have their way.

As a scientist, I am against teaching Intelligent Design as a valid scientific theory because it is not a scientific theory. A scientific theory is not an "unproven assumption" as is often stated by non-scientists. A scientific theory is a logical, systematic set of principles or an explanation that has been *verified*—has stood up against attempts to prove it false. A scientific theory must make testable predictions. Intelligent Design, like creationism, holds a particular explanation about our physical world to be true no matter what—it cannot be proven false, nor can it be modified when new evidence

is discovered. Intelligent Design, like creationism, assumes that God created everything, that some physical things and processes cannot be understood or explained without invoking a supernatural entity, the master Designer, and that no facts or observation can contradict that belief. This is fine as a religious belief, but not as a scientific theory.

Many criticisms of evolution, Big Bang theory, etc. by the creationists and Intelligent Design advocates center on gaps in our understanding. Unfortunately for them, people using the scientific method have filled in many of those gaps. No scientist will say that science knows everything. If there is a gap in our understanding, the person acting as a scientist will say we don't know the reason for something *yet* and will work to find the reason from physical, non-spiritual means. That is the power and the limit of science.

My brother, Brett Strobel, is a minister in a United Methodist Church in Grants Pass, Oregon. In one piece about science and religion[2] he gave another criticism of this "God in the gaps" idea held by the creationists/ID people. Intelligent Design "makes God a 'natural fact' which is poor theology. Nature is God's 'handiwork,' but God is far more, far above that—transcendent mystery. (Read Psalm 139:1-18 as a refresher.) When God becomes another factor in nature, an explanation that fills in the gaps of our knowledge, then what happens when our new discoveries start shrinking those gaps? As Dietrich Bonhoeffer pointed out[3], God becomes less and less relevant. Such a reductionist view of God, no matter how well intended, is idolatry or even sacrilege of a sinister sort."

The realm of science is the physical, natural universe. As a Christian, I do not use the methods of science to prove God exists or to prove my faith is valid. Science was never meant to do that. Creationists, Intelligent Design advocates, and scientists who try to prove the existence of God or to disprove God exists are misapplying the methods of science to something outside the realm of science. As a scientist, I can*not* say whether God exists or not, whether God does or does not act. As a Christian, I *can* say that.

The fact that I can *not* use science to prove God exists and acts does *not* make my faith weaker, less valid, or less real than those who believe in a literal-factual interpretation of the Bible. Tens of millions of Christians in the United States will agree with that statement. They are not as vocal as the literalist Christian group, nor do journalists focus as much attention on them. Newspapers, magazines, radio and television shows *thrive* on controversy because it attracts more viewers/listeners. The media *magnifies* controversy. The literalist Christians and the subset of scientists who are atheists welcome media attention and oblige by shouting at each other. The two opposing extremist groups think that whoever shouts the loudest and longest will win the argument. This is what elementary school children do, not mature adults.

As a scientist, I am against teaching Intelligent Design as a valid scientific theory because it has not undergone the peer review and correction of the scientific process. Theories like biological evolution, atomic theory, and gravity theory are taught in our high schools because they have been verified and refined by many people using the scientific method. Any scientist would *love* to prove those theories wrong or incomplete because they would get a lot of fame for making that breakthrough. Scientists spend *years* testing scientific theories in pursuit of a radical break from what was previously thought. Creationism and Intelligent Design advocates seek to do an "end-run" around the tried-and-true process of science and curriculum development by legislating their beliefs into our schools.

Creationism and Intelligent Design advocates argue from the position of authority rather than from the evidence of the physical universe. Because they have people with Ph.D.s in the sciences working in their organizations, anything they say must be scientific. This is like my second-grader arguing she is right and her sister is not because she is in the second grade and her sister is just in kindergarten. PhD scientists are not the judges of scientific truth; careful observations of nature are the sole judge. I cannot say I am correct just because I have a Ph.D. in astrophysics from a prestigious institution. I have to offer evidence.[4]

Under the guise of "fair play," Intelligent Design advocates want to be included in the science curriculum, even getting equal time with scientifically verified theories such as evolution. Teach the controversy, they say. Well, our science teachers already do teach about the scientific controversies: what are areas of current scientific research. They teach our children what we know and what we don't know, what we are still trying to figure out. If Intelligent Design advocates are allowed to circumvent the educational process, then in the interest of fair play, I want my religious viewpoint of science-religion to get equal time too. Muslims, Jews, Sikhs, Buddhists and Hindus, should get their equal time, too. In the interest of fair play, astrologers should get equal time in astronomy classes. Clearly, this is a mistaken notion of fairness.

An expanded version of this article is also available online at
http://www.astronomynotes.com/why-not-ID.htm

Endnotes

[1] For further discussion of reading the Bible metaphorically, please see my article "The Truth of the Bible Is Metaphorical" at http://www.astronomynotes.com/science-religion/truth-metaphor.htm (posted on October 7, 2005).

[2] Strobel, Brett. October 2005. Newman United Methodist Church newsletter.

[3] Bonhoeffer, Dietrich 1953. "Letters and Papers From Prison". London: SCM Press. Edited by Eberhard Bethge and translated by Reginald Fuller. Now available from Touchstone of Simon & Schuster.

Here are some resources explaining how we know the Earth and Universe are far older than what a literalist interpretation of the Hebrew Bible (what Christians refer to as the "Old Testament"). Since I am not a biologist, I will refer you to Jerry Coyne's article "The Faith That Dare Not Speak Its Name" in *The New Republic*, August 22 & 29, 2005 p. 21-33 for a detailed critique of the biological claims made by creationists/ID people. He responds to popular anti-biological evolution books such as *Of Pandas and People* and *Darwin's Black Box*.

- Strobel, Nick. 2004. "Is Radioactive Dating Valid" in *Astronomy Notes*, p. 216. New York: McGraw-Hill Primis Custom Publishing. Also available at http://www.astronomynotes.com/solfluf/s4.htm#A4.2.3
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- American Astronomical Society and Astronomical Society of the Pacific. 2004. *An Ancient Universe: How Astronomers Know the Vast Scale of Cosmic Time*. Available at http://education.aas.org/publications/ancientuniverse.html

Nick Strobel
has been a professor of astronomy at Bakersfield College since 1996. His Ph.D. in astrophysics is from the University of Washington. He is the author of the popular Astronomy Notes website. He is married to Lisa Strobel, with whom he has two daughters. (And they are all very beautiful!)

Vice, Rage, Blues

J.D. Mackenzie

So it happened without warning and the news traveled quickly. She was gone. With no opportunities for goodbyes. No cathartic venting. No sorrow. Way too late for anger. No regrets. Honestly, nothing.

And so the alternative endings were no longer possible.

But here's the strange part: Of all of the emotions he felt, surprise was not among them. He would not allow himself to dwell on how expected this all was. About how what had shocked others was for him an absolute certainty.

He did not care about vindication. He was past the point of caring if people knew that he was right, and she was wrong. At this point, nobody cared who was right and who was wrong. She was gone.

He had known of other tragic events, and her passing was nothing if not tragic. His personal experience with tragedies was characterized by creepy little patterns, predictable and depressing. Bad news. Shock. Suspension of belief. Denial. Questioning. Tired clichés (she would have wanted that). Displaced responsibility. Regret. Acceptance. Euphoria chocolate. Microbrews. A return to normalcy.

This tragedy was different in all the ways that different can be measured.

It did not help that there were no survivors to reach out to, unless you counted those three pathetic hound dogs. Yes, somewhere out there, she had left behind a grown child in some other state, with no distinguishing features or identity. But you couldn't really regard her as a survivor because this grown daughter, who had started out as a newborn and was given up for adoption by a scared teenager, had never met her birth mother. Sound judgment and courage do not come easily to sixteen-year-old girls, but the decision to give up this child for adoption would rank among her best decisions, maybe *the* best decision in a life more often marked by altered states of consciousness and really bad judgment.

She had no known faith and no close friends or neighbors invested enough to step forward and make final arrangements. Somewhere in a minimalist will, he had heard vague references to scattering ashes on a beach near Cabo. No names were named. All of her assets were directed to the dogs. There was nobody to send flowers to, no one to call and comfort or to be comforted by. No mention of religion.

In all this, the strangest part was not his lack of surprise upon hearing the news. No, the strangest part was that he knew exactly how it was going to end for her. His certainty included the cause of death and the events leading up to it, if not the time or location.

The last time he spoke with her it was revealed with such clarity. By then, her disease had overtaken almost everything good about her. It was obvious she had drunk her breakfast again. By noon, she had managed to insult everyone within earshot. Even so, their last goodbye was civilized. He was probably more professional to her than she deserved.

Deep down, he was relieved that she was leaving for another job, that she would no longer hurt those around her, people he'd grown to respect and become protective of since his arrival the previous year. Take care. Probably see you at a tailgater.

Yes, he knew exactly what would happen soon after, but he did not know when. One night when he described this all to K, she asked, "Are you sure?" Of course it was a question he could not answer to her satisfaction. His knowing was felt more than understood. He had never experienced anything like it before, a dark thought that should have been repressed at once.

He knew that the next time he heard anything at all about her it would be about how she had died in an alcohol-related traffic accident. The familiar stretch of road that led to her home had become almost a screen saver in the back of his mind, a fog shrouded hallucination with recognizable features. He knew what was going to happen. What he didn't know was when, exactly where, and that others would be involved.

So K went off on him and asked where he got off thinking that he had this power and wasn't it kind of reckless to go around making these macabre predictions? He had to explain, with more than a little difficulty, that this was different from predicting, that it was really going to happen, that he didn't go around looking for this particular kind of knowledge, that it was more like the truth looking for him. It was simply a matter of not knowing anything more than he knew about this one certain thing right then.

So how is anyone expected to deal with a burden like that? To know, to have thought those thoughts well in advance, to have heard the news along with everyone else, and then have to look back and accept it? To know that you knew and, having known, you did nothing? But that wasn't exactly true. He was well aware of her condition and tried on more than one occasion to get her to pull herself together, at least while at work. But nothing changed. He flirted with the self-doubt that comes from feeling there may have been something he could have done to prevent this particular ending. But that doubt was tempered by knowing how futile it is to force oneself between self-destructive people and their self-destructive habits without their consents. Their passions trump your caring every time. They win, you lose, and then they lose, just to let you know that they can.

A few weeks passed and he just coped. And during that time, surprisingly, his point of view changed. He used to think that coping was settling, retreating into the

least needed to survive. Now, he had begun to understand that sometimes coping is the most heroic response. But nobody just copes forever.

A gathering of friends was planned, everyone knowing full well how inane it would have been to call it a funeral or a life celebration. And on the night before, he sat down with the double-0-18 Martin guitar (his favorite instrument for writing), the worn notepad, a pen and the thoughts that kept interrupting his consciousness. Working by formula, he replayed what had been swirling in his mind for weeks, grabbed it with a practiced intensity, braided together the lyrics, and finished with a dark, minor tune:

She left without a warning
No tears & no regrets
No pause for deep reflections
No chance to look back

How do you send her off?
And how do you say goodbye?
When she left on her own terms
You never got a chance to try

No place to send a letter
No number you can call
No way to know she's listening
It's just the end, that's all

What of any good inside
She challenged you to see?
You're left with slings and arrows
Burned in your memory

No place to send a letter
No number you can call
No way to know she's listening
It's just the end, that's all

Not Michael Stipe, not Dave Mathews, just something he could call his own. It did what all songs are supposed to do, giving voice to ideas that needed the company of others.

He had recorded other songs from time to time, but that would not happen with this song because that was not the point. If there was a point here to be learned, it was the pointlessness of this whole ending. Or so he believed.

The next day unfolded slowly. He decided to join in the gathering he'd hoped to avoid. There were just the right number of friends and old co-workers (enough), the right amount of religion (none detected), and plenty of music, food, and wine. No uncomfortable pauses. No speeches or toasts, no moral lessons. A few funny stories without getting too deep.

Some people brought their instruments, and there were enough scattered about the house for everyone who wanted to play. When the playing started, it was mostly instrumental and mostly up. There were some blues, but nothing too specific. His sad song stayed in his head.

And while there was no mention of the accident, or of the disease that had caused it, you might have experienced the afternoon and left with the impression that she was a good person, a person liked by her friends, a person who did not deliberately harm others. And you would have been mostly right. There was no mention of her disease, of how she treated others, of her faceless child in parts unknown, or of the people who survived the accident.

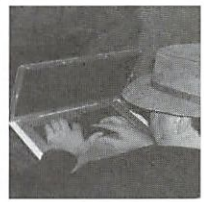
It was just the end, that's all. Sometimes there isn't anything more.

But with more time came more perspective, and after a year, his point of view changed. Initially, he was vexed by the thought that her passing was such a huge waste. She had died, and it had all just stopped for her. No survivors. No announcements. No service. No trust. No brick in a wall. No tree planted and no bench built. Nothing. For someone raised in traditions of ritual and ceremony, he struggled with the lack of closure.

So what was her legacy? Where were the lessons?

Eventually, her former co-workers relearned a kind of respectful civility that before had been only the exception. Now they were more comfortable being creative, brainstorming new projects, and knowing that a good idea wouldn't die an abrupt, cruel death by her denigration. At least three people who heard the story determined to drink less, in each case with more than a little difficulty. There was an upward trend in long distance calls to friends who'd been neglected over time. More of the positive memories found their way into reflective moments and conversations. She hadn't always been drunk and mean. Over time, her occasional kindness, work ethic and generosity were remembered. The dogs, with their newly acquired inheritance, found loving foster homes to live out their days.

And everyone who knew her was a little more alert on the highway.



J.D. Mackenzie *writes fiction instead of going to therapy and values his privacy enough to use a name other than his own when writing creatively. He earned degrees in Psychology and Adult Education from Oregon State University and has attended five community colleges throughout Oregon. He enjoys being outdoors, friendships, travel, and working at Lane, which he has done since 2004. His most recent writing includes* Koans from the Cohort: a rendering into English of a learner's path to mastery, *and* Jerome, a Part of Everything. *He lives with his partner and their son in the foothills of the Coast Range.*

The Sticks and Stones Question

Michael Sámano

Sticks & Stones…

Born in uncertain times,
WW II in the early 40s,
Mommy and Daddy,
    Proud, yet scared.

Precious baby boy,
Loving, loving boy.
Blue eyes—observing and absorbing.
Little features virgin lips,
    "Mama" first word, "Mama."

Born in uncertain times,
Vietnam in the early 60s,
Mommy and Daddy,
    Proud yet scared.
I have brown eyes,
I'm precious too.

Can break your bones…

Early 90s, Red Rooster near campus.
Brown-eyed college boy,
    Reclined in a chair.
Blue-eyed barber,
    Scissors clip clip clip.

Two military veterans bonding, bullshitting,
One about the 60s.
One about the 80s.

We finish the cut,
We finish the talk,
    Swivel chair—face the mirror.

But words…

Blue eyes meet brown eyes
He starts to speak,
"How's the cut?" I'm thinking he'll ask.

Instead
I
Hear
The Question:
"I gotta hand it to you, you speak English real good. How long ya been in this country?"

The Question.
Down two blocks from
    Sacred Heart
Where a frightened teenager:
    Girl—White.
Gave birth to a beautiful baby:
    Boy—Brown.

True story.
Hurtful story.

Can never hurt you…

Stupid-ass advice.

Hello, my name is Cuauhtémoc Sámano Chávez. Cuauhtémoc is pronounced Qwow-TEH-mocha. It means "Descending Eagle." What does your name mean? I am fourteen months old, and I like to dance to music. I also like to play chase, and I like to climb and explore. I can say the following words: mama, dada, no, ball, agua, book, and wow-wow (for dog). My parents work at Lane Community College. My dada is **Michael Sámano**, *the Coordinator of Ethnic Studies. My mama is Rosa Chávez, a student advisor in the Transiciones program. They love me.*

Remembrances

Judith Mikesch McKenzie

The line moves quickly. There are pockets of muffled chatter, but mostly people stand, moving forward step by quiet step.

Jinny Michelle leans in toward my shoulder. "What's that up ahead?"

"I don't know. Maybe a security tent?"

She nods, and steps back beside her younger sister, in line behind me. The night before, more than thirty thousand people had trod this same path, and, before this day is done, thirty thousand more will pass.

As we move to the head of the line, a uniformed guard comes and hand-selects groups of people to follow him, as they've opened an extra security station to accommodate the crowd. Purses and packs are inspected; everyone walks through the security gate. The Capitol dome rises above us, and clear paths mark the way to the front entrance, facing the Capitol Mall. We go up the marbled stairs together, hands seeking out hands as the crowd around us grows ever more hushed.

So small. The room seen often on newsbroadcasts and in publicity photos seems a shrunken version of the sweeping media images. A ten foot area in the center is cordoned off with golden ropes, and, just off from the very center sits the sleek and somewhat small brown casket. The crowd makes no sound at all as we move around the circumference, all eyes on the small wooden box, while a CNN camera sweeps the room. Ahead of us, two women stop to say a prayer, and we stop as well. It is then that my daughter begins to cry.

On the other end of the phone line, Jinny's voice worked hard not to break. She strove for anger instead of pain. "How can people be this way, Mom?"

I pulled in a deep breath, searching for words. How many times in the life of this young biracial woman had I tried and failed to explain the insidious racism that still lives in so many hearts, that sometimes finds its way out in ignorance and denial, and other times, such as this, in overt hostility? How many times more would I try and fail?

"I think you should file a complaint, sweetie. Your children have to live in that neighborhood, too."

Her sense of futility was palpable in the silence.

"I don't know…" she began.

Another student, she told me, had taken a complaint to university administration, and been told he should take a walk and think about it before filing.

We talked. We shared. Eventually, we even laughed.

At the end, she told me she felt better for having called me. "It's just that, you know, all of this, and hearing about Rosa Parks passing…I just was overwhelmed."

"You know, they're putting her in state at the Capitol Rotunda in Washington. Not many civilians have had that honor."

"And she's the first woman ever, Mom. God, I wish I could see that."

Finally, we hung up.

I sat in the sunshine on my deck. A dear friend of mine was terminally ill, and I was due at her home to help care for her, to relieve another friend who'd been there for the night. I had papers to grade, laundry to do, bills to pay.

I dialed my daughter's number again.

"Hello?"

"Pack your bags. We're going to D.C. to see Rosa Parks."

"What?!"

"And call your sister; she's going, too."

"Oh my God."

We come down the steps into the fall sunshine and the spectacular view down Capitol Mall. Stop. Take pictures. Just stand there. Jinny and Shawn stay close to each other, talking low. I don't know how much time to give them, how much I need. We decide to get something to eat before the motorcade.

"Where's a restaurant?" Jinny asks.

"I don't know." I look around—the Mall stretches into the distance, and gray government buildings are everywhere.

Eventually, we head away from the Capitol, back toward Union Station. Shawn leads the way, saying she remembers how the streets lay; they make sense to her. She moves with confidence. "Why didn't they let pictures be taken in there?"

"I don't know. Security?" I step off the curb and walk ahead, turning back to the sound of Shawn's laughter.

"We're like…What's this, Mom? What's that? Why those? Why the other thing? And Mom's like…I. Don't. Know." We all laugh, and walk ahead to the small restaurant Shawn's spotted.

We sit at the bar, and each of my girls orders a drink.

"You know what was the most amazing to me, Mom?" Jinny pauses, looks at her drink, then at me. "It wasn't just being there, seeing the woman who made so much possible for people like me… It was being in that room with so many other African-Americans. While we were in there, inside that room, almost everyone there was black." She takes a drink and shakes her head, smiling, "I've never felt *that* before. Being in the presence of so many other African Americans, so many others who *know*."

The room hushed when the lovely black woman stood to face us. She began to speak quietly, and her voice grew in power as she described the moment she'd been verbally assaulted. "When he said that word to me," she said, looking directly at the

audience, "I felt burned—like someone pressed my entire body, every inch of my skin, to a red-hot stove." Here, her voice broke, and a murmur of sympathy ran through the crowd. She looked up sharply. "Don't look at me and pity my pain. I want you to feel my pain, embrace it. Be with me."

The meeting had been called to confront pain. Over a period of a few weeks, some of the black employees on campus had been verbally assaulted by a white man using the worst of racial epithets. Unlike most academic meetings, this one was emotional and powerful. One black employee left the meeting in tears. So did I.

Afterwards, a group of colleagues gathered in the hallway to talk. One suggested that the announced formation of a racism task force would do no good. She said it would be just like the sexual harassment process—that they would end up hauling in the casual comments and not the "real racists." Around the circle, heads were nodding. Hearing this, seeing this, I took a breath, and suggested to them that these were areas where the matter of degree was irrelevant.

Jinny and Shawn on the steps of the Capitol Rotunda, Washington, D.C.

Later that day, one of them told me that a few weeks before, she had answered her door to find two little black girls soliciting funds to raise money for their church. She'd immediately assumed they were running a con, and turned them away. She said to me that I should understand that she only reacted that way because a week before, she'd been hassled downtown by two black girls who were "clearly running a con." All

through this story, my anger grew. I thought of the pictures on the wall of my office—of my two black daughters, of all the years of watching the set of their shoulders when I'd send them back into the world after doors closed in their faces. I could clearly remember the look in their eyes as they came to know—far too young—what those closed doors meant.

At the time, I didn't have anything to say to this woman. I knew that my experience as a white mother of black daughters would be utterly foreign to her, that she couldn't understand how simply hearing this story would hurt, how much pain it would evoke.

Some time later, I went to see her and tried to tell her how her story had made me feel. She said that she had told me because, following that meeting, she felt a need to confess. I told her that I shouldn't be expected to offer forgiveness, that absolution was something I could not give. Not for this. She asked me not to speak to her again, because she said that I made her feel harassed.

We wander. Knowing they only have one full day in D.C., Jinny and Shawn had made a list of the places they wanted to see, as had I. At the top of all our lists is the Vietnam War Memorial. We take a bus to the steps of the Lincoln Memorial, and linger there a while, Shawn clowning in front of the Gettysburg Address, posing as though she's writing the words, while Jinny takes a picture. Then we make our way to the Wall.

I walk along, reading names. Ronald Heniz. Rodger Eckstein. David Thomas Wilson. Jefferson Parks. Charles Robinson. Phillip A. Nichols. Ronald Cartwright. Robert Gibbs. William Basschow. David Bruner. A dozen names. Two dozen. Hundreds.

"You all right, Mom?"

I shake my head. Each name seems to leap off the wall at me—a son, a father, a brother. A mother crying for each and every one. I can't stop the tears. My daughters had asked me if there was a particular someone I'd be looking for. I'd given them the name of a classmate from high school: Carson Newman. I can't tell them that what I'm really looking for is my entire generation. What happened to us? Fifty-eight thousand of us lost: never to return to grieving families, lost forever in distant jungles and fields...and the rest of us lost in so many other ways.

My daughters stand in front of panel 23E, looking for the name. They reach to touch me, then stand away. I wander down the Wall. Michael L. Wilson. John Robert Urban. Douglas Sanchez. David Chapman. James C. Newman. The last name, caught in the slanting afternoon light, calls me. I reach out and touch it. Who is this? The name is similar to my high school friend, but, as I run my fingers over the letters, I feel something else. Young brown eyes, sandy hair that tosses back when he laughs. What is this fantasy? Either there are ghosts in the Wall, or my emotions have lost control. Perhaps both.

A white administrator stood near the end of the meeting. She said she wanted people to know that we were all burned by this—when the speaker talked of feeling

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burned by these events, that she felt burned as much. Racism is a fire, she said, that affects all of us. Around the room, white heads nodded vigorously. As she spoke, I found myself looking around the room, at the few and scattered black faces. From black face to black face, what I saw there was what I was feeling, but what no one said: white people as victims of racism touch their fingers to a lit match. Black people are thrown bodily into the bonfire.

What happened to me, the pain I felt from watching my family suffer, is but touching my finger to a lit match. There is no comparison to the bonfires into which our community members, our neighbors—and my children—are thrown on a daily basis. But if these campus colleagues are not the bonfire, they hold the match that lights it. To resist racism we must confront pain. Like any growth, it is not easy, and the path of least resistance is to avoid it, to back away, to let the hurt continue to be felt by those born into it.

My late husband, the father of my two beautiful girls, avoided Vietnam. Like many residents of black neighborhoods, he was actively recruited, but, also like others, he knew that black soldiers were far more likely to be sacrificed on the front lines than white. Rather than be drafted, he enlisted in the Navy, and rode out the war at sea. Proud to serve his country, he had no intention of letting it do a disservice to him.

More than eight thousand of those 58,000 names on the Wall are those of young black men who believed that fighting the war meant fighting for their country, meant fighting for their own families, their culture, their freedom from racism and access to equality. Of the 58,000 deaths in Vietnam, almost 33,000 were E-3 and E-4 pay grades—young enlisted, mostly working class. The youngest American "man" to die in Vietnam was fifteen. The most common age of those who died was nineteen. *Nineteen.*

Our flight back leaves early the next morning. The cab driver who takes us to the airport is a handsome young black man, and my girls take up a conversation with him. The hotel concierge, the ticket agent, the security guard at the airport—all black. Shawn turns to Jinny, laughing, "Where do we look?"

Jinny laughs, delighted. "I know!"

I don't understand, so they explain. "At home in Oregon, every time we see a black person, we make eye contact, like a connection, because it doesn't happen often. Here, we could spend all day trying to make eye contact in one room!" They both laugh.

As we board the plane for our connection to Phoenix, we find that, as on all three of our other flights, our seats are in the last row of the plane.

"The back of the bus!" Shawn quips. Jinny and Shawn are the only two black people on the plane. No one laughs.

The Making and Un-making of an "Other"

Pamelyn Dane

...when they [women writers] came to set their thoughts on paper...they had no tradition behind them, or one so short and partial that it was of little help. For we think back through our mothers if we are women. It is useless to go to the great men writers for help, however much one may go to them for pleasure. (Virginia Woolf 79)

I begin this essay with a quote from Virginia Woolf, a woman who suffered injustices from the educational system of her time because women weren't allowed into universities or allowed to have access to the great libraries. She suffered, like many women before her and like many women today, because of the loss of those women who came before her, women whose intellects and imaginations had been buried, erased, and banned from public consumption. As Woolf points out, women think through their mothers, and many women today still haven't had access to their intellectual "mothers."

The importance of everyone learning about their intellectual mothers can't be overstated, yet I wonder how many male colleagues, whether they be in history, sociology, art, or literature, teach the rich intellectual and artistic achievements of women? How many of our male colleagues have actually *taken* classes or studied issues addressing the rich intellectual history and artistic achievements of women? If our curriculum isn't infused with women's works, then we are continuing the long tradition of suppressing women's voices and roles in society. If equality is ever to be achieved, both women and men need to be taught about diversity issues related to women and their lives.

Gender is often left out of the mix when we discuss diversity in curriculum and teaching. Allan Johnson points out that "instead of talking about racism and sexism that plague people's lives, people talk about 'diversity' and 'tolerance' and 'appreciating difference.' These are not the same as the 'isms'" (12). I think his point is well taken. For example, I have attended many diversity trainings where discussion about gender issues and sexism often seem to fall away. Interestingly, each diversity training has been led by a male, usually white. Although these diversity trainers are usually quick to point out that they are a part of the "privileged" in society, I think that a tall, white male presenting about issues of diversity is ironic. Because the general idea still persists in this culture that "neutral" is white male; and because men are often the ones who are hired to talk about diversity, gender issues and sexism often don't get mentioned, or are only mentioned as an aside. (This seems to be a tradition when it comes to diversity issues. Women were strongly opposed to slavery and worked

hard to get it overturned, but when it came time for people like Fredrick Douglass to come to the aid of the women's abolition movement, it didn't happen.)

By not talking about diversity in terms of gender or naming the sexism that continues to exist in our country, our colleges, and our curriculum, women are silenced. They hear this not-so-subtle message that their experience in the world is not only unimportant, but also not so different from that of our brothers. We need to continue to ask questions such as "Who speaks? Who listens? And Why?" (hooks 40).

Women, both white and of color, again as in the past, are the ones whose voices aren't being heard. As bell hooks writes, "Within the patriarchal academy, women have consistently learned how to choose between sexist biases in knowledge that reinscribe domination based on gender or the forms of knowledge that intensify awareness of gender equality and female self-determination"(hooks 2). Interestingly, we do not have a women's studies department here at my institution, Lane Community College, anymore. This is unfortunate because one of the few places in the academy where women have been able to find gender equality is in women's studies. I've been told that Lane used to have a women's studies program but it was collapsed along with ethnic studies into an interdisciplinary program some years ago. That program was later done away with and women's studies has never been revived. (Thankfully, the Ethnic Studies Program was reinstituted in the 1990s.) That leaves women's works often delegated to one class period or ignored altogether, creating sexist biases in knowledge that will continue to disenfranchise both women teachers and students.

I would like to illustrate why women's issues, literature, and history need to be brought to the forefront by using my own experience with higher education and what it meant to me to learn about my foremothers. I have to admit that it seems very strange to be arguing this point again when so many think that sexism is no longer an issue, and that we are all treated equally and should just let this go. However, one only needs to read the daily newspapers to see how quickly our rights are being eroded. The push for the overturn of *Roe v. Wade* is just one example.

I didn't attend college as a young woman, but instead did what was expected of me at that time. I married, had children, and began a career. After working for many years in media and discovering that women's experiences and expertise weren't what was respected, I began a new career as a college student with four children, much like many of my students here at Lane. I was so excited at the prospect of being in a situation where I would be appreciated for my mind and not discriminated against because of my gender. I had by then discovered the women's movement and was active in the National Organization for Women (NOW) and worked to get the Equal Rights Amendment passed. I was angry! My consciousness had been raised. So the world of the mind seemed to me to be a place where gender would not be an issue. I would be on equal footing with the men in the department. I believed that sexism was not a part of those who were college professors and intellectuals.

Like my students today, I eagerly awaited the first day of classes. I bought my books, new pens, and paper. However, my experience, again much like my students, was often disappointing. I couldn't find my experience depicted in the lectures, the readings, or the films. The professors mainly talked to the males, because the men seemed to have the most to say in the class, or at least they said it the loudest and longest. I was silenced.

I distinctly remember asking one of my favorite professors (male), who taught a 20th century literature class, why we weren't reading any women (let alone women of color)? He said that there weren't any who were good enough writers to be included. Imagine my surprise! There weren't any 20th century women writers good enough to be included in the curriculum? Another white male professor grabbed hold of Alice Walker's *The Color Purple* one evening and threw it on the floor, stating it was trash. Of course, if you challenged this assumption, you were called angry, strident, or maybe even accused of "whining."

I was only able to maintain my intellectual sanity by taking classes offered by the women professors whose classrooms mirrored my way of being and thinking. These classes talked about women's writing and experience. They gave voice to writers and thinkers that I never knew existed. These writers helped me to understand that I wasn't alone, that my experience was an ancient one, that I even had a literary tradition, as well as a theoretical position, from which to speak. These professors and the works they introduced gave me a voice. "Those classrooms were the one space where teachers were willing to acknowledge a connection between ideas learned in university settings and those learned in life practices" (hooks, *Teaching to Transgress* 15). As I think back on this, I wonder how many of my male colleagues have had this experience. I know that there were never any men in my women's literature or women's studies classes. Could this be one of the reasons that gender so often falls away from the diversity discussion? Could it also be the reason that many of my male colleagues find it easier to teach about racism and classicism than about gender?

As I consider these issues, I think back on my classes and try to remember when I finally found my own voice. It was in a Women's Literature class, and I distinctly remember the joy and excitement I had upon discovering so many women writers and their works. In order to present the importance of this to my own learning, I am including the following excerpt from a paper that I wrote for that class. I think it still exudes my own wonder and awe and mirrors what I wish for all of our women students as they discover their own intellectual heritage. The paper was titled "Fragments, Letters, Silences and Images: Marks on a Page." It was in response to Mary Wollstonecraft.

> For me the silences are being broken. The spaces between words, lines, and margins are being read. Voices are singing, screaming,

whispering out of these places in time and space where silence was once thought to be all there was. Women's voices, which have always been there, somewhere in the dark recess of my mind have awakened and my head is filled with images and my ears are ringing with sound. Sound so clear, so wonderful that I am saddened that I haven't been able to discover its clarity before now.

Of course, it hasn't been easy for any of us to discover the sounds of these voices. Women have lamented this for generations. Long before Virginia Woolf wrote that we had no mother's eyes to see the world through, Elizabeth Barrett Browning wrote nearly the same words, and women before her did the same. All of these women were writing, talking, and noting the fact of the silencing of women's experiences. All of us have suffered because of this. But the women have always been there writing, talking, singing their stories. The women have been verbose in their silences.

As I am learning to look for the silence and to read the sub-texts of literature, I am becoming aware of these women. I see them shuffling, marching, walking, running, skipping, one after the other; some in groups, others alone. These women are short, tall, thin, fat, white, brown, black, yellow, old, young, and each is beautiful; each one a human being. Some are laughing, some are singing, some giggling, others screaming, but are making noise. Each carries a pen, ink, paper, and a book. Each one has learned to write and to read. Some write notes on scraps of paper; some write letters, some speeches and others whole books; but all write and their writings reveal their stories, their voices, and their silences. Now these scraps of writing are being given to their daughters, for all of us are their daughters, as a gift of remembrance, as a gift of life, as a way of validating both their lives and ours.

Virginia Woolf had to imagine a sister for Shakespeare. Today, as we learn and search and dig deeper and deeper into trunks in our attics, search in back rooms of libraries, prod into desk drawers and old cardboard boxes, we discover real sisters and we celebrate their lives.

As I reread this essay, written almost twenty years ago, I am amazed at my excitement and what it meant to me to find these women. This is the same excitement that we need to share with our students today. By not including women more equally into our teaching and curriculum we are in effect continuing this silencing.

As I continued along my path toward my degree, the university that I attended stated that it was making a concerted effort to become more diverse in its curriculum. I decided every term to check this out and would take a walk around the university bookstore, making note of the books and authors being taught. Interestingly, these authors never seemed to change. Yes, some professors (mainly women) were incorporating women and women of color into their syllabi, but few of the men were. Also, the same small group of women writers were being taught—Virginia Woolf, Toni Morrison, Alice Walker, Emily Dickinson, Charlotte Bronte, Maxine Hong Kingston, Louise Erdrich, and Sandra Cisneros. When looking at these bookshelves, there didn't seem to be very many women to choose from. Could this be because both male professors and students had problems reading works by and about women?

But as time moved on there were rumblings about the curriculum and the canon. The female graduate students were pushing for something more, and the new professors (again mainly women) were also expanding their offerings. Things began looking better. Of course the other side of all this was that there were few women professors to work with and no women professors of color. I rather imagine that most men have never thought about what it would be like to not have someone like you as a mentor, or to have a male professor tell you that you would be better off staying home taking care of your children. Because of these types of attitudes, almost every female graduate student wanted to work with one of the women professors, and because of this increased workload, some didn't get tenure. During my time at the university there were no men that I knew of who didn't receive tenure and at least three women who didn't receive tenure. It made one wonder about the prospects of becoming a female professor.

Making a jump to my current life and work, I brought with me the notion that women's work and women's lives should be brought to the forefront. This is not to delegate the lives of others to a place of lesser importance, but to try and give equal treatment to all women. I've come to believe that many instructors want to teach diverse authors and ideas, but still omit women. I believe this because when I teach my classes, I often ask students if they have read or heard of the women whom I incorporate into my syllabi, and for the most part they haven't encountered any women or women's history in their past education. Most have no idea about women's push to get the vote or about the women's movement. They have misconceptions about feminism and still believe that women haven't done much of anything to further western culture. It should be noted that the women's literature classes continue to fill and that the students, both men and women, who take these classes say they come away excited with their newfound knowledge of those who have been silenced in the past and wonder why they have never been introduced to these ideas before.

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What does this mean in terms of what we do here at Lane? Educator and philosopher Paulo Freire writes that education should be liberating. What is taught and how it is taught lies at the basis of a liberating education. These are notions that feminist scholars have been discussing for years, and these ideas need to be reemphasized with regard to teaching women's issues. Twenty years ago, educators Dale Spender and Jane Tompkins were telling us we were shortchanging ourselves and our students by not teaching in a more diverse way with regards to women. I think this is still true today. We need to try harder to incorporate women's issues into our teaching. I believe that we need to talk more about gender issues when we discuss diversity. We need to have women and women of color present diversity workshops.

I think that our women students often feel disenfranchised because their voices and their experiences aren't considered important. All of us, regardless of our disciplines, should make an effort to not ghettoize women's works and contributions into one week of the term. I would like to see more men work with women's works because I'm afraid that it is still the women faculty who do the most work in this area.

In terms of my own work, I consciously try to teach both male and female writers equally. I also try to teach writers of color equally and to include as many different viewpoints as I possibly can. This isn't an easy task. It means leaving out more canonical writers. But it does mean that, hopefully, my students hear a diverse chorus of voices and in that chorus they can find their own. Discovering the women writers that I have, and the work of feminist critics such as bell hooks and others, has given me a voice and has helped me to understand that my experience is real and also different from that of my brothers.

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Sustainability at Lane

Old tires, spray cans and metal buckets translate to safety in the Advanced Technology Department at Lane. "We take the money we get from recycling metal and rubber, and buy things like oil container systems on wheels," says Ed Glazier, instructional specialist in automotive technology. He points to a white plastic container holding a large metal drum labeled WASTE OIL. In the past students carried pans of used oil over to the drums, or dragged them across the floor. Now they just roll the container to where they're working, Glazier says. "It cuts down on spills, and of course the risk of injury."

Special Section: Sustainability

Sustainability is about the relationship between the two most complex systems on earth—human and living…While the word sustainability is relatively new, every culture has confronted this relationship for better or ill. Historically, no civilization has reversed its tracks with respect to the environment but rather has declined and disappeared because it forfeited its own habitat. For the first time in history, a civilization—its people, companies, and governments—is trying to arrest this slide and understand how to live on earth. This is a watershed in human existence.

– Paul Hawken

Agricultural land near Harrisburg 2004

Methane pipe, landfill near Corvallis 2005

Field burn near Silverton 2004

Grass field, housing development near Sublimity 2005

John Bauguess *has been a photographer in the Pacific Northwest for more than forty years. He taught photography at Lane Community College in the early 1970s and throughout the 1990s. His social documentary and fine art projects include essays on wolves, the Oregon Old-Time Fiddler project,* People Without Addresses: Stories of the Homeless, Communities in Economic Crisis, and Willamette Valley Migrant Labor Camps. *His current work focuses on human alteration of the natural landscape.*

Sustaining Ourselves: The Significance of Self Exploration in a Developmental Writing Class

Elizabeth Frye

The first day I stepped on campus as a first-year student, I knew I would never be the same. I accepted the notion that as I experienced college life, I would change. What I didn't count on is that my mother, at age forty-three, began exploring her identity, and she changed, too.

That year, my mother enrolled in a women's writing class at a local college, and she stepped into the classroom as a degree student for the first time in twenty years. Almost immediately, I could see a difference in her whole demeanor. She spoke more precisely. She developed a disciplined schedule. She focused on herself instead of my father, my brother and me.

When I returned home on breaks, we discussed books and essays, and commiserated about homework. I wrote about gender and race issues and collaborated with my classmates to produce a newspaper. She viewed Amy Tan's *The Joy Luck Club*, read Dante's *Inferno*, and wrote about relationships and mortality. Our separate writing experiences provided a bridge between us as we tried on new identities, and helped us to sustain our changing relationship. Looking back on those moments, I now realize the powerful influence writing can play in the self-exploration process and how the practice of writing sustains us, emotionally and spiritually, during transition.

In the spring of 2004, when I was in the first year of my doctoral program, I went to a Virginia community college two days a week to collect observational data in a writing class. These students were not traditional, eighteen-year-old coeds on a four-year plan, and this was not just any developmental writing class. In the course of a semester, I watched these community college writers explore their classroom and community identities. Some daringly interrupted the harping of their inner critics and heard faint murmurs of voices that had been silenced since childhood. Others took advantage of the chance to reflect on their lives and the world around them. I also saw students experimenting with word choice and rhythm, and connecting their writing to performance.

Perspective, Choice, Self Exploration and Content Inquiry

As part of my duties on the same doctoral project, I teamed with others to synthesize research about writing at the elementary, middle school and community college levels. In preparation for a conference presentation, we revisited our initial

research question, *What do students do when they write across the curriculum?* and discovered that students at all levels included the following elements: perspective, choice, self-exploration and content inquiry. Here is a brief overview of the process.

Perspective

When community college students first receive an assignment or inclination to write, they begin by establishing their perspective. According to the dictionary, perspective is "a particular evaluation of a situation or facts, especially from one person's point of view." Some students may decide to choose a lens based on conventions in a subject area or direction from an instructor, but in the absence of guidelines, they tend to trust their intuition. In company with novice writers of other ages, community college students construct their perspective from a wealth of background knowledge, life experience, curiosity, and cultural knowledge.

Choice

From perspective, the students typically move into the realm of choice. They devise a preliminary approach through their decisions about genre, structure, collaboration, priority, and purpose. They feel empowered, even liberated, especially if their choices have been limited in past writing experiences. At the same time, however, they can feel overwhelmed by choices, for with choice comes responsibility.

Self Exploration

Every time they make a choice, they learn something about themselves. Sometimes they learn about where they come from and what's interesting or important to them about a topic. Other times, they come face to face with their strengths and weaknesses as a writer, a student, or a human being. Many writers take risks. When students pour out their innermost feelings and fears, they isolate themselves for the moment. Then, once it's out there and they can't go back, they often find a classroom filled with people who are just as vulnerable. They're in community.

Content Inquiry

Fortunately, the self-exploration process isn't the end of the journey, but merely a beginning. The more college students learn, the more they seek a connection with the world around them. And they ask questions. Who else thinks like I do? When in history did others struggle with this issue? Why is this significant? As they search for answers, they often begin a long and winding journey through content areas and disciplines.

When I investigated the paths of four community college writers, I noticed each example resulted from a different prompt, each reflected a different set of risks on the part of the writer, but the same perspective-choice-self exploration-content inquiry feature was present in their work, and elements of each piece reflected how important writing was in sustaining the self.

Four Case Studies of Community College Students Wandering the Path of Perspective, Choice, Self Exploration and Content Inquiry

At the college, I watched students incorporate the perspective-choice-self exploration and content inquiry elements into their writing process. They had one formal guideline: to finish five pieces of writing. Outside of that guideline, the students enjoyed the freedom to experiment with different genres and styles of writing.

They also shared their writing in groups that met several times during the course. In general, the class quickly warmed up to this opportunity, and on the designated peer conference days, they began to congregate as soon as the session began. They welcomed compliments and praise for their work, but often, they accepted critical feedback with skepticism, almost as if they questioned whether their peers knew any more than they did.

As the students persevered with the groups, though, I identified why this learning format was so essential to their success. Ultimately, they did not alter the papers in any significant way, but each student expanded the concept of their own and others' identities. As writers, they fully recognized the risks involved in sharing their drafts, but also knew it would free them from whatever fears were holding them back in their learning.

To demonstrate this process thoroughly, I present cases from the writing class.

Jesse: A Woman of the New World

One of my first "Aha!" moments came when I worked with Jesse, a twenty-one year old student and recent immigrant from Peru. A soft-spoken young woman, Jesse had been a pre-med student in her home country, until her mother decided to move Jesse and her siblings to the United States. Upon arriving in Virginia, Jesse learned she had to return to high school and begin the college process again. Although she was compliant with the requirements, there was a lifeless tone in her voice when she talked about the backtracking; she was definitely disenchanted with the system.

When the class was asked to write an essay placing a positive spin on a social problem, Jesse had little trouble coming up with the issue. She was distressed about the number of young women in abusive relationships, but she struggled with the challenge of turning that into a positive. In an effort to help her frame the subsequent

essay, I asked her what might be done to prevent such relationships from occurring in the first place. With that prompt, she quickly latched onto the idea of building self-esteem in young women, and she was off and searching for articles to support her topic. Here is are quotes from Jesse's paper:

> *Women of the New World: Building Our Self Esteem*
>
> A well-built self-esteem will help to make important decisions in life. The reason why women are more vulnerable to face depression as a result of failure is related to self-esteem. We wouldn't need such strange and damaging conflict if we first learn how to love ourselves....
>
> "I love myself" is not enough, we need to explore ourselves. We will discover our deepest thoughts and feelings....
>
> Mothers are also mentors. They have a huge responsibility with the teaching process referring to the building of self-esteem.

Notice how Jesse included the features we discussed earlier: perspective, choice, self-discovery, and content exploration. She first claimed a *perspective*—resistance to the abuse of women She *chose* to write about how to build women's self esteem. She *discovered* how complex this topic is for her and her peers, and she searched for articles (*content*) to supplement her empirical knowledge. Jesse sustained herself through the challenges in her new world by writing. She explored her interests, presented her perspective, and ultimately gained a stronger sense of self in the process.

Two Views on Love

Yagelski (2000) says that literacy "is a matter of individual empowerment in the way that it can enable one to negotiate the complexities of life" (3) As I heard tales of happily ever after contrasted with stories of love gone wrong, I remembered that relationships were one of those "complexities" never far from the minds of the students.

By this stage of their lives, most had been through first love and first heartbreak and many of these students had been parents for some time. In this environment, it was natural to see some of the students using writing as a way to make sense of their experiences. What was significant, though, was that many of them also wanted to use writing to change the way they related to others.

Vince: A Casualty of Love

At the beginning of class, Vince glided past the instructor and ignored her morning greeting with a brusque "hmmpfff." I wondered about his sour attitude, but I

thought he might be stressed about the next writing assignment or not as far along on his paper as he wanted to be.

I noticed that he sat away from his usual support group. He quickly became fixated on a set of papers from his backpack and throughout the class, he only looked up occasionally to take note of the board.

Finally, as the class was winding down, his intriguing behavior began to make sense. Vince asked if he could share his paper. Thrilled to have a volunteer, the instructor enthusiastically agreed, and he launched into the piece of writing.

He read the paper like a performer in a poetry slam. He put into words his experience in a relationship that seemed to be on the rocks. He astutely described himself as the "insignificant other" and lamented that indescribable feeling that "something is telling you that you're not wanted there anymore."

He blew me away. He engaged the audience from the first sentence and his words helped to carry us along for the ride. He evoked powerful, gut-wrenching feelings. The class members and I had been there too, and we kept silent to honor his anguish.

In addition to his capable writing, I admired his courage to share that experience and release it through writing. To enter a class frustrated and have some of that sentiment diminish before the end of the class is a powerful validation for using writing as an emotional outlet. Here are some excerpts from the piece:

> *Love and War: The Casualties of Love*
>
> Love is a crazy thing that keeps you on your toes, from left to right. Some people play with it all the time. Some people think that love is about a baby. Then there is some that don't understand love, that selected few....
>
> Any time you get an uneasy feeling that makes you feel awkward or out of place it's not good. When you feel that "third degree" from him or her—something is not right. Say for example, you and your mate are holding it down and you have been there for almost two years. Suddenly you feel that something is telling you that you are not wanted there anymore. The intensity fills you up and your mind starts stressing and that heaviness brings you down. Reality is there are one two many women that would be willing to take a gentleman that is educated, hard working, and no children.

Rachel: A lover, not a politician

At first, Rachel kept her eyes glued on the page. She took a deep breath, tested the water with the first line of the paper, and looked around. Satisfied with our reactions, she raised her voice, raised her eyes and raised our level of consciousness about what it means to be a young lesbian in love.

In a different class or writing group, she might have remained silent. But she felt comfortable enough sharing this aspect of her identity with her writing group. She says:

Love, not Politics

My fiancé, Kara, had many thoughts on the issue of marriage. When asked what her opinion of marriage was she responded, "I believe in marriage between two consenting adults promising to love one another for the rest of their lives. I do not believe that a bond made based on emotion can be restricted by race, religion, sexual orientation or any other factors outside of a loving relationship."

She proposed to me on December 27, 2003 by hiding the ring inside of many other boxes that took frustrating minutes to unwrap. I remember feeling like a kid in a candy store trying to open that delicious piece of mouth-watering chocolate. The waterfall of tears streamed down my face as a squeaky voice through all the emotion said "yes" to the one question I had waited my whole life to hear.

Kara remembers, however, me being rather calm during the whole activity of unwrapping presents. She went on to say that there was this uncomfortable silence that was awakened by my hugging her and saying yes, of course. However I know that I was more emotional during the whole proposal.

Like Jesse, Vince and Rachel began with their perspectives. They each shared a moment universal to couples in committed relationships followed by a distinct position. In Rachel's case, she is part of a same-sex couple. She made a choice to let us in on a private, intimate moment between her and her fiancé. She explored how it felt to put her true self out for others to see. Finally, she began to research how her own situation compared with the plight of other same-sex couples across the country and she became more knowledgeable about the legal inequality between couples. For Vince, the emotion surrounding his current love affair was prompting him to question its continuation. He chose to describe the raw feelings as a way to explore the meaning behind them. He ached from the unresolved state of affairs and wrote to warn others of the emotional consequences of delaying closure.

Both of these writers also utilized writing to sustain themselves. In Rachel's case, she is committed to a relationship with her fiancée, but she asserts her perspective in their love story. In Vince's case he is gathering the strength to make a decision congruent with his values even if it means ending the relationship.

Jana: Ready for Motorcross

With stealth-like precision, Jana ducks under the projector lights and slips in late again. This muscular blond with steely blue eyes sports a baseball cap hiding a novice beautician's unfortunate fusion of Miss Clairol numbers 99 and 103. Not one to make excuses for anything, she quickly pulls out today's assignment, her writing notebook and the companion reading for the film.

It just so happens Jana is one of the premier female motorcross riders in our local area. A seasoned veteran on the women's circuit, she chose to write about motorcross to educate her classmates about the nuances of this unusual sport. Although the majority of her essay is devoted to facts and information, one of the most compelling sections is about the kind of character it takes to be a motorcross racer. In this excerpt, it is interesting to note the contrast of her oppositional stance to the limited notions of male/female behaviors and her undoubtedly feminine voice.

> *Are You Ready For Motorcross?*
>
> Devotion is also an important aspect involved with racing. Racing takes patience, so you have to devote your heart to it. You have to be able to face problems when they come to you at unexpected times. Things can, and will happen to you, and to your bike. You have to be able to control your temper when something unexpected happens to your bike and leaves you sitting on the side of the track. You have to devote yourself to fixing the problem before the next race. You can't just sit around crying about every little thing that happens to you or your bike. Motorcross will leave you with lots of problems, big and small. That is motorcross for you, everyone has to cope with glitches, so stick with the sport. Not only will things happen to you and your bike, but everyone must master the bad things in motorcross before they can master being good. In other words, you will lose several races before you take home the first place trophy. Devotion is a strong key word for success in motorcross racing.

Jana illustrates the four aspects of these students' process in the most pronounced way. Along with her class, she had written narratives and begun to focus on her experiences as a motorcross rider by telling stories (*perspective*). When it came time to write, however, she *chose* an expository form. She *discovered* the concept of devotion is integral to her sport and to her own life. She looked to the *content* to share the experience with the reader.

Jana sustains her love and passion for her sport by tapping into the aspects of motorcross that feed her soul. For her, it is more than just the thrill of competition.

Elizabeth Frye (Beth) *was a Lane Community College instructor in the Academic Learning Skills Department from 1999-2003. She is currently finishing her Ph.D. in Reading at the University of Virginia in Charlottesville. Her dissertation study is a qualitative evaluation of after-school book clubs for at-risk adolescent girls. She misses her "family" at Lane, and is eager to find an assistant professor position surrounded by creative, eclectic, generous individuals like her former colleagues and friends. Her sidekick is a thirteen-year-old American Eskimo named Murphee.*

She embodies the necessary values on and off the track. She pushes herself emotionally and spiritually to achieve as she cultivates a symbiotic relationship with the sport. The sport feeds who she is, and who she is feeds the sport.

Cultivating a Climate for Self-Exploration in the Community College Writing Classroom

Donald Graves, author of *Bringing Life into Learning: Creating a Lasting Literacy*, says, "To ignore our fellow human beings is to miss out on the greatest journey of all, that of becoming human ourselves." It follows that we sustain ourselves through our human connections, and when we write, we slow down enough to realize the worth of those relationships.

Take for instance, the story of my mom and me. When I spoke with her recently and told her about my plans to include her in this manuscript, she first replied, "Famous…or infamous again!" But as we talked about the context of our story, we realized this writing is once again mediating our relationship as we try on new identities.

Today, I write for a different purpose: publication. She confines her writing to e-mails, letters and the occasional consumer watchdog rant. I fret about finishing my doctoral classes, embarking on my dissertation year and finding a job. She worries about the employment termination papers she just received, a bone marrow transplant on the horizon and the uncertainty of her future. I contemplate whether I am ready to step into the role of "professor," while she shuns the identity of "cancer patient."

As we talk more about the piece of writing, I realize I share the same perspective as the community college writers I observed last year. I seek a safe community where I can write without fear of misunderstanding. I take risks when my life and my humanity collide with the ideas in my professional work because I know that I can stretch and open up a space for myself that didn't exist before. I begin with my perspective, make choices about my work, explore who I am, and look outward for information, reassurance and understanding.

Like the students, I continue. Writing into my new identity. Sustaining myself.

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Against Sustainability

Ben Hill

Now a word *against* sustainability. Or, more accurately, against certain ideas and assumptions that the term reinforces. As a buzzword in business and academe, "sustainability" encourages resource conservation and waste reduction, but also falsely suggests that such behavior will allow humans to restore and indefinitely sustain a harmonious relationship with other life on Earth, and that Earth, in turn, will sustain six billion humans and their descendants.

The fossil record shows that species appear and evolve not by slow steady change, but through what Niles Eldredge and Stephen Jay Gould called *punctuated equilibria*: long periods of relative stability punctuated by spurts of rapid adaptation.[1] Rapid adaptation can occur locally in isolated populations, but it occurs most broadly and dramatically when entire ecosystems transform in response to environmental change. One such event, caused by an asteroid or comet impact, ended the age of dinosaurs about 65 million years ago.[2] Another, caused by people, is underway and may end the age of mammals. It is too late to prevent or reverse this process.

Most of Earth's large animals have been decimated in population and range. Key habitats are collapsing, including coral reefs, of which 60 percent are imminently threatened by human activity,[3] and tropical rain forests, of which 60 percent have already been destroyed.[4] By one estimate, species face extinction at a rate of 130 per day.[5] The atmosphere and climate have changed, and these changes are accelerating with grave implications.[6] Even with the immediate removal of humans from the system, it is doubtful that Earth's next biological equilibrium would resemble the previous one. So with a human population that grew from three to 6.5 billion between 1960 and 2005 and is projected to exceed nine billion by 2050,[7] we cannot reasonably hope to save the planet by riding the bus.

I don't mean to discourage conservation, just to clarify its limitations. Of course we should reduce, reuse and recycle when possible, because in the short term this preserves our habitat and serves our economic interests. But let us not imagine that in the bargain we are protecting the biosphere. The notion of sustainability tends to conflate these disparate problems: humanity's short-term impact on humanity's quality of life, and humanity's medium-term impact on all of life. Not only are measures in response to the first problem insufficient to the second. *Ultimately, improvements in the efficiency of human resource consumption exacerbate the ecological crisis.*Though germane to the present, this point may be easier to grasp by looking at the past. Consider the environmental problems of prehistoric humans. Even a small band of people subsisting by hunting and gathering have an impact on local resources and are limited in population by what anthropologists call the habitat's *"carrying capacity,"* the number of

humans supportable per unit of land area. Suppose one member of the band learns to preserve food with salt, another institutes a program of firewood conservation, and a third invents the fishhook. Innovations that allow more efficient use of resources increase the carrying capacity. In the short term they relieve environmental pressures and create a sense of plenty. But in the medium term they lead to increases in population that restore the balance between procreation and resource scarcity. This is true whether the innovation facilitates conservation, waste management, or access to alternative resources.

Historically, the *big* innovations of animal husbandry and agriculture relieved pressure on animal and plant resources as never before and, when adopted, must have seemed like environmental panaceas. In retrospect, however, it is clear that these developments allowed larger groups of humans to live in proximity, facilitating the population explosion and setting the stage for the current crisis. Today's resource solutions can quickly become part of the problem. High-tech farming with chemical pesticides, bio-engineered crops, and hormone-treated livestock alleviates hunger by producing more food with fewer resources. But as the environmental drawbacks grow increasingly apparent, global population continues to grow in the space that high-tech farming has created, making a general retreat from these practices impossible without causing famine.

Will the day be saved by some new sustainability practice or invention? Hydrogen cars? Cold fusion? Besides facilitating population growth, even the cleanest and greenest innovations have the effect of relieving constraints on economic activities with cascading environmental consequences. Consider the low-flow toilet. Around 1970, geologists warned that water resources in the Colorado River drainage were almost fully utilized, raising questions about the viability of further development in parts of the American Southwest. Between 1970 and 2004, however, the population of Arizona tripled,[8] as residents accepted increased regulation of water resources and embraced conservation measures, including the 1.6-gallon flush.

A classic sustainability innovation, the low-flow toilet seems to spare the environment and aid other species by conserving water. In Arizona, however, it relieved the shortage of a key resource and allowed humans to go about their business and to move into the area and drive cars and build malls and play golf. In light of this, do you suppose Arizona's coyotes and cacti are really better off because of the low-flow toilet?

Although we claim to be motivated by the welfare of other species, our conservation and replacement efforts are focused on resources, like oil, whose scarcity threatens the continuance and expansion of business-as-usual for humans. The intellectual mischief in the idea of sustainability is that it allows us to believe that oil conservation is good for, say, penguins, when penguins would be better served if we

immediately consumed our way into an oil crisis of devastating scope. From a penguin's point of view, the bigger and sooner the crisis, the better.

There is also mischief in the message that saving the Earth is an individual responsibility and achievable through individual restraint. Of course, individuals should strive to conserve resources and manage wastes for the benefit of fellow humans and, in some cases, other organisms. However, the global ecological crisis was not caused by individuals following their consumptive impulses. It was caused by a species run amok through its ability to overcome natural limitations on population and power, often facilitated by the willingness of individuals to limit consumption or otherwise modify approaches to resource management. The trend of having more and more humans live with greater and greater resource efficiency is not a recipe for sustainable anything. Taken to extreme, the politics of personal sacrifice in support of sustainability could lead to a sci-fi dystopia in which a trillion people find themselves living sustainably in windowless cells, subsisting on algae pills.

A few behaviors, such as the use of disposable products, have come to symbolize man's adverse influence on nature. But *all* behaviors have environmental impacts. Eyebrows rise when party guests are served on paper plates, but not when extra dishware is manufactured, shipped, marketed, and kept in heated storage for occasional use.

It is easy to blame the canonical bad behaviors, as if everything would be fine if people stopped driving SUVs. But it is not so easy to define what "good" behavior is, when it comes to ecological consequences. I honestly don't know whether my hobby of wilderness canoeing is any better for the environment than throwing trash out of a train window. Often it is doubtful whether actions taken specifically to help the environment actually do help. Suppose that at my college we work to conserve paper. Does that really mean that some trees escape harvest? Or does the price of pulp wood drop slightly so that a Wisconsin landowner decides not to plant poplars but instead opens a skeet range to which people drive in SUVs to consume factory-made gunpowder and buckshot from strip mines? What about the money we save by buying less paper? Anything we spend it on will have an environmental impact.

People cannot live without using resources and creating waste. Nothing could be more natural, instinctual even, than our drive to consume resources for the improvement of our lives and the lives of our communities. In general, the more active, creative, and productive we are, the more we consume and pollute. The effect is multiplied when we spend or even donate money, because this stimulates productive behavior by others.

It is sobering to realize that, regardless of our beliefs and practices, the amount of money we spend is a rough measure of our environmental impact. Compared to any poor person, a wealthy environmentalist consumes more resources and creates more waste.

Can individuals help by choosing not to reproduce? Even assuming they don't spend the cost of childrearing on other consumptive pursuits, the environmental benefits will be local in space and time unless all humanity joins in reducing both population *and* consumption. China's one-child policy has been successful in inhibiting population growth, but during the same years that China's birth rate fell, her oil consumption grew rapidly and is currently expanding at a blistering 7.5 percent annually, seven times the U.S. rate.[9] And China's population is still growing in absolute terms at a rate of one person every four and a half seconds.[10] An effective reversal of human overreach on the planet would involve reductions in standard of living and life expectancy, as well as in population. It is difficult to conceive of such a course being taken voluntarily. Certainly nothing of the sort is contemplated under the banner of sustainability.

I don't mean to sound apocalyptic. As I write, the world outside my window is awash with life and intensely hospitable. I am optimistic that my son, born in this century, may live his entire life in a world abundant to his needs. Though I do not believe his generation will be able to reverse the biological revolution underway on the planet, I do not doubt that they will manage its effects ingeniously. Nor, when I impugn our ability to save the Earth, do I mean literally that the planet itself is threatened. We are in the process of destroying life-as-we-have-known-it, but the planet and life-in-some-form will certainly endure. Earth, in time, will deal with its human problem.

On the time scale of centuries, this human-caused punctuation will continue, likely experienced by humans not as a single asteroid-esque cataclysm, but as a protracted series of crises—meteorological, epidemiological, nutritional, nuclear. On the scale of thousands of centuries, a moment in planetary terms, life will find a new equilibrium in which species and ecosystems of unprecedented complexity may emerge. Humans or adapted humans may be part of this new order, but only if somehow constrained against overpopulating.

Meanwhile, back on the scale of years and decades, let us strive to live well and responsibly. It is within our power to respect the Earth and to dwell here compassionately and intelligently, with humor, humility, restraint, and imagination. But not sustainably.

Notes

[1]The seminal paper is Niles Eldredge and Stephen Jay Gould, "Punctuated Equilibria: An Alternative to Phyletic Gradualism, in *Models in Paleobiology,* 1972. For a broader discussion see Niles Eldredge, *Time Frames.* New York: Simon and Schuster, 1985.

[2]See for instance http://www.enchantedlearning.com/subjects/dinosaurs/extinction/Asteroid.html

[3]Dirk Bryant, Lauretta Burke, John McManus and Mark Spalding, *Reefs at Risk: A Map-Based Indicator of Potential Threats to the World's Coral Reefs*. World Resources Institute, 1998.
[4]Norman Myers, *Deforestation Rates in Tropical Rainforests and their Climatic Implications*. Friends of the Earth, 1994.
[5]Edward O. Wilson, *The Diversity of Life*. Boston: Harvard University Press, 1992.
[6]See for instance http://www.ncdc.noaa.gov/oa/climate/globalwarming.html#Q2
[7]U.S. Census Bureau, International Data Base, 4/26/2005. See http://www.census.gov/
[8]From 1,775,000 to about 5,830,000. See http://www.commerce.state.az.us/prop/eir/popanddemo.asp.
[9]Gal Luft, *Fueling the Dragon: China's Race into the Oil Market*, Institute for the Analysis of Global Security, http://www.iags.org/china.htm
[10]See http://www.cpirc.org.cn/en/eindex.htm

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Open Source Textbooks: A Sustainable Alternative?

Phil Moore and Steve Gladfelter

In response to student concerns about the escalating cost of college textbooks, some faculty at Lane Community College and its peer institutions are considering the option of "open-source" textbooks. These books would be developed by faculty and students working together to design an evolving document with content that can be modified to suit the particular needs of those who use it. In this article, we set out to explain the concept of an open-source text, discuss the motivation for proposing this alternative model, and consider some of its advantages and disadvantages.

The issue of textbook prices has received much attention lately from student public interest research groups (PIRGs), and a report recently published by the Government Accountability Office at the request of Oregon congressman David Wu confirms that textbooks have increased in price at an average rate of 6 percent per year since 1987-88, double the average inflation rate. Academic textbook publishing is a $3.4 billion industry in this country. With the average community college student spending $886 for textbooks during the 2003-04 academic year, increasing textbook prices combine with increasing tuition to impact the affordability and accessibility of higher education, and the PIRGs are working on reducing the costs of textbooks to students.

Textbook publishers offer several justifications for price increases, including the costs of preparing textbooks attractive to today's technologically literate students, the costs of producing supplementary materials to accompany textbooks, and the costs of preparing new editions every few years. Supplementary materials may include solution manuals, CD-ROM tutorials, access to specially designed websites, and supplemental teaching and testing materials for teachers. A particularly controversial topic has been the frequent issue of new editions, which now often appear every three years whereas formerly new editions more typically came out every five years. Publishers cite the need to keep textbooks up to date, but the PIRGs have suggested that because used texts cut in to new text sales, publishers use frequent new editions to eliminate this competition by making the available used books obsolete. Another controversial issue has been that of "bundling," where a text must be purchased in a package along with additional supplementary materials that the student may not want, need, or use. Publishers also cite the high cost of production of supplemental materials, especially CD-ROMs and websites, as another driving force behind package price increases. It is certainly true that these materials increase costs, but not so clear whether the costs are justifiable.

We instructors in the math division at Lane Community College face the frequent discontinuation of old textbook editions and the agonizing choice of what to do

about it. Sometimes, if a text seems to be working well for instructors and students, we take the path of least resistance and simply adopt the new edition. Other times, we may decide to invest the time and energy into reviewing alternative texts, forming a textbook search committee, reading and discussing the choices we find, adopting a new book, and finally revising the curriculum and course syllabus to reflect the change of text. This effort costs the college thousands of dollars, not in direct costs, but in lost productivity in other areas while faculty invest time in the search for and adoption of the new text.

We often find that in spite of the large number of textbooks available for our developmental and college algebra courses, some of them well written and very thoughtfully designed, none of the books offers exactly what we desire for our particular course. The topics may be covered in a different order, topics in our curriculum may not be included, or there may be too much emphasis in one particular direction at the expense of others. In the end, every textbook committee must reach some sort of compromise. We may try to compensate for the shortcomings of the adopted book by writing additional handouts and activities covering omitted topics, thereby customizing the course to our own specifications. We have occasionally been able to negotiate with publishers to obtain special customized editions for some of our larger courses. These editions may simply be pared-down versions of the original texts with unused chapters omitted, or they may actually include additional material in the form of appendices. In return for production of the special edition, we may have to agree to adopt the special edition for a fixed time period, but if the text ends up not meeting our educational needs as well as hoped, we may end up regretting such an arrangement.

So how can we in the academic community effectively meet the needs of our students while also controlling costs? One idea is for faculty to collaboratively develop an "open source" textbook that can be made available to students at cost, thus bypassing the publishing companies altogether. The concept is simple. Individual faculty members would write particular sections of the textbook, and these sections would be interwoven to form a cohesive whole. The sections could be modified in the future if other faculty members or students identify ways in which they could be improved. Thus, the open-source textbook would be a collective effort, and would not be produced by a single author. It could also be modified as needed without running afoul of copyright laws. Such books are sometimes called "free" texts because of this privilege of user modification, in reference to free or open source software. The word "free" does not mean, however, that the author or educational institution is not entitled to charge users a fee for paper copies or electronic access to the work. It simply means that the original authors do not have exclusive rights to alter or distribute the document. A movement exists to write and make free text-

books available through the Internet, and a number of texts and sets of lecture notes are already available.

If properly designed, a free textbook could also incorporate the flexibility needed to make it adaptable to a wide range of needs and differently designed courses, and might actually function better than currently available commercial texts. It would be necessary to define a framework which divides the typical curriculum into a large number of topics, with clear guidelines as to which topics must be taught before others can be introduced. Within such a framework, sections of a text could then be written and developed by a number of different authors working independently, although collaboration would eventually be necessary in weaving the individual sections together into a unified text. Such an enterprise could even involve authors from a number of different educational institutions, and in fact would probably result in a more versatile overall text. The framework would incorporate flexibility in the overall ordering of sections, which would allow the resulting text to be adopted in different forms for various courses at the same general level. For example, in the case of a developmental algebra text, one course might begin with the traditional development of symbolic algebra, while another might begin with a consideration of properties of graphs, or of the analysis of data tables. Another course intended for students in a vocational/technical program might even begin with a more practical discussion of problems arising in the particular area of study. Since chapters can be modified and rewritten, an algebra course could be custom-designed with particular applications in mind. Chapters that are not sufficiently well written can be revised, and in fact, students can be actively encouraged to evaluate sections and suggest improvements. The discussion among the authors of such a text would lead to a valuable exchange of opinions on pedagogy and goals. We have no doubt that the text itself could evolve into one of high quality.

This approach offers several advantages. Students would not be required to pay for supplemental materials that they will never use, because everything they need would be included in this document. Furthermore, this type of textbook is fully customizable since the authors could tailor its content to the needs of their particular course and edit sections as they see fit. In principle, anyone would have permission to use and edit the document, provided that they do not use it for commercial purposes. An open-source text also saves students money while better meeting the needs of faculty. This is because the whole concept is not driven by profit, but rather by the need to create course materials that are inexpensive to students, yet flexible and comprehensive with respect to the curriculum.

Beyond the challenge of coordinating such a project, there is also the challenge of recruiting faculty to contribute to it. Not all faculty members have the same level of interest in the development of materials of this sort, and even for those so inclined, teaching and other demands may limit the time available for such a project without

some sort of additional support. The problem would be particularly acute in small classes where there are relatively few faculty members available to contribute, but even in this case there is the prospect of cooperation with other institutions to spread the work burden around. It could even be possible for colleges to charge students a small fee for printed or web-based versions of the text and to use the proceeds to give release time to faculty involved in the textbook project.

One disadvantage of such a communally written text would be the lack of supplemental materials that are currently developed by publishers, but some, such as review materials and testbanks for instructors, could easily be developed within the framework. Other materials, such as tutorials and websites, could conceivably be developed and marketed by outside vendors.

We have no illusions that the approach we have suggested solves all of the current problems of textbook selection and usage, but it attempts to address two important problems: the excessive costs of today's textbooks and the adaptability of texts to particular educational needs. We believe that in the long run, this idea offers a more sustainable model in meeting the needs of both students and teachers.

Phil Moore
has been teaching math at Lane Community College since 1998. He grew up in Iowa, attended Harvard as an undergraduate, and did graduate work in physics and math at the University of Iowa. He is married to Char Heitman and they have a son, Rio.

Steve Gladfelter
has taught mathematics at Lane Community College since 1999. He grew up in southern New Jersey near Philadelphia and received an undergraduate degree in mathematics from Oberlin College in 1993. He earned masters degrees in mathematics from Rutgers University and the University of Oregon. He has been involved with OSPIRG's affordable textbook campaign, and spoke at a media event for the group in 2004.

Ruth Wren
received a B.S. in Psychology from the University of Oregon. She enjoys writing poems, songs and essays, and also conducts workshops on undoing racism and privilege. She has worked as an Administrative Support Specialist in the Social Science department at Lane Community College since 1995.

Earth and Something Else

Ruth Wren

I am made of earth, and some other, unexplainable cause.

There are riverbeds etched in the palms of my hands,
maps of something greater than the span of one woman's life.

This blood carries rainfall from the primeval forest,
while the drumming in my chest—which will one day cease to be—
pulses now...and now...and now...

This rare globe is a fertile egg in the nest of space,
saying yes to the infinite dream of generations

My body, this puzzle, these elements borrowed, say yes
to the mystery that birthed me:

This sweet, sweet earth and some other, unexplainable cause.

Sustainability at Lane

Jim Garcia, Lane's Interim Chicano/Latino Student Program Coordinator, performs *Corridos*, oral history through song. *Corridos* honor those who have struggled in behalf of the community, while highlighting significant events and issues impacting the Mexican-American people. This performance was presented by Lane's Reading Together Project as part of its 2005-06 theme, Circling Home: Stories and Sustainable Communities.

Photo Credit: Ellen Cantor

Michael Simon *marked the 25th anniversary of his employment at Lane Community College in January 2006. Except for working one year at the Illinois State Museum, he has not left school since first grade. He's been writing poetry for many years. His poems have appeared in* Elements, Denali, Fireweed, *and* Eureka Literary Magazine *(ELM), and a few odd BLM and Forest Service trailheads and watchtowers.*

Who Listens to the Trees

Michael Simon

Turtle says to walk only on two legs leads to deafness.

Spires three hundred feet tall unzip the clouds and begin
the drizzle, the downpour, the drumming of rain.
Duff absorbs and slows that one raindrop in ten that falls
straight to the forest floor. Needles, branches, mosses
leaves interlock, catching, using, deflecting the other nine.

Fawn lilies and trilliums, newts and voles at home, at work
and at worship in their intricate lives: they have heard
whispers. Coyote and owl tell stories, deer know songs.
Salmon, wise man to our ancestors rich in their myths, drive
themselves through two worlds, the fresh and the salt, to share
the truth they have guarded so long.

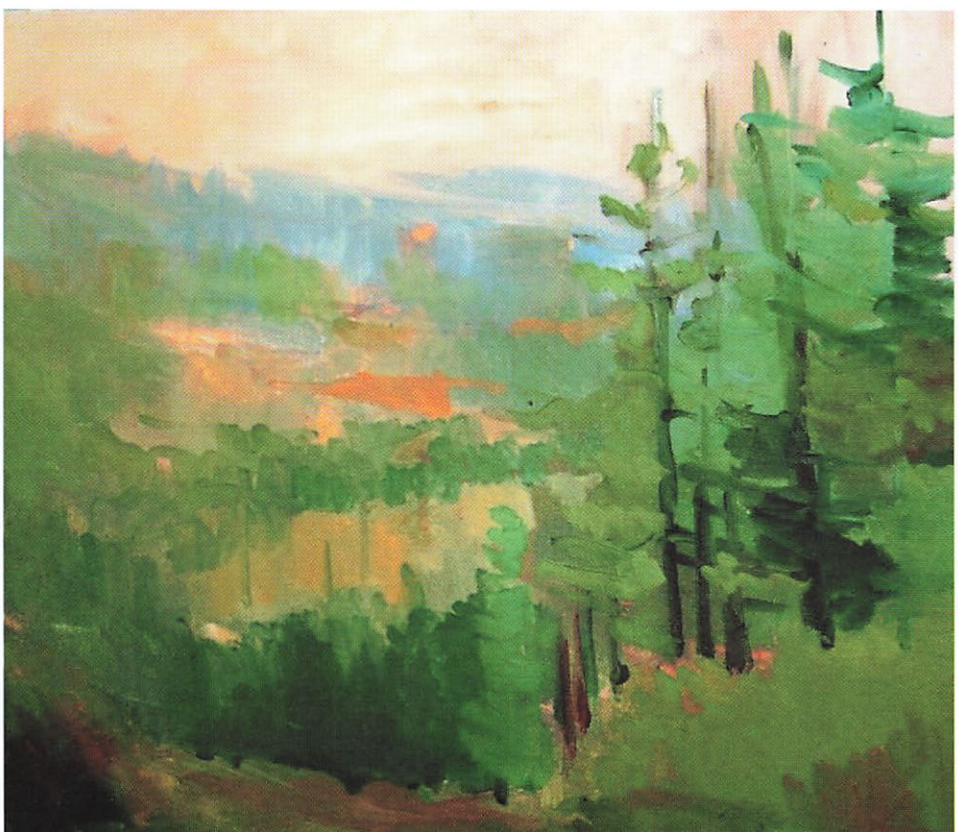
Once they could all speak to us. We have stuffed our ears
with our own self-importance. If we admit the forest talks,
we are called insane. Still, alive within us is that one cell
who knows that the deep ancient woods is our Mother.

Drip, trickle, and splash, the raindrops bond together again
forming the creek that leads to the stream that becomes
the river that is the road map we must trace backwards.

Coburg Hills

Amazon Park Venduta

View from Eagle's Nest Rest Mountain



Clearcut

Jerry Ross has been a full-time instructor in the Department of Computer and Information Science at Lane Community College since 1993. He graduated with a B.A. in Philosophy from the University of Buffalo (SUNY at Buffalo) and in 1984 from the University of Oregon with an M.A. in Interdisciplinary Studies. He has won numerous awards, including the 2000 Mayor's Choice award and the 2003 Juror's Choice award for the Mayor's Art Show of Eugene, and the juror's award at the 31st annual Willamette Valley Juried Show in Corvallis, Oregon. He was recently awarded a gold medal and an exhibit for 2006 in an art competition in Corsico, Italy. He has had recent shows in Rome, Italy at the prestigious Galleria D'Arte La Borgognona, Via del Corso, Rome (June-July, 2002) and also in Portland, Oregon at the Chetwynd-Stapleton Gallery and Marghitta Feldman Gallery in the Pearl District.

The Three R's of Biodiversity Maintenance

Albert Pooth, Ph.D.

Central to the idea of sustainability is the question of what it is we wish to sustain. One area where there is great concern about whether or not we can sustain current practices relates to our interaction with the rest of the natural environment. Humans have generally failed to use their environment in ways that are sustainable, and the result has been a steep decline in biodiversity. For me, and many others concerned with sustaining environmental quality, our greatest challenge is to reverse this decline. Ultimately, the survival of the human species will depend on our ability to do so.

Although we are relatively familiar with such environmentally degrading factors as pollution, global warming and over-harvesting, perhaps the greatest threat to biodiversity is loss of wilderness. Only small pockets of wild-land remain, and those are not likely to sustain the level of variety of life needed to also sustain human existence.

To reverse the loss of wilderness, I propose we embrace the three *R*'s: Reserve, Restore and Reconcile. The first two are fairly self-evident: 1) we must set aside those wild-lands that remain; and 2) we must restore disturbed lands to areas with relatively high biodiversity. The third *R*, though less likely to be recognized, is probably the most important. Reconciliation with nature means we need to learn to live as part of nature (which we are, whether we like it or not) rather than creating ever more artificial environments in which to live.

Effects of Human Activities on Non-Human Environments

There are a great number of ways in which human activity is impinging on the proper functioning of ecosystems. Our pollution alters behavior, changes the non-living environment on which living communities depend, and kills organisms outright. Our overuse of lifeforms continues to drive populations and species into extinction. The sprawling growth of our own habitats displaces those of many other organisms. In each of these general categories, I could list dozens, if not hundreds, of specific examples.

While the ecologists, chemists and other scientists provide proof after proof of the catastrophes our destructive nature will engender, those that profit from resource exploitation downplay, ignore and even officially alter the scientific findings. Every once in a long while, the environmentalists among us have cause to celebrate a minor victory, but while we (rightly) congratulate ourselves, we must recognize that we are far from finished; that, in fact, the rate of destruction far outstrips the rate at which we make improvements.

One negative aspect of virtually all human impacts on nature is that they depress biodiversity, in terms of numbers of individuals and in terms of kinds of organisms. This loss of diversity concerns many ecologists more than any other aspect of human environmental impact. No organisms, including humans, live in a vacuum. The interactions among organisms, while only dimly understood, are certainly extensive and complex, so that there is no doubt that the removal of one individual will affect many others. The removal of one species will affect other species, and in some cases, entire communities. A question that we don't know the answer to is how many species can be removed from an ecosystem before that ecosystem is lost? If we are talking about the global ecosystem, at what point does its destruction spell the end of the human species?

Human Reliance on the Non-Human Environment

Many people today seem to believe that there is a clear divide between human and non-human life. We spend our lives in man-made buildings and cities, obtain our foods in virtually unrecognizable forms and employ screens and poisons to keep the rest of the living world at bay. As a result, some people find it difficult to see just how thoroughly our existence depends on a functioning global ecosystem. I will mention only a few ways in which we depend on other life forms.

Most importantly, of course, we need to eat other organisms. In addition, there are a variety of bacteria that help us digest the food we eat. We can think of this group of organisms as the primary human survival community.

The plants we eat in many cases depend on animal pollinators. In other cases, our crops require associations with soil fungi to be able to absorb water and nutrients. A wide variety of predators control the populations of herbivores that compete with us for the plants we grow. The animals we eat, of course must, in turn, feed on plants. All of these organisms make up the secondary survival community.

But each member of this secondary community relies on a host of other plants, animals, fungi, bacteria and so forth, making up a multi-dimensional web of interaction, all required to some extent for the survival of the human species.

That's just considering food. A great deal of the rest of our man-made environments, including our homes, our medicines and our cultural products, come from a variety of living resources. And for every plant or animal or whatever that we rely on, there is this intricate, poorly understood web of supportive interaction. So it really is not too far-fetched to ask how much loss of biodiversity we can survive. A ten percent loss? Twenty percent? Fifty? Ninety?

Island Refuges

While extinction proceeds, there are refuges that are, at least in theory, inviolate homes in which some fraction of the earth's species can survive, presumably forever.

The establishment of such a refuge is often the cause of the kind of congratulations mentioned earlier. And there is no question that the establishment of refuges represents a stemming of the decline in global biodiversity. But is that enough?

This question takes on special importance when we think about the nature of a refuge. Typically, it is relatively small (most are not quite visible on global maps). Generally, it is surrounded by non-refuge land. In many cases, surrounding land is well developed as farmland, suburb or city. Our own William L. Finley National Wildlife Refuge in Western Oregon is surrounded on three sides by farmland and on the fourth by human residences. Highways may encircle refuges (as is the case for Mojave National Preserve) and industrial wastes impinge on their soil, water and air. Air quality in the Great Smoky Mountain National Park, for example, is often worse than that of Eugene. Indeed, they are like wild islands in seas of human development. Some ecologists argue that we no longer have any wilderness, because an important characteristic of wilderness is that it is extensive, and what we have left on our planet are small islands of more or less undisturbed habitat.

Biologists have long known that most species require wide-ranging gene flow for their populations to remain healthy. It has been shown, for example, that when a peninsula is separated from the mainland (by earthquake or other force) the organisms on the newly formed island suddenly lose access to gene flow beyond that found on the new island. The result is inbreeding, lack of resistance to diseases and eventual extinction for many populations. In a number of cases, it has been determined that the formation of such an island resulted in a 90 percent reduction in biodiversity within the next four or five centuries.

What we have left in the way of wilderness is small refuge islands. The plants and animals in a refuge can't move out to another refuge and must find all they need to survive, including mates, within the borders of the refuge. There is no appreciable gene flow. Will all our refuges face the same fate as islands formed from peninsulas? Why wouldn't they? If they do, we are looking at a *global* decline in biodiversity on the order of 90 percent. Can humans survive it?

That is just considering the effects of wild-land fragmentation. When you add to that the effects of global warming, ozone depletion, toxic pollution, over-harvesting, urban sprawl, etc., the potential for catastrophic loss of diversity becomes a near certainty. The really unsettling thing, to me at least, is that destruction of habitat all by itself could lead to the extinction of the human species, yet it is an issue given very little notice.

I am not so pessimistic as to think it's too late. The loss of biodiversity can be addressed successfully (I believe) by implementation of the three R's: Reserve, Restore and Reconcile.

Reserve

To reserve means more than setting aside additional wildlife refuges, though that is an important aspect of reserving. We must also stop the loss of wild-land as a result of our activities. Today, our coral reefs (among other ecosystems) are in grave danger from the release of large quantities of carbon dioxide and other greenhouse gases. High temperature is one of the stressors that causes coral bleaching, a condition that is fatal if it is not reversed in a matter of days. In addition, a recent study shows that excess carbon dioxide has increased the acidity of ocean water. Dissolved carbon dioxide reacts with water to form carbonic acid, and the resulting acidity can dissolve the calcium carbonate shells and other hard structures so many aquatic organisms depend on. It can even reduce the structural integrity of entire coral reefs, potentially causing them to crumble into lifeless masses of limestone rubble. So to reserve also must include the idea that our activities don't inadvertently destroy existing wild-lands.

We must learn to build back into city centers rather than allowing cities to sprawl out over more biodiverse environments. To do so, we must learn to live and work in buildings that cover less area, either as high-rises or, better yet, as subterranean structures.

We must cover fewer ecosystems with our waste, learning to reuse, to do away with unnecessary packaging and to make more durable products.

And, of course, we must all take responsibility for maintaining biodiversity around our individual homes as well as at the societal level.

Restore

Often the actions of humans have reduced once highly diverse ecosystems to virtually lifeless stretches of sand and stone. The various techniques employed by mining operations are notorious in this regard, but they are not alone. In the Amazon forests large stretches once teeming with life of all sorts are now being turned into sterile sand flats as the nutrients are stripped in the process of creating farmland that is often only usable for a decade or less.

In other parts of the world, the disturbances associated with farming and other activities allow alien species to colonize, forming monocultures that displace thousands of indigenous species.

There are quite a few examples of how such disturbed areas can be returned to a state that more closely resembles their former richness. In the everglades of southern Florida, for example, several square kilometers of a monoculture of Brazilian pepper is being replaced with a more diverse ecosystem, simply by scraping away the surface layer of soil. The piles of soil are mowed regularly so that the pepper seeds that sprout on them can't grow to a height sufficient for reproduction. Although the resulting ecosystem is not identical to any other ecosystem in the everglades, it is

comparatively rich in terms of diversity and is home to many plants and animals found elsewhere in the region. (Morgan, C. 2001; personal observation)

Reconcile

By far the most important step we can take to avoid the catastrophic loss of biodiversity is by reconciling ourselves to the notion that we are animals, parts of the wild ecosystem, and that we must live within that wilderness rather than trying to separate ourselves from it.

Our island refuges need to be connected to one another with networks of hedgerows, wild streambeds and other natural corridors. To accomplish that, we should learn to replace our fences with lines of shrubbery; put ever longer sections of our roadways underground, especially in our cities; do away with wasteful monocultures of alien grasses (lawns) and generally learn to appreciate and prefer wild surroundings.

We need to make our agriculture more an extension of the surrounding wild ecosystem and less an imitation of our factories. We must accept the inevitable: that some of our crop will be eaten by others, because trying to maximize our harvest (profit) will eventually destroy the very fabric of life that supports our crops.

We need to rethink our architecture. We should build in such a way that the ecosystems around our towns can continue through and over them as well. Office building roofs can support woodlots, our yards can be wild meadows, and we can walk and drive on stepping stones rather than ribbons of concrete and asphalt.

The Mother of All Ecological Problems

It is difficult to imagine the changes I describe above taking place on a global scale. One reason is that it involves changing the attitudes of billions of people. Would it be easier to achieve these goals if we were talking about a fraction of a billion folks instead? If only a fifth of the land currently devoted to raising crops needed to be farmed? If the human population could be contained within the boundaries of well-defined cities and towns rather than spreading, cancer-like, across the landscape?

All environmental concerns would be manageable if the human population wasn't quite so large. Not only that, but it seems likely that many other problems like crime, disease, ignorance and warfare could be handled or even eliminated if only there were fewer of us.

Ecologists know that when a population (say, humans) occupies an environment (say, the Earth), it grows exponentially, just as our population is growing. Almost always, this growth continues well beyond the carrying capacity for the species in the environment in question. As a result, exponential growth typically is followed by a population crash.

We know that the human population is still growing exponentially. What we can't say is whether or not we are above the earth's carrying capacity for humans. Even if we could artificially increase that capacity (as has been done technologically several times in the past), I wonder what the point is. Trying to cram as many people onto the planet as we possibly can seems as meaningful to me as seeing how many college students you can squeeze into a VW Beetle: The Earth may be able to support 20 billion people, but they are all going to be about as comfortable as that guy jammed into the glove box of the Bug!

When we think of the loss of wilderness, the difficulty of meeting our resource needs, and the abject poverty that characterizes the lives of one in five humans, I consider it more likely that we have exceeded carrying capacity than that we are still approaching it. This means that we are in for a population crash. Is there evidence that this will happen? I believe the increasing severity and frequency of famines answers that question.

Lowering the Human Population

There are two factors that affect the growth of a population: birth rate and death rate. If the global community decides to do what I believe must be done and lowers the human population, I hope no one advocates for increasing the death rate! The only humane, ethical approach is to lower the birth rate.

It is often argued that we can't do that because people are genetically driven to over-reproduce (as are all species). While this may be true in a wild population, there is evidence that relatively well-off humans choose to have fewer children. So, if we can raise the standard of living of everybody else, the problem should take care of itself.

Raising that standard of living is, however, not likely to happen. We already don't have enough resources to keep our teeming hordes healthy and fed, much less to provide them the opportunity to take a three-week vacation each summer. We need a different approach.

There are a variety of behaviors that we consider anti-social that are likely to have genetic underpinnings. For example, a gene that encouraged stealing among our wild ancestors would have been favored by natural selection, and I consider it quite likely that we all carry such a gene today. Nevertheless, our societal mores have so roundly, and correctly, condemned stealing that very few people regularly engage in this sort of behavior. I believe that if we adopt a new reproductive ethos, we may well help slow the growth of the human population and eventually reverse its direction. We need to adopt the belief that it is unethical for a couple to have more than two children, and it is virtuous to have fewer. And considering the population crunch we face, I have already embraced this ethos as a true and good one.

Conclusion

"Think globally, act locally." I'm not sure who first said that, but it's a sentiment that's been around for some time, and we still see it quoted on bumper stickers. I think it's a fine sentiment, but it's time to stop limiting our actions to local band-aids. I prefer to say "Think globally and vote!" And press the candidates to state their positions on environmental issues explicitly before you decide for whom you'll cast your vote.

Most of all though, we need a new attitude, a new ethos and a new embracing of our own wildness. As individuals we can let our lawns grow wild, build hedgerows instead of fences, and limit our reproductive output. As communities we need to start putting buildings and streets underground while letting run-off pool in streams and wetlands on the surface. We need to create wilderness corridors connecting our island refuges and limit the destruction landowners can visit on their private properties. In other words, we need to reserve, restore and reconcile.

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Bert Pooth
was born in Heidelberg and grew up in New York. He worked as a carpenter before obtaining an A.S. from Onondaga Community College, a B.S. from SUNY CESF and a Ph.D. from the University of Miami. His graduate work dealt with the songs of northern mockingbirds, an aspect of behavioral ecology. He loves birding, camping, canoeing and hiking, reading, art (and other) museums, diving, and cheering for Ducks, Ôcanes and Orangemen. He lives on a small farm with his wife, two llamas, two goats and three cats.

Leslie Rubinstein *has been a part-time instructor at Lane Community College since 1997. She teaches in the Adult Basic and Secondary Education Department, teaching GED preparation to students as well as adults who have high school diplomas but need academic support in order to pass Lane's college placement tests.*

Unintended Tulips

Leslie Rubinstein

Unintended tulips rose
out of her yard
beaming color
at the quiet grasses
shouting liberation
from the pathway stones

Last fall's load
of bark mulch spawned
a small forest of morels
in this suburban yard
eyed with surprise
eaten with garlic

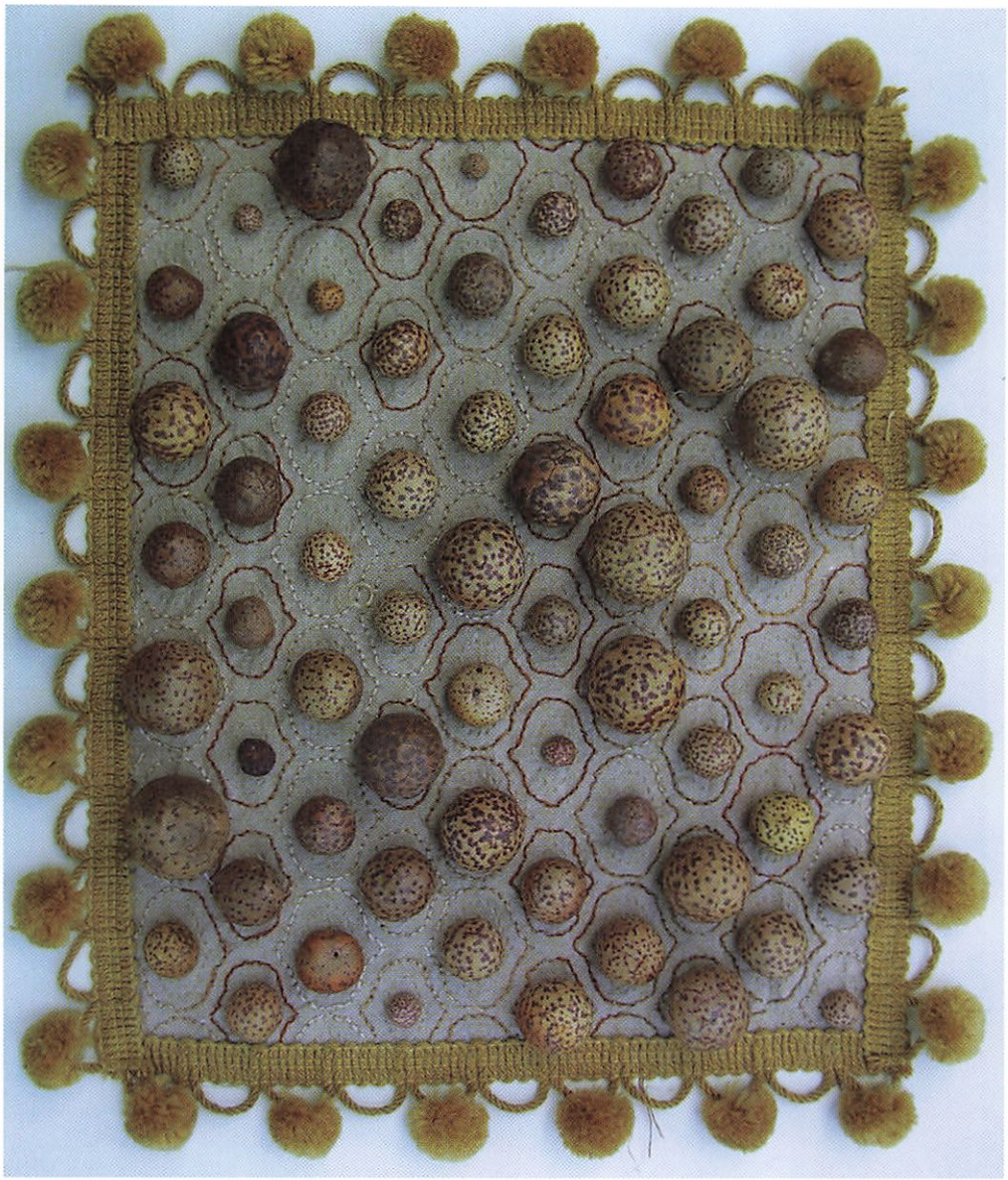
A state of grace exists
at every birth
even that of a child
born dead
what gift it is
I cannot say

Perhaps you know

The unexpected
forces us
to see
the forces
hidden
within

In this moment
All is present
Stay awhile
and then
you can always
Come back

Habitat: Overview



Habitat: Close Up

Deb Posen *is an instructor in the Department of Business at Lane Community College. "Habitat" measures 11 by 13 inches. Materials include unbleached paper towel, cotton thread, oak galls, and pom-pom trim.*

Dragonfly Dreamzzz

Daniel Dancer & attendees of the Oregon Bioneers Conference

This temporal human art project was built and disassembled in Lane Community College's Bristow Square on October 14, 2005.
Photo: Daniel Dancer and www.artforthesky.com

A Botanical Field Trip to the Lane County Farmers' Market to Make Connections with People, Place & Sustainability

Gail A. Baker

People, Place & Sustainability: "Apples from Dean"

The concept of sustainability has many different dimensions and interpretations, but I think most would agree that it includes human activities which utilize local resources that are aligned with the local environmental conditions and limitations. The inspiration for including a visit to the Lane County Farmers' Market as an activity in my botany courses seems obvious in retrospect, but it wasn't an immediate connection. The activity was a synthesis that developed as a result of watching my students as they discovered what a plant really was, doing research about how to engage students in the study of biology, including the course objective of learning how to be connected with our bioregion and supporting local endeavors, and my weekly forays to our Market that have given me a deep sense of how agricultural produce availability follows the seasonal progression of plant development in natural ecosystems.

The models for my watercolor were apples purchased from Dean Mordhorst of Mordhorst's Coburg Hillview Farm. I have been buying apples from Dean and his wife for at least twenty years; he is in his mid-eighties and a very active and vital person. His apple booth appears at the Farmers' Market for only a few months each fall; it highlights the seasonality of these fabulous fruits and the important connection of renewing my yearly acquaintance with Dean and his family.

Is fresh apple and rhubarb pie or a lettuce and tomato sandwich really a seasonal possibility in Oregon?

In the last decade, using edible plants to engage students in botanical study has become a standard activity called "Supermarket Botany" (Smith and Avery 1999, Levetin & McMahon 2006, Graham, Graham & Wilcox 2006, Saupe 2005, Austin et al. 2005, Keller and Harrison 2005, Paye 2000). In Supermarket Botany, students visit local supermarkets to examine the produce from a botanical perspective as well as from a food or product perspective. Students determine which part of the plant is eaten or used by applying their knowledge of diagnostic characteristics that distinguish a leaf from a stem from a root—not just "because it looks like a leaf." The students improve their observation skills and gain an increased awareness of plant parts that have major economic importance.

Moving this activity from the supermarket to the farmers' market opens up even more opportunities for students to explore how their lives are related to plants and their bioregion. Supermarket botany hones skills such as the ability to identify what part of the plant is being consumed (many misconceptions about what is actually being eaten surface during this activity), to scientifically classify a plant and to describe how different plants are related to each other. However, by taking my botany classes from Lane Community College in Eugene, Oregon on a field trip to our local farmers' market, the focus becomes place-based, and additional biological concepts and skills can be included such as being able to match the plant life cycle with the region's seasonal climate sequence. This gives students a chance to specifically determine the importance of the timing of flowering, pollination and fruit maturation and the influence of climatic events on plant growth and development.

The Lane County Farmers' Market is a vibrant place full of color, texture, smells and activity that has been in continuous operation since 1979. An earlier farmers' market was established in 1915 but disappeared with the rise of supermarkets in the 1950s. The current market has a well-established group of vendors that sell their produce from

April through November. Our class visits the Market in late May near the end of the course, when students have gained a good foundation of knowledge about our native plants and their ecology, and at a point where the farmer's market has a full offering of late spring crops. This sets the context for students to observe the seasonal availability of our food crops and consider the economic and ecological costs and benefits of where and when our food is grown.

At the Market, students are given approximately one hour of the two-hour excursion to visit five vendor booths selling produce, live plant starts, and cut flowers. At each booth students complete a Farmer's Market Data Sheet while observing the produce for sale. The data sheet is designed around produce listed for sale at the Market, and is a modification of the standard Supermarket Botany data sheet. Data taken includes vendor name (for example, Hayhurst Valley Organic Farm), their location (Yoncalla, Oregon) and the major plants offered on that day. On the data sheet, edible produce is organized by plant family and requires students to identify and note specific plant parts and how the part functions on the plant (for example, a potato is a modified stem that functions as a storage organ). To do this, students have to be very observant and use their knowledge of plant anatomy to distinguish vein patterns, the presence or absence of nodes or buds and know the botanical definition of a fruit. Students also speak with vendors about growing conditions required for their crops but are to be mindful not to interfere with sales.

After their visit to vendors the class gathers at tables and benches adjacent to the Market to organize and analyze notes and data while eating some of the local produce. At this time, students are given the Lane County Farmer's Market Seasonal Crop Calendar that lists all the produce sold throughout the year and the month(s) that each is available. Students draw a vertical highlighter line through the month of our visit (May) and horizontal highlighter lines for each product seen, especially recurring types of produce observed at each booth (species and plant part), and put an "f" by each product that is a fruit. At this point, the Data Sheet and the Seasonal Crop Calendar can be used together to answer the following questions:

1. What plants and what edible parts (important distinction) did you observe to be most abundant on this date?
2. What month(s) have the highest abundance of fruits available according to your observations and the Farmers' Market Seasonal Crop Calendar?
3. What is the relationship between plant part abundance, leaves, stems, roots and specifically fruit, and the plant life cycle?
4. Based on conversations with vendors, what growing season requirements are related to product availability? Relate this information to your knowledge of plant growth and development sequence.

These questions guide students through their notes and data and initiate their thinking and discussion about relationships between seasonality and the complete sequence of events in a plant life cycle as it applies to agriculture as well as wild plants. Data showing the overlaps, or lack thereof, in abundance of type of plants and plant parts for sale is of particular importance in answering this last question.

5. Are culinary combinations of certain types of fresh vegetables really a possibility? For example, can you bring home lettuce and tomatoes the same day to make a sandwich or buy just-picked apples and fresh rhubarb to make a pie?

The data are now available to answer this question. Students compare the highlighter lines on their data sheets. The Seasonal Crop Calendar shows lettuce (salad greens), a leaf crop, being abundant early in the growing season from April and continuing through October, while tomatoes, a fruit, aren't available until July and continue through October. During our May visit we could add lettuce to our sandwich but not tomatoes. In Eugene, that combination is possible with local produce only from July through October. Other culinary combinations are not possible or have only marginal overlap at best. For example, if you have a fancy for fresh apple and rhubarb pie or crumble, you might be out of luck. Although apples, a fruit, are listed as available at our farmers' market from July through November, the high season for good apples seems to be September and October. Rhubarb, the stalk of a leaf, is available only between April and July. This may seem to limit our food options. No so; the diversity of culinary options and combinations of seasonal produce have been championed by people like Alice Waters (2003, 2004, McManus 2004) and Mollie Katzen (1977), practiced by many of our local restaurants, and are good models of how our food options may actually be broadened.

Ecological and economic awareness: The costs and benefits of buying and eating locally.

As background to the economic side of agriculture, the students read articles about the benefits of buying and eating locally produced foods by Nabhan (2002) and Schildgen (2004). When we buy our food in large chain supermarkets, we have the luxury of not only making a lettuce and tomato sandwich year-round but also making a fruit salad using mangos and bananas, fruits that don't grow even close to our bioregion. How? Why? Students now think about, discuss and research where their food comes from, the resources used to get it to Eugene and how farmers often modify growing seasons using greenhouses, irrigation, fertilizers and various forms of natural genetic modification or bioengineering to develop plant varieties that tolerate cold or drought or have a longer shelf life or growing season.

The farmers' market provides a venue for reviewing course topics, gives students an opportunity to apply their knowledge to a new situation and to develop their "sense of place." Not only do students have a direct experience learning about the biological relationship between their native habitats, the climate they ex-

perience and its influence on plant growth, but they also experience a human connection with local farmers.

Comparisons of the differences in availability of produce throughout the year leave a strong impression on students. To expand this activity and further establish connections to place, students can embark on comparisons of place by investigating geographic produce availability at farmers' markets across the continent. The key piece of data that is most helpful for this endeavor is the Seasonal Crop Calendar for each farmers' market. Not all farmers' markets provide them, but some currently online are from Eugene, Oregon; Abingdon, Virginia and Saco, Maine. Popular books such as *Botany of Desire* (Pollen 2001), *Fast Food Nation* (Schlosser 2002) and *The Forgotten Pollinators* (Buchmann and Nabhan 1996) complement and integrate basic botanical knowledge, a connection to time and place and the potential effects of small, local agricultural operations and agri-business on human health and well-being, local economies and regional ecology.

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Resources

Lane County Farmers' Market website at http://www.lanecountyfarmersmarket.com/

Table 1: SUPERMARKET BOTANY

NAME: _____ DATE: _____
LOCATION(S) VISITED: _____
*Examine edible plants from the produce aisle or at the Farmers Market and use your knowledge of plant anatomy to determine plant organ(s). ** How do you know? Answer this question using diagnostic features and relationship to other plant parts. Complete common & scientific names when not given in the table.*

Name of Vegetable	Scientific Name	Anatomy of Edible Part	**How Do You Know?
Carrot Family	**Apiaceae**		
Carrot	***Daucus carota***		
Celery	***Apium graveolens***		
Sunflower Family	**Asteraceae**		
Artichoke	*Cynara scolymus*		
Belgian endive	*Cichorium intybus*		
Lettuce	*Lactuca sativa*		
Mustard Family	**Brassicaceae**		
Brussels Sprout	*Brassica oleracea*		
Cauliflower	*Brassica oleracea*		
Cabbage	*Brassica oleracea*		
Kale	*Brassica oleracea*		
Kohlrabi	*Brassica oleracea*		
Radish	*Raphanus sativus*		
Turnip	*Brassica rapa*		
Spinach Family	**Chenopodiaceae**		
Swiss Chard	***Beta vulgaris***		
Beet	***Beta vulgaris***		
Spinach	*Spinacea oleracea*		

Modified from Lab Manual for Applied Botany. Levetin, MacMahon, and Reinsvold (2002)

Gail A. Baker *is a biology instructor who loves to take students out in the field as much as possible. She has concentrated on introducing students to the variety of natural ecosystems in our area, from the coast to the Cascade crest. Recently she has broadened her field sites to include the Lane County Farmers' Market and is thinking about adding local native plant nurseries, restoration projects and small farms to her field trip options. During the summer of 2003, she enrolled in a watercolor painting course at Lane Community College with her two colleagues, Stacey Kiser and Sarah Ulerick. Farmers' market produce became her subjects of choice for her painting endeavors, and she has been in her "fruit phase" for several years.*

Then I say the earth belongs to each…generation during its course, fully and in its own right. The second generation receives it clear of the debts and encumbrances, the third of the second, and so on. For if the first could charge it with a debt, then the earth would belong to the dead and not to the living generation. Then, no generation can contract debts greater than may be paid during the course of its own existence.

–Thomas Jefferson, 1789

Nexus: A Conversation on the Rights of Nature

Margaret Robertson

Nexus: (From Latin *nectere*, to bind.)
1. Connection, link. 2. Connected group or series.
3. Center, focus.

Abstract

One of the subjects of debate in environmental ethics is resolution of the conflict between the rights of individuals and the rights of species or ecosystems. An approach that is gaining in currency is the realization that all being is made of connections, a sort of three-dimensional net, in which individual organisms are but concentrations in the net. This is a view supported by modern physics. In the economy of nature, everything has a fit; each thing (or node of concentration) is joined to very many other things. The modern problem is that post-industrial humans don't have that fit; there are too many of us, and normal connections are missing: picture loose ends of rope sticking out of a net.

Nature is a unity. Intrinsic value and therefore rights, a human construct, issue from that. This can't be proven with logic. There are, however, other ways of knowing. Epistemology includes intuition as an authentic path; examples of intuitive, non-rational ways of knowing are found in pre-literate animists, in the Transcendentalists, in the writings of Albert Schweitzer, and in the approach of the deep ecologists, among others. Supporters of an organicist land ethic see violations of the rights of nature as tears in the net. These are intuited to be "wrong" because they are holes in the unity.

Are humans predisposed to see nature as having rights? Some thinkers believe they are. One school of thought holds that ethics are an evolutionary strategy for organizing human society. And some organicists hold that ethics are Gaia's developing way of defending itself.

The intuition that land has moral standing is part of a large body of knowledge, but known mainly to environmental ethicists and others in a relatively small group of students and scholars. It may be critical to the survival of life on the planet, however, that these ideas be widely understood beyond this circle of specialists and activists. So what ought we to do?

Individuals versus Ecosystems

Is each organism an island? Or are we all connected somehow? Some ethicists hold that while boundaries do exist, individuals are nested within communities, and that

changes to communities affect individuals. Wildlife biologist Aldo Leopold ([1949] 1991) wrote, "All ethics rest upon a single premise: that the individual is a member of a community of interdependent parts." Leopold saw individuals as discrete parts of communities, and did not focus on protecting individual rights; he was concerned with the rights of systems. Environmental ethics philosopher and Leopold scholar J. Baird Callicott (1989) spoke of our existing within "nested and overlapping communities." Philosopher William Aiken said that "to promote the good of the whole is simultaneously to promote the good of each part," noting that while in the short run the interests of individuals and species often clash, in the long run the interest of species may coincide with the interest of the larger community (Regan 1984). In some cases, however, the good of the individual and the greatest good for the greatest number are simply in conflict; as philosopher Joseph Des Jardins (2000) points out, these situations raise questions for which there are no easy answers.

Other thinkers have suggested that distinctions between individuals and communities are arbitrary. As long ago as the 1890s biologist Frederic Clements, an early proponent of the succession model, described climax vegetation as a "complex organism," and said that many living things functioning together resembled a single being, with individuals mutually dependent in a way analogous to organs in the body (Nash 1988). Eighty years later, Lynn Margulis' and James Lovelock's Gaia hypothesis held that individual beings were parts of indivisible wholes, analogous to cells and organs in the body. The Gaia hypothesis, with its foundations in biochemistry and microbiology, said that the planet created and presently maintains a self-regulating environment which not only sustains the life of its components but is itself alive (Lovelock 1987).

Philosopher Paul Shepard (2002) wrote that both cases are true: the self is separate, surrounded by an epidermal boundary, and at the same time the self is a concentration of energy, a center of organization, whose epidermis is "not a shell so much as a delicate interpenetration." He argued, "Both views are real and their reciprocity significant. We need them both." Philosopher Holmes Rolston III, awarded the 2003 Templeton Prize for his work, wrote a beautiful analysis of the interrelatedness of individuality and community, with the two levels equally essential and meshed within the larger system. The system is a marvelous, complex, multidimensional thing. It creates life, selects for adaptive fit, constructs increasingly richer life in quantity and quality, supports myriads of species, and escalates individuality, autonomy, even subjectivity, all within the limits of a decentralized community (Rolston 1988).

Energy and the Three-Dimensional Net

Many philosophers assert that nature is a unity. One might picture a three-dimensional net, in which the ropes represent energy connections and knots in those ropes represent organisms. Shepard (2002) had something like this in mind when he said that the landscape is "a creative, harmonious being where relationships of things are as real

as the things." The field of deep ecology, which holds that "there are no boundaries and everything is interrelated," operates from this schema. Callicott (1989) said that individual organisms "are less discrete objects than modes of a continuous, albeit differentiated, whole," building on a memorable image from Aldo Leopold, who called the land "a fountain of energy flowing through a circuit of soils, plants, and animals" (Leopold [1945] 1987).

Rolston spoke of loose and tight couplings. He said, "Admiring concentrated unity and stumbling over environmental looseness is like valuing mountains and despising valleys." (1988) Humans succumb to errors of scale and thus have a tendency to miss the connections; Des Jardins (2000) observed that our belief that the earth is dead matter arises in part from our inability to recognize the "enormously slow, intricate, and interrelated functions" of its life processes.

Organicism is essentially the notion that the earth is a living being. This worldview was widespread among pre-literate nonwestern cultures. The tradition of organicism or animism in the Western world extends across millennia from the pre-Socratic Greeks through Spinoza, the Transcendentalists, and the process philosophers, to the deep ecology movement of the 20th century. Baruch Spinoza, a 17th century Dutch polymath whose greatest work, the *Ethics*, is the foundation of deep ecology, saw nature as a vast hierarchy of interrelated systems (Scruton 1999). American Henry David Thoreau, like the Russian Peter Ouspensky, assumed an "all-pervading force that made nature a vast, living interconnected being" (Nash 1988). Alfred North Whitehead (1967) believed that the universe is not composed of inert matter but of a continuous series of events or interactions; in other words, a process.

Eastern philosophies recognize the universal fabric of energy. The fundamental teaching of Daoism, for example, is Oneness (*Dao*). According to Liu Ming, founder of Orthodox Daoism of America, "the uniqueness of each phenomenon, from a speck of dust to the entire universe, is based on a temporary magnetic charge which we describe as *qi*. This spins tightly into a pattern, from there grows into substance and form, only to unravel and return to the undifferentiated source of the *Dao*." By learning to visualize the cosmic landscape of the body, adepts learned to see that their biological nature "was concretely embedded in and inextricably folded into the cosmic complex" (Girardot 2001).

A modern development, quite in harmony with Eastern understanding, unites principles of physics and nature. Whitehead (1967) used the findings that all matter is essentially energy to develop his understanding of the universe as process. Physicists writing for a lay audience, including Fritjof Capra and Paul Davies, further advanced the idea that "the identity of the individual was indistinguishable from the identity of the whole, interrelated cosmos" (Capra 1996). According to Rolston (1988), "Causal links are not less significant because they are probabilistic (as one learns in physics), though they may no longer be determinate."

If nature is a complex net of energy connections which concentrate in places to form organisms, the distinction between individual and community is merely a question of scale. Move beyond the local scale, and it's all the same flow. Thus the question of whether to accord rights to individuals or to systems might sometimes be set aside. We can develop an ethic to encompass multiple scales if we follow Schweitzer's principle, "reverence for life" (Cousins 1985), as authentically and as broadly as we can.

Ways of Knowing

Spinoza wrote that an understanding of the unity of all being leads to non-rational ways of knowing: "What we experience as the mental and the physical have no separate metaphysical reality, but rather are aspects or attributes of this one Substance" (Scruton 1999). Aristotle said that "it shows a lack of education to try to prove everything." The 19th century Transcendentalists believed that by "using intuition, rather than reason and science, humans could *transcend* physical appearances and perceive 'the currents of the Universal Being' binding the world together" (Nash 1988).

One of the gifts of the deep ecology movement is the understanding that "the ultimate norms of deep ecology cannot be fully grasped intellectually but are ultimately experiential." Not only are multiple ways of knowing possible, they are required if we are to develop the minimum understanding that will be critical to survival of the planet. As philosopher Paul Wienpahl said, "true understanding occurs only at the intuitive mystical level" (Drengson 1995).

And intuitive ways of knowing are necessary to the development of ethics. We value the land because what we learn about it rationally then leads us to feelings of respect and love for it. Conversely, our wordless worldview must underlie our rational investigations. Paul Shepard (2002) noted that an "ecological instinct" causes us to probe deeper and more comprehensively: "What was intuitively apparent last year is a find of this year's inductive analysis." Des Jardins (2000) explained, "Most philosophers would likely argue that metaphysics and epistemology precede science, not the other way around. Scientific claims and observations presuppose a set of assumptions about what is real and what can be known."

The Rights of Nature

Much discussion has centered around use of the terms "rights" and "standing." The legal concept of "natural rights" originated in Hellenic Greece and is the foundation of English common law and American constitutional law; in Western culture it is typically applied only to humans.

Christopher Stone (1973), a law professor at the University of Southern California, wrote a compelling legal argument for the rights of nature in a case argued before the U.S. Supreme Court, *Sierra Club v. Morton*, reprinted as a monograph, *Should Trees Have Standing?* Stone's position was eloquently supported by the minority opinion authored

by Justice William O. Douglas, who wrote, "Contemporary public concern for protecting nature's ecological equilibrium should lead to the conferral of standing upon environmental objects to sue for their own preservation. . . These environmental issues should be tendered by the inanimate object itself" (Sierra Club v. Morton 1972). Harvard law professor Steven Wise (1999) wrote a detailed discussion of natural rights as they apply to the rights of animals in *Rattling the Cage;* he continues to write arguments in his practice of animal rights law. Gary Snyder and David Orr continue to argue that a fundamental change in Western political structure, including its laws, is imperative if we are to save our planet in crisis.

The concept of individual rights is a Western development. Other philosophies, including Eastern religion and American Indian lifeways, see nature as more unified. In the East it is felt that a divine spirit (the *Dao* in Daoism, *kami* in Shintoism, and *dharma* in Buddhism) permeates and unites all things. The idea of owning land was unthinkable to American Indians; those who grasped this bizarre concept considered it morally wrong (Nash 1988).

Most ethicists agree that moral right and wrong are human constructs not found in nature. However, environmental ethicists can say that nature has "value." Philosophers are careful to avoid what Des Jardins (2000) calls the "naturalistic fallacy," the simplistic conclusion that something is good or right simply because it is "natural." Rolston (Light and Rolston 2003) held that the planet had value because it possessed "the traditional requirements for ethical considerability: consciousness, ability to feel pain, and interest or capacity for what might be termed happiness." Rolston cautioned against making category mistakes: for example, finding such characteristics as emotions or sense of self missing from ecosystems and then judging that ecosystems do not count morally. He wrote, "To look at one level for what is appropriate at another faults *communities* as though they ought to be organismic *individuals*."

Some mainstream religious thinkers have argued that life has "value" which implicitly leads to its having rights. The Faith-Man-Nature Group, formed in 1964 within the mainstream National Council of Churches, urged humans to go beyond utilitarianism and said, "Things have a value and integrity in themselves" because they are part of the process that is "ongoing reality." Theologian John Cobb argued that humans should respect all matter, from subatomic particles to human beings; he wrote, "If there is intrinsic value anywhere, there is intrinsic value everywhere" (Nash 1988).

Scholars often make a distinction between two kinds of values: intrinsic value (leading to rights) and instrumental value (a measure of usefulness). Rolston (1988) argued that these are different aspects of the same reality: "Intrinsic values are meshed in a network of instrumental value." He argued for a third kind of value: systemic value. Subjects live within a system and have a right to flourish within the system. But they don't count so much that they can degrade or shut down the system. The intrinsic value of one's self is contained within the system as a subset.

Albert Schweitzer recognized the essential value of all being, and verbalized an ethic embodying that value. He said that an ethical person "shatters no ice crystal that sparkles in the sun, tears no leaf from its tree, breaks off no flower, and is careful not to crush any insect as he walks" (Cousins 1985). Ecotheologian Allan Brockway followed, writing that fundamentally altering not just animals but also rocks, soil, and water was like murder, a transgression of divine authority (Nash 1988).

The deep ecology movement has continued the discussion of the rights of nature. Arne Naess said that every form of life has "the equal right to live and blossom" (Devall and Sessions 1985). Henry Wallace, U.S. Secretary of Agriculture in 1936, remarked that his generation needed a "Declaration of Interdependence" (Nash 1988); some fifty years later, in 1992, such a document was drafted for the United Nations Earth Summit in Rio de Janeiro (Suzuki 2005). If we were to add such thought to the U.S. Constitution, the deep ecologists would repeat that the rights of all beings to life, liberty, and the pursuit of happiness mean an intrinsic or natural right to life (not to be harmed unnecessarily), liberty (freedom from excessive human interference), and the pursuit of happiness (the opportunity to pursue their own definition of happiness, to blossom or flourish in their own way). "Beings" are felt by many deep ecologists to include not just animals but all animate and inanimate life.

Evolutionary Ethics

Hume argued that sympathy is a fundamental human characteristic, and that ethics arise from this feeling for others. Darwin believed that this characteristic evolved, and was continuing to evolve, through natural selection. Leopold agreed. He noted that every population has mechanisms to keep its growth in check. Humans had no significant predators to act as controls, but what they did have was ethics; Leopold believed that a land ethic could act as a restraint on the human capacity to modify the environment to excess (Leopold [1949] 1991). Des Jardins (2000) explained that "natural selection has endowed human beings with an affective moral response to perceived bonds of kinship and community membership and identity." Humans had "moral sentiments and social instincts" which included first the family group, then the tribe or community; through human evolution, the perception of community extent was increasing. Leopold ([1949] 1991) speculated that "ethics are possibly a kind of community instinct in the making" or "a kind of advanced social instinct in the making."

Rolston (1988) observed that extinction is stochasticity on a larger temporal and spatial scale, and always results in increased diversity. As numbers of species increase, so does the quality of individual lives. Sentience appears and with it, increased freedom. "So, while the system appears to behave randomly at close scales, it behaves rationally and tends in a particular direction at long-range scales." That direction would seem to be not only greater consciousness but greater ethical awareness as well.

Callicott (1989) discussed methods of organizing social systems in which group members sacrifice some autonomy in return for an increased advantage gained through membership in the community. Social insects such as termites integrate and orchestrate individual members of their communities through insect-style social constraints on their activities. Humans use a different means: moral limitations, "the dues paid in order to be part of a society." Callicott reasoned that "ethical and moral-like limitations are not the only systems of social limitation species have evolved. Ethics is only one such modality among many."

Roderick Nash (1988), discussing the Gaia hypothesis, said, "since humans were the only morally conscious members of this community, the brain cells of Gaia, they had the unique capability of restraining themselves in a manner consistent with continuing the welfare of the earth-being to which they belonged." Following Leopold's theory, Roszak (2001) saw the emancipation of slaves and social reform as stages in human moral evolution, pointing to the realization "that nature must also have its natural rights." E. O. Wilson (1984) said in his book, *Biophilia,* that "'reverence for life' will one day be understood in terms of evolutionary biology and evolutionary psychology." Environmental educator Michael J. Cohen said that environmental ethics was an expression of "the planet trying to protect itself" (Nash 1988).

What Can We Do?

Remembering that "*ought* implies *can*," the question "what *ought* we to do" is also, "what *can* we do?" Given the magnitude of current extinction and looming collapse, it seems likely that whatever we do, it will not be enough to salvage the human species and thousands of others from oblivion. Nevertheless, it is our path of self-realization as a human organism to do, with joy, everything we can. Devall and Sessions sum up this ambiguity in the title of the first chapter in their book, *Deep Ecology:* "Nothing can be done, everything is possible." We may take action on multiple scales.

First, we each should "get our own house in order." We should examine how we now live as individuals. We can practice voluntary simplicity, or at least curb our consumption. Ecotheologian Santmire believed that a reduced level of affluence, living at a level determined by "justifiable human needs," would be required, what Orr calls a "sufficiency revolution" (Nash 1988). We can make choices about the foods we eat, buying locally-produced foods in season rather than luxury items trucked from elsewhere. Aiken pointed out that "for affluent people, vegetarianism seems inevitable."

We can practice reverence for life. This may include choosing cruelty-free foods, allowing nature to flourish as it will in our yards, allowing the beetle to clatter across our floor unimpeded, and respecting even the right of an ice crystal to continue sparkling in the sun. Reverence for life may also mean clearing our lives of "intellectual junk" and taking the time and care to develop an intimate relationship with the place where we live.

The planetary crisis also calls for public action, available in a bewildering number of expressions. Leopold proposed "biotic farming," or sustainable agriculture, a practice which is beginning to catch hold in some Western countries. Aiken, in his essay, "Ethical Issues in Agriculture," suggested that a revolution in agricultural practices is needed, eliminating luxury crops and fine-tuning agricultural practices to local conditions and using nature as the guidebook (Regan 1984).

We can do what we can, by example and through leadership, to foster the end of dualism. One practical approach is "bioregionalism" or what Gary Snyder calls "reinhabitation," the cultivation of an intimate knowledge of a particular place leading to love for that place. Orr (1994) noted that "the efforts to create utopias of either right or left have been monumental failures...Part of our difficulty is that we think of utopia on too grand a scale...What ails us, however, is closer to home, and I suggest we bring it there."

Shepard (2002) observed that "the real cultural deficiency is the absence of a true *cultus* with its significant ceremony, relevant mythical cosmos, and artifacts." Scholars such as Dolores LaChapelle (1988) argue for a return to land-based ritual. Such rituals would have tremendous value in shaping human ethical response and maintaining intimate contact with place. However, the explosion of cultural and religious diversity may make such ritual problematic on all but the smallest scales.

Gary Snyder (1990) wrote that we need "far less population and much more wilderness," which are among the principles of deep ecology; one could choose to support an organization fighting for one of those. Snyder suggested civil disobedience and outspoken criticism, "supporting any cultural and economic revolution that moves clearly toward a truly free world." One cannot do everything; each of us must choose one or a few areas of focus and give our energy there.

One avenue is design. "Ecorevelatory" design can help connect people with land and process (Mozingo 1997). So can designs that foster positive feelings toward nature, by whatever means. Designing with regional vocabularies can connect people with their actual places, but it is important that installations hold themselves to high aesthetic standards. Mozingo argued that ecological design must be high-quality art as well; this is how we can touch the heart. Paul Taylor argued that as the only moral agent in the biosphere, humans were ethically obligated to restrain their environmental impact; this means that as designers we have an obligation to fight for the location and construction of "buildings, highways, airports, and harbors with the good of other species in mind" (Nash 1988). In other words, designers have a moral duty to their ultimate client, the land.

Another important avenue is education. It is critical that we foster ecologically-literate citizens, and we have an obligation to be educated ourselves. As Shrader-Frechette noted (1987), "Regulation is not a successful way of avoiding the tragedy of the commons." Universal environmental education is critical. Rolston (1986) argued that the

universities of the world are a central part of the problem, and that they are perhaps in the best position to be part of the solution, pointing out that "the persons during whose lifetime the fate of the Earth will largely be decided are the generation of students in our universities today." David Orr (1992) urged that a thorough ecological literacy must be the goal of any education, noting that "a genuine liberal arts education will foster a sense of connectedness, implicatedness, ecological citizenship, and will provide competence to act on such knowledge."

Orr (1994) also recommended that students become immersed in "the mysteries of specific places," Snyder's "reinhabitation." Callicott (1989) observed that in American Indian cultures humans were part of a community of all nature, in which "reciprocal responsibilities and mutual obligations were taken for granted and assumed without question."

But just an intuitive response to members of one's community does not insure that no harm will be done. Love of life and intimacy with the land alone are not enough. American Indians had a deep, intimate relationship with the land, and yet shortly after humans first arrived in North America a mass extinction of megafauna took place (Flannery 2001). And while they have much to teach us about the viability of communal societies based on mutual aid between people, this care often did not extend outside a fairly local group, and human slavery was a common practice among most North American tribes, as it was among the Hellenic Greeks and myriad other cultures worldwide.

Philosopher Joan Tronto proposed that an "ethic of care" must include four components: attentiveness, responsibility, competence and responsiveness (Nair 2003). To be effective, education should convey responsibility, that is, develop an *environmental ethic*; it should develop both attentiveness and responsiveness, that is, develop an intimate relationship with place, or *reinhabitation*; and these qualities should be informed and underlain by competence—solid education and deep knowledge. The importance of education was discussed by Spinoza in the 17th century: "Rational scientific knowledge of the world can raise a human to a higher level of knowing and being, where one can at least begin the process of psychic rearrangement which is a prelude to transcending one's narrowly egoistic subjectivity" (Scruton 1999).

A thoughtful person should feel that it is no longer morally right simply to think and not act, to sink complacently into life-as-usual within the dominant worldview, to remain, as Devall and Sessions said, "philosophical and ethical cripples" (Devall and Sessions 1985). An anonymous writer said, "I am only one. I cannot do much. But because I cannot do much, I shall not hesitate to do that which I can do." As Naess and Sessions (Devall and Sessions 1985) said so pointedly of the basic principles of deep ecology, "Those who subscribe to the foregoing points have an obligation directly or indirectly to try to implement the necessary changes." They also remind us, "One must have enough self-confidence to follow one's intuition."

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Margaret Robertson *teaches drafting courses at Lane Community College, where she is also chair of the Facilities Council and active in several groups promoting sustainability on campus. She holds a bachelor of landscape architecture from the University of Oregon and is a post-professional student in the master of landscape architecture program at the University of Oregon.*

Sustainability at Lane

Service Learning courses offered at Lane are solidly connected to sustainable practices in education. Global Health, taught by Susie Cousar, applies community-based learning through service at local nonprofit agencies such as HIV Alliance, White Bird Clinic, and Mt. Pisgah Arboretum. In WR 115: Food for Thought, a learning community course taught by Jennifer von Ammon, culinary students write essays about sustainable cuisine and complete community-based learning projects with Food for Lane County and Grassroots Gardens. An upcoming service learning course on water and society will explore issues related to water cycles, sources, conservation, regulations, history and the future outlook.

Carpenter Ants

Ken Zimmerman

This old house has already stood longer than it should:
second-hand at its start, built from old-growth fir felled
and milled for a barn in Goshen, then the barn torn down,
the wood salvaged and dragged here, re-cut
and hammered together again. And though I fend off
the rain with black tar and plastic, though
I tack back shifted roof shakes and replace
the rotted porch boards, I know it must someday fall.
Every night I see carpenter ants on the kitchen floor.
They come craving sweetness and salt, carrying off
the crumbs I've left to sweep up in the morning.
They take only what they need. That's not why
I kill them. But they tunnel into the floor,
boring through joists and beams. They work on wood
like rust does on metal. I can hear the steady grinding
all night long. There must be something like them
in our blood. Past forty the body starts to sag, timbers
shift and separate, earth piles up around the foundation.
Though I crush every one I see, there are more.
There is no going backward, no winning this war.
Tiny wrens nest in one hollowed out wall. Their chicks
chitter and beg, fluttering half-formed wings.
My cat caught their mother. I woke up to feathers
scattered across the floor. The male bird brings worms
though the knothole entry, working hard all day.
He scolds from a branch above the compost pile,
where worms are thickest, the cat skulking nearby.
Carpenter ants burrow into wood like worms
turning the soil. Everywhere I turn decay breeds abundance; life
thrives on rottenness and death! I'm telling you the truth.
This old house will fall, be bulldozed into a pile,
burned, plowed under, the ashes feeding new trees.
Life loves death. I must say it again. Life loves death!
For my old age, though, I will build from stone.

Ken Zimmerman *teaches literature and writing in the English department at Lane Community College. His poetry has appeared in a number of magazines including* Antioch Review, Tar River Poetry, Puerto del Sol, *and* Seattle Review. *He was also a member of Ken Kesey's novel writing class at the University of Oregon which published the novel* Caverns *(Penguin Books, 1990) under the collective pseudonym O. U. Levon.*

Going Green: Teaching Sustainability in the Chemistry Classroom

John E. Thompson

Introduction

Chemistry courses (and science courses in general) are known for their focus on factual knowledge about the physical universe. Integrating sustainability into the curriculum brings a broad array of topics and tools to the classroom. But does bringing sustainability into the classroom reduce the chemistry content being taught in an already full curriculum? Is the chemistry classroom an appropriate place to discuss sustainability issues? To better address these questions one needs to consider the impact chemistry has on our lives.

The Need for Green Chemistry

Chemistry and chemistry-related industries play a significant role in the global economy and in our individual lives. Every major economic sector relies in some manner on chemical knowledge and/or products. These sectors include the petrochemical industries, pharmaceuticals, agriculture (traditional and organic), textiles and many others. We individually depend on chemical innovations to provide for our basic needs as well as to provide the new materials that enhance our quality of life. From the bath, beauty and health products we use to the foods we eat at each meal, from the high-tech tools that we use to improve our efficiency to the materials and fabrics used for outdoor sports and leisure, chemical products significantly impact our daily lives.

The importance of chemistry to our everyday lives grew extensively with the industrial revolution of the 18th and 19th centuries. The mass production of goods led to the development of new materials and new applications which improved our quality of life. Yet these advances came with costs. As industrialists developed products, the emphasis was on maximizing production while minimizing expense. For the industrial chemist, this meant the primary focus was on maximizing reaction yield. Environmental impacts were ignored and waste management was considered to be a nuisance. As the negative environmental and health impacts became more apparent, governments began to regulate waste.

Regulations have been growing exponentially over the last fifty years with no apparent end in site. Most regulations focus on managing waste or end-of-the-pipe controls. The punitive nature of these regulations has led to complaints about the costs of federal regulations. However, in 1990, the Pollution Prevention Act (PPA) was passed; this focused on starting materials (also known as feedstocks) as well as waste. This act

encouraged businesses to focus on the whole process rather than just waste management. Compliance with the PPA has, in many instances, reduced costs and increased profitability.

Today companies are becoming more environmentally responsible. Motivations for this include:

- Waste management costs exceed research and development costs for many companies.
- Liability costs can be considerable for both hazardous wastes and products.
- An environmentally friendly image is important to sales.
- Some companies want to be sustainable (as long as it is cost-effective).

Green (or sustainable) chemistry has developed in response to these challenges. Green chemistry is the design of chemical processes and products that reduce or eliminate the use and generation of hazardous substances. Green chemistry is not only the elimination of chemical processes and products that are environmentally harmful (chemistry minus) but rather a broadening of the chemists role (chemistry plus).

Green chemistry makes chemists molecular designers. This means that chemists begin with the desired characteristics rather than a pre-selected product. A product molecule is then selected which matches the desired characteristics and is environmentally benign. Once it is no longer needed for its original purpose, the product must break down easily into harmless natural products, or be readily reused or recycled to form new products. Next, the chemist designs the synthesis. Feedstocks are selected to minimize hazard and costs. The reaction process is designed and fine-tuned to maximize product yield and minimize energy consumption.

The demand for green chemistry led to several new developments. In 1995, President Clinton established the President's Green Chemistry Challenge to encourage and reward green chemistry innovations in both industry and academia.[1] Individuals from industry, academia, and government incorporated the Green Chemistry Institute in 1997 to promote and advance green chemistry. The Green Chemistry Institute later joined the American Chemical Society to increase its effectiveness in addressing global issues.[2] Green chemistry was systematized by the development and publication of the Twelve Principles of Green Chemistry (see page 110) by Paul Anastas and John Warner in 1998.[3]

Green chemistry initially became incorporated into the curriculum in the late 1990s mainly through the development of green laboratory experiments.[4-9] Much of the organic chemistry laboratory curriculum was developed at the University of Oregon (UO) and was first piloted outside the UO in the organic chemistry laboratory at Lane Community College, beginning in fall 2000. This material eventually became the first published green organic chemistry laboratory manual.[10] Lane was the first community college to adopt green organic chemistry laboratory curricula. Today Lane chemistry

facutly continue to collaborate with the UO in developing and testing new green organic laboratory experiments.

12 Principles of Green Chemistry*	
1	Prevent waste: Design chemical syntheses to prevent waste, leaving no waste to treat or clean up.
2	Design safer chemicals and products: Design chemical products to be fully effective, yet have little or no toxicity.
3	Design less hazardous chemical syntheses: Design syntheses to use and generate substances with little or no toxicity to humans and the environment.
4	Use renewable feedstocks: Use raw materials and feedstocks that are renewable rather than depleting. Renewable feedstocks are often made from agricultural products or are the wastes of other processes; depleting feedstocks are made from fossil fuels (petroleum, natural gas, or goal) or are mined.
5	Use catalysts, not stoichiometric reagents: Minimize waste by using catalytic reactions. Catalysts are used in small amounts and can carry out a single reaction many times. They are preferable to stoichiometric reagents, which are used in excess and work only once.
6	Avoid chemical derivatives: Avoid using blocking or protecting groups or any temporary modifications if possible. Derivatives use additional reagents and generate waste.
7	Maximize atom economy: Design syntheses so that the final product contains the maximum proportion of the starting materials. There should be few, if any, wasted atoms.
8	Use safer solvents and reaction conditions: Avoid using solvents, separation agents, or other auxiliary chemicals. If these chemicals are necessary, use innocuous chemicals.
9	Increase energy efficiency: Run chemical reactions at ambient temperature and pressure whenever possible.
10	Design chemicals and products to degrade after use: Design chemical products to break down to innocuous substances after use so that they do not accumulate in the environment.
11	Analyze in real time to prevent pollution: Include in-process real-time monitoring and control during syntheses to minimize or eliminate the formation of byproducts.
12	Minimize the potential for accidents: Design chemicals and their forms (solid, liquid, or gas) to minimize the potential for chemical accidents including explosions, fires, and releases to the environment.

* Anastas, P.T.: Warner, J.C. *Green Chemistry: Theory and Practice*, Oxford University Press: New York, 1998, p. 30.

Green Chemistry in the Classroom

So why do I teach green chemistry in my chemistry courses? There are three main reasons.

1) I am preparing my students for 21st century careers where sustainability will become more important as the years pass.
2) Green chemistry includes a discussion of environmental impacts and our responsibilities, which is usually not included in a science course.
3) Green chemistry captures the imagination and idealism of the students, increasing their interest in the subject matter. The following sections consider these points in more detail.

Preparing Students for 21st Century Careers

Green chemistry has been characterized in many ways, including "sustainable chemistry" and "benign by design," but the one that makes it important to teach in the classroom is "chemistry for the 21st century." As one reflects on the current state of the environment and recognizes the role that the chemical and materials industries have played in environmental degradation, it is clear that a significant change must be made by these industries if we want to have a healthy environment and maybe even a strong economy over the next one hundred

years. Furthermore, as many industries use petrochemicals, they must change their manufacturing processes to adapt to new feedstocks once petroleum becomes less affordable or even a rare commodity. While changes are incremental and often slower than desired, chemical and materials industries are pursuing sustainability when developing new products and upgrading manufacturing facilities. Students who understand and can apply green chemistry will have a significant advantage when seeking employment.

Discussing Environmental Impacts

Science classes are known for focusing on "just the facts." Students are told that, no matter what our personal views, the scientific evidence alone is what determines the answer. This is based on the scientific method, which is often used as either the unifying theme for a science course or as the foundation for the curriculum. This emphasis often results in instruction where values are not discussed or where all that is said about values is that science is neither good nor evil in itself, but that value judgments are made when applying the scientific knowledge. I have made comments like this in classroom discussions; however, this answer is incomplete at best, and somewhat disingenuous. We know that the observer is never perfectly unbiased when making scientific observations and drawing conclusions. This does not weaken science; rather it acknowledges that science is a human enterprise. Those who are doing the scientific research also bear some responsibility for how their research is applied. Many of the scientists whose research led to the making of the nuclear bomb recognized their personal responsibility and became anti-nuclear weapons leaders and peace activists after they witnessed the results of their research. This illustrates how important it is for scientists to be prepared to face and resolve ethical challenges.

Green chemistry creates the appropriate context for considering the larger impacts of chemistry. The principles of green chemistry create a framework of sustainability and environmental standards that guide the decision-making process for creating a material or designing a chemical synthesis. This framework is not intended to teach ethics, but rather it is an objective standard that allows for many possible solutions to the challenges that chemists face within a scientific context.

Green chemistry also requires critical thinking. The chemistry curriculum is designed to involve thinking above the levels of knowledge and comprehension, while students often simply want to memorize the facts. Solving problems using the Twelve Principles of Green Chemistry encourages (and requires) students to apply their chemical knowledge, analyzing what are often complex problems. This process usually leads to a synthesis of knowledge both from within organic chemistry and other courses as well as from their life experiences. The conclusions drawn require weighing information and making judgments about the relative impacts of each option, bringing students through all six steps in Bloom's taxonomy.[11]

Capturing Students' Imaginations

Science courses focus on facts and theories, often leaving all other considerations out of the instruction. This can leave the subject divorced from the rest of the student's reality. I want to teach chemistry to the whole person, not to isolate it only in the logic and reasoning area of their lives. Green chemistry allows me this opportunity. Many students are passionate about the environment and concerned about protecting their long-term health. Green chemistry provides a preventative tool to minimize future environmental impacts. It also provides a tool that can improve our environment. Students have responded quite favorably.

Integrating green chemistry has had some unexpected impacts on my instruction. 1) Students are excited about organic chemistry. Organic chemistry is a gateway course for several medical careers as well as a requirement of some science majors. For many students, it is a dreaded gateway course. Green chemistry enriches the content and many students now tell me how interesting organic chemistry is. 2) Student enthusiasm led to the formation of a green chemistry club on campus. Community college students rarely form clubs of this kind and membership in the Lane green chemistry club rivals that of many universities. Enthusiasm for the club has not waned as the club enters its fourth year of existence. 3) Students have worked on projects that have resulted in the development of new experiments for the organic course laboratory section. These projects require that students do a significant amount of library research and laboratory testing. It is quite rewarding to see students excited about work that could have been a boring required research paper. 4) Students have developed a small-scale biodiesel plant on campus. This has led to collaborations of chemistry students with diesel technology students and others interested in sustainability on campus. It has also created connections for students to local industry as well as other academic institutions.

The impacts of teaching green chemistry can best be summed up by the students themselves. "The aspect of the chemistry being 'green' also helped to perk my interest in chemistry since it incorporated environmental ethics into the course." "Before this year started, I didn't even know that there was a practice of green chemistry. ...I now think of green chemistry as a mind-set, a way to approach a certain reaction and try to make it better; for the environment and for you." "Organic chemistry—green organic chemistry has changed the way I look at the world, the way I view the field of chemistry and the way I live each day. It really has been an incredible and crazy experience." I couldn't have said it any better.[12]

Endnotes

[1]Presidential Green Chemistry Challenge. http://www.epa.gov/greenchemistry/presgcc.html (accessed Oct. 2005).

[2]About GCI. http://www.chemistry.org/portal/a/c/s/1/acsdisplay.html?DOC=greenchemistryinstitute\aboutgci.html (accessed Oct 2005).

[3]Anastas, P.T.; Warner, J.C. *Green Chemistry: Theory and Practice*; New York: Oxford University Press, 1998.
[4]Reed, S.M.; Hutchison, J.E. *Journal of Chemical Education* 2000, 77, 1627-1629.
[5]Warner, M.G.; Succaw, G.L.; Hutchison, J.E. *Green Chemistry* 2001, 3, 267-270.
[6]McKenzie, L.C.; Huffman, L.M.; Parent, K.E.; Hutchison, J.E.; Thompson, J.E. *Journal of Chemical Education* 2004, 81, 545-548.
[7]Pohl, N.; Clague, A.; Schwarz, K. *Journal of Chemical Education* 2002, 79, 727-729.
[8]Harper, B.A.; Rainwater, J.C.; Birdwhistell, K.; Knight, D.A. *Journal of Chemical Education* 2002, 79, 729-731.
[9]Kirchoff, M., Ryan, M.A., Eds. *Greener Approaches to Undergraduate Chemistry Experiments*; Washington D.C.: American Chemical Society, 2002.
[10]Doxsee, K.M.; Hutchison, J.E. *Green Organic Chemistry: Strategies, Tools, and Laboratory Experiments*; Pacific Grove, CA: Brooks/Cole, 2004.
[11]Bloom, B.S.; Krathwohl, D.R., Eds. *Taxonomy of Educational Objectives: The Classification of Educational Goals: Handbook 1, Cognitive Domain*. New York: Longmans, Green, 1956.
[12]Quotes from anonymous student surveys, May 2001.

John E. Thompson *first began integrating sustainability with chemistry as a graduate student at the University of Colorado at Boulder. His graduate research focused on replacement compounds for CFCs (Freon) which would not harm the ozone layer and have a minimal global warming potential. From 1993 through 1995 he worked as an environmental chemist evaluating data from suspected contaminated locations. He began teaching at the community college level in 1994 and has worked at integrating sustainability into the curriculum while teaching in Colorado, Kansas and Oregon. He joined the faculty at Lane Community College in 2000.*

Sustaining Teaching: The Value of Assessing Outcomes That Matter

Mary Brau, Kate Sullivan, & Sarah Ulerick

Abstract

There is no power greater than a community discovering what it cares about.[1]

The Lane Community College Fall 2005 Mini-Conference, "Collaborating to Assess Programs," afforded more than 250 faculty and managers a rare opportunity to listen to each other, hear from guest speaker Judy Patton of Portland State University, and engage in conversations about assessment. This paper presents qualitative data from a conference group activity, "Transforming Lives through Learning," and connects the outcomes of the activity to broader ongoing conversations about program assessment, subject-centered teaching, and sustaining the work of teaching.

Designing the Mini-Conference: Collaborating to Assess Learning

Be brave enough to start a conversation that matters. Talk to people you know. Talk to people you don't know. Talk to people you never talk to.[2]

Conference planners wanted to move many participants toward a more open and informed position on program assessment, believing that great value exists in having cross-discipline discussions of learning outcomes and assessment issues.

We anticipated that most faculty and managers would sit, as most of us will, with familiar colleagues. To counter this habit, we enlisted Mary Seereiter of Lane's dance faculty to design a walking "dance" to an Aretha Franklin song that would energize people and get them to sit with colleagues they did not know so well. The "dance" resulted in most participants sitting in multi-discipline groups, with the intent that they would gain new insights from the diverse perspectives offered.

Transforming Lives through Learning: Describing Outcomes that Matter to Us[3]

Ask "What's possible?" not "What's wrong?" Keep asking. Notice what you care about. Assume that many others share your dreams.[4]

To discover the kinds of general education outcomes participants wanted to foster, we posed this prompt for discussion:

> When you are no longer my students in the company of others, in the place that you live, in the wider world I hope that you can know, do or feel these things:_____

Participants were asked to consider how to complete the prompt individually and write the outcomes they envisioned onto sticky notes. Then small groups of three or four shared their outcomes. Finally, the entire table grouped their notes into categories and synthesized their learning outcomes onto flip charts, which were posted in the large meeting room.

After the event, Sarah Ulerick of Lane's science faculty transcribed the outcomes from thirty flip chart pages, many with ten to twenty sticky notes. We sought common themes, key words, and differences across the anonymous responses. There were sticky notes in eight directions circled by summary concepts, stickies in flow charts, stickies in neatly labeled lists, stickies at the head and feet of a sketch of a happy future student, stickies scribbled and stickies carefully printed. *In toto*, the flip chart pages reflected the energetic, creative and deeply personal conversations that occurred as faculty and managers shared their hopes and goals for students.

In preparing this paper, we polled members of the Assessment Team and a few other colleagues to get a sense of what it was like to share their deeply held aspirations for their students during the "Transforming Lives through Learning" activity. We asked, "How did people in your group feel about doing this activity? What was the 'energy' during the conversations? What were the affective outcomes for faculty as a result of the exercise?"

> From one participant: "Initially there seemed to be a bit of trepidation about what the 'right' answers might be, but the questions were framed in a way that left room for interpretation. After that 'moment of pause,' the energy picked up and we were writing thoughts on sticky pads, right and left. When it came time to discuss our insights, it was amazing to see that the people in my group were relatively on the same track... preparing students to have an immediate impact, and to feel confident that they had something important to contribute. This activity broke down walls with people I had no previous acquaintance with. It helped build a sense of community, based on shared intent."
>
> From another: "I felt a real excitement from all participants about being given the opportunity to share their thoughts. Group members enjoyed looking at a long-range outcome for students and voicing their hopes for students."

What were the insights gained by sharing across disciplines?

> From one participant: "The most striking thing about the cross-disciplinary discussion was that we all had very similar outcomes in mind for our students—broad categories of outcomes that sounded much like

> Lane's general ed. [sic]outcomes—critical thinking, communication skills, etc."
>
> From another: "One thing that was striking was the overlap in goals, despite very different disciplines... We spoke of the overlap and commented on the fact that everyone seems to have the same goals for gen ed [sic] requirements. We also noted differences in goals based on specific classes/programs, but even these seem subsumed under larger goals such as 'think critically.'"
>
> And similarly: "How similar many of our long range outcomes were or at least overlapped across disciplines—there was much appreciation and understanding that 'learning how to learn' and 'communicate effectively' was as important as content or important in using the content."

Did the activity impact your teaching in any way? Did you or someone you know follow up on this idea by using it in class or with students in some way?

> From someone new to Lane: "This activity helped me understand the culture at Lane. I left the activity feeling more grounded in what is valued at this institution, understanding what motivates faculty, and will use that in the teaching I do."
>
> From a professional technical instructor: "Well, actually, the ones I stated don't directly show up anywhere in my curriculum, I realized afterwards! That's good food for thought and grist for the old curriculum development mill...Part of that is the long-time dilemma of how 'gen ed' [sic] outcomes get worked into professional technical curricula."
>
> From another: "As I have contemplated this (may or may not be what my group felt) it makes me feel good because if 'the majority' of us at Lane all want similar things for our students then collectively we can be successful. One term with a student is unlikely to produce 'life altering' outcomes but if we all work towards the same ones then it is possible!"

Several teachers posed the outcomes question directly to students as a first-day activity. Students were able to verbalize their own long-term goals and to see how the teacher's goals might match theirs. The activity helped students think beyond "getting a grade" and make the connection between expected course content and their ultimate ambitions.

Results: Learning Outcomes for Lane Students

Be intrigued by the differences you hear. Expect to be surprised. Treasure curiosity more than certainty.[5]

We compiled and analyzed the outcomes faculty wrote during the conference activity. We found, perhaps not surprisingly, that across disciplines we share many common goals for our students.

The most common goal mentioned on flip charts for this exercise was the ability to *think*—critically, analytically, creatively, with passion, broadly and objectively. Participants also wrote, "think and problem solve," "think logically," "think about the environment when making food choices," "think about the world and how it works." In all, the words "think" or "thinking" appeared more than thirty times on the flip charts from thirty tables of faculty. This finding dovetails with work Lane completed in 2001, in which faculty identified "Critical thinking and problem solving" among four core general education abilities.[6]

The second most frequent goal participants mentioned on the flip charts was *confidence*. The words "confidence" and/or "empowerment" appeared twenty-four times on the flip charts. For most participants, the goal of confidence or empowerment took a generalized form—they wrote "self-awareness and self-confidence," "feel confident in yourself, your knowledge and your ability to contribute professionally," "face new situations with an open mind, acceptance and confidence," "feel confident: in your field, in self and personal integrity," "feel empowered to pursue your goals." Other faculty had discipline-specific goals for student confidence: "confident with your skills when giving patient care," "feel confident in applying math in your daily life," "have confidence to use English." The goal of *confidence* was not reflected in the general education core abilities in 2001, probably because faculty focused on cognitive rather than affective outcomes for students. However, participants' responses indicate that fostering student confidence is the highest affective goal most of them hold for students at Lane.

In third place was *communication*. Participants wrote "communication and collaboration," "communicate clearly (graphs/writing, talking, arguing)," "use French to communicate (or any other language)," "communicate articulately through our physical body as well as our intellect," "understand how perception influences communication." In sum, the words *communicate* or *communication* were listed twenty-one times on the flip charts, a finding that also aligns with faculty work in 2001 identifying the general education core ability, "Communicate effectively."

Global community and *diversity* were also recurring themes. Participants used terms like "Relationships/Collaboration/Sense of community/Valuing diversity" and "Be a contributing citizen" to group these ideas. Goals for students included the following: "Identify with and participate in diverse communities larger than family," "Be a good citizen, locally and globally," "Work for social justice in addition to working for

material gain," "Ask if you are making a significant contribution to providing healthcare to the community." These goals are consistent with Lane's core ability, "Increase understanding of the relationship between self and community, including self-awareness and personal responsibility."

Faculty wrote outcomes for students on leadership, self-reflection, aesthetic sensibilities, lifelong learning, conflict resolution, inner peace, balance and sustainability, patience, compassion, and empathy. Results of the "Transforming Lives" exercise conducted at the mini-conference are consistent with the faculty work conducted between 1998 and 2001 on general education outcomes, for which faculty wrote the rationale, "The purpose of the general education program at Lane Community College is to foster wisdom and promote educational depth and breadth.... General education promotes understanding of self, society, and the environment, helping students to cultivate habits essential to lifelong learners as citizens of a global community." All outcomes created by participants at the conference have strong commonalities with Lane's general education core abilities, with the exception of the affective outcomes like *confidence.*

The outcomes that participants described are broad life goals for students. Many of the outcomes will not be fully realized for years after our students leave Lane; after all, that's how conference planners posed the question. Taken collectively, these are clearly program outcomes: the global and holistic result of a student's time at Lane. What is the value of assessing such outcomes? While we all agree that assessing student learning is a big part of teaching, we are less assured that assessing program outcomes is valuable. And if we could agree that it is, how would we begin to assess whether these outcomes are, in fact, the ones toward which we are teaching?

Assessment in the Larger Context: National, State and Local Issues

Invite in everybody who cares to work on what's possible.[7]

Our conversation about assessment at Lane mirrors a larger one that has been ongoing for a quarter of a century. The national dialogue involves several developments in educational theory. First, we are in the midst of a pedagogical paradigm shift in which the roles of teacher and student have been redefined. This shift is reflected in a constructivist world view that emphasizes the ways in which students construct knowledge and make meaning rather than in their ability to memorize facts or data. To use an increasingly popular phrase among educators, the teacher is no longer the "sage on the stage" but the "guide on the side" who coaches her students as they actively shape their own learning processes. In *The Courage to Teach*, Parker Palmer cautions that we need not simplify this shift into a binary of teacher-centered vs. student-centered education; rather, we must recognize that good classroom practice involves both teachers and students in a quest to understand the subject at hand.[8]

This paradigm shift is manifest in a second change: a focus on outcomes or student proficiencies rather than seat time and content coverage as the measure of student learning. Formal program assessment, then, is necessarily a part of evaluating learner proficiencies.

At Lane, our conversations about being a learning-centered college have been motivated by social justice and pedagogical concerns. We recognize the value in the principles expounded by Palmer. Our focus on assessment, however, is also based on pragmatism: in our 2004 accreditation, evaluators recommended we make program assessment systematic across the college. Just as we are in the midst of a pedagogical paradigm shift, we are also at a juncture in history when assessment is increasingly mandated by forces outside higher education. Barbara Walvoord, author of *Assessment Clear and Simple: A Practical Guide for Institutions,* contends that in the absence of proactive behavior on the part of educational institutions, the assessment vacuum may be filled by organizations and practices with which we, as faculty, do not agree. We must explain and define ourselves lest someone else do it for us.

Walvoord does not focus solely on the pragmatic grounds for assessment; she also articulates the ethical and pedagogical purpose of good assessment: *teacher-driven assessment strengthens classroom practice and program integrity*. It helps us make visible to a number of parties—the general public, legislative bodies, our colleagues, our studentsand ourselves—what we do and why we do it. Assessment moves us to take stock of our strengths and weaknesses and make plans for improving and documenting student learning. In short, good assessment is good practice and good press that can serve as a tool for countering the anti-intellectual and anti-teacher canards that abound in contemporary society. Assessment can serve the interests of students and the interests of teachers by demonstrating the value and efficacy of what we do.

Walvoord also notes that we already do assessment—we tinker with our assignments and syllabi, we grade student performance, we may obsess about our own teaching and constantly re-design projects and exams—but we need to shift from assessment on an individual, class-by-class basis to a more systematic and cooperative form. The questions then expand from "How well did an individual student do in a specific class?" to "How well are students learning within courses and within our programs? How can faculty improve upon their teaching?"

For Walvoord, good assessment and good program design are co-extensive: we need both. And assessment-driven programs begin with desired outcomes and create assessment on the front end of the curriculum design process. Literally, teachers begin with the end in mind. Once program designers have agreed on not only the outcomes but also on how students will demonstrate knowledge or proficiency of the intended outcome, then the scope and sequence of course activities can be created.

Using Rubrics to Assess Learning Outcomes

Acknowledge that everyone is an expert about something.[9]

One powerful tool in this assessment process is the design and use of assignment rubrics, which clearly articulate the teacher's expectations for a given assignment. The value of assignment rubrics is illustrated, albeit indirectly, in the comic strip *Calvin and Hobbes*. In a back-to-school theme, Calvin attempts to assemble a research project on bats. He indicates that the presentation of the paper is what matters: he has included some graphics and a plastic cover—the paper will surely earn an "A." Hobbes' reply demonstrates his skepticism: Calvin hasn't really done any research—no matter how good the paper looks, without meaningful content, his research essay will surely merit a failing grade. Hobbes wants his name taken off the manuscript.

As educators, we may chuckle at Calvin's antics, having received examples of work not unlike that submitted by the mischievous character: papers long on style and short on substance. We may chalk up this kind of student performance to laziness or an optimistic attempt to "con." Surely a conscientious student knows that content is more important than presentation. Perhaps.

We must also entertain the idea that students may not know what appropriate college-level work is: without the benefit of academic training, a colorful, plastic-encased paper presented in an interesting font may seem worthwhile. Our understanding of "meaningful content" may not be theirs.

Rather than rely on the I-know-good-work-when-I-see-it ethic of evaluation, faculty can make their expectations visible to students via Primary-Trait Analysis (PTA) scales or assignment rubrics. The value of PTA scales and/or rubrics is much the same as the value of program assessment: *we articulate and make visible our expectations of both course content and student performance.* We give students a blueprint (as much as such a thing is possible) for success on assignments and in the classroom; we outline behaviors and proficiencies that initially may be opaque to students. We make our assumptions clear.

The benefits of providing students with clearly articulated expectations are many. According to Laurie Jones Neighbors of the Teaching Effectiveness Program at the University of Oregon, when students have access to well-designed rubrics, they measure their work against the criteria on the rubric instead of asking the teacher "How do I get an 'A' grade?" or "What do you want?" Neighbors further argues that rubrics can help teachers better coach their students: the rubric serves as the locus of evaluation and justification for a grade, while comments within a paper function as coaching and encouragement to the student. The explicit separation of two of the primary purposes of grading into *coaching* and *evaluating* can improve the teacher-student relationship immeasurably. Work up front in rubric design pays off with both a less anxiety-producing grading process and improved student work.

Sarah Ulerick began using rubrics while teaching summer classes in geology in 2004. The small number of students and the fast pace of the class inspired her to experiment with a portfolio-style assessment in place of grading daily laboratory exercises. She knew that other science faculty members were using portfolios successfully. For Ulerick, the portfolio was a way to assess students' best work, not their daily work-in-progress. Detailed rubrics for the portfolio communicated how this new style of assessment would be graded, so that students would know how to succeed.

	Exceeds Expectations	Meets Expectations	Approaching Expectations	Does Not Meet Expectations/ Not Present
Content/Reasoning	Essay is organized around a central idea that is carried throughout the paper and developed using logical, explicitly stated reasons	Essay is organized around a central idea that is mostly carried throughout the paper and developed logically	Essay is organized around a central idea, although the idea may not be clearly sustained throughout the entire essay and/or well-developed	No central idea/thesis present
	Central idea goes beyond the obvious and is not simply plot summary or description; thesis statement is clear, concise and well crafted	Central idea goes beyond the obvious and is not simply plot summary or description; thesis statement is clearly presented	Central idea goes beyond the obvious and is not simply plot summary or description; or, thesis statement may be difficult to discern	Lack of evidence/explanation of claims
	Integrates concrete examples from the film(s): dialogue, visual descriptions, etc. and clearly explains their relevance to the paper's claims	Integrates concrete examples from the film(s): dialogue, visual descriptions, etc. and mostly explains their relevance to the paper's claims	Integrates concrete examples from the film(s): dialogue, visual descriptions, etc., but may not thoroughly explain their relevance; or, may lack concrete examples for some assertions	
Structure	Introduction is engaging, sets the stage for information/issues covered in the paper	Introduction is appropriate and mostly sets the stage for information/issues covered in the paper	Introduction is present, although may leave out salient pieces of information or raise issues not entirely covered in the paper	Introduction does not set the stage for information/issues covered by the paper
	Conclusion signals the end of the essay, ties everything together well, underscores the significance of the thesis	Conclusion signals the end of the essay, ties everything together	Conclusion signals the end of the essay, although it may not tie everything together and/or may raise new questions/issues not covered in the essay	Conclusion does not sum up the paper/tie ideas together; may seem unrelated to the main idea, or may be absent entirely
				Paper may end abruptly
Grammar, Style and Format	Contains few (no more than 3-4) serious grammatical or spelling errors	Contains few (no more than 4-5) serious grammatical or spelling errors	Contains few (no more than 5-6) serious grammatical or spelling errors	Has more than 6 serious errors in grammar and/or spelling
	Conforms well to MLA style: includes correct header, internal citation and "Works Cited" Section	Conforms to MLA style: includes correct header, internal citation and "Works Cited" section	Attempts to conform to MLA style; may be missing header or correct format for "Works Cited" section	Does not adhere to MLA style

Fig. 1. Sample rubric for a writing assignment from Kate Sullivan's English 195: Introduction to Film Studies.

Having to spell out distinct portfolio assignments keyed to stated learning objectives and levels of performance helped Ulerick focus on essential learning outcomes for students. "Rather than limiting my teaching," she says, "the portfolio 'raised my game' and that of the students."

Ulerick's portfolio rubric has evolved to a standard format adequate for her goals. Students get in-class feedback from their instructor and peers to help build the skills and knowledge needed to complete the specific portfolio assignments. They are encouraged to create a professional presentation in the portfolio. They also report that preparing the portfolio helps them to study for tests. In Ulerick's class, students receive a checklist of items to include in each portfolio, and submit work three or four times each term, reaffirming that they are responsible for their learning and for demonstrating their knowledge and skills. (Figure 2).

Portfolio Scoring Rubric

	Exemplary	Accomplished	Developing	Beginning	SCORE
	5 - 6 points	4 points	3 points	0 - 2 points	
PORTFOLIO CONTENTS	Maximum of specific tasks completed and done well	Majority of specific tasks completed and done well	Minimum of specific tasks completed	Less than the minimum of tasks completed	x # of items
EXPLANATIONS/ REFLECTIONS	Accurate, in-depth information enhances portfolio, shows in-depth thought	All or nearly all information accurate, thoughtful	Most information accurate, shows little thought	Inaccurate information given, lacks careful thought	x 2
PRESENTATION QUALITY	Very well-written, well-organized and neatly presented	Most explanations are well-written, organized and neat	Fair writing; some organization; some portions messy	Poorly written or organized and/or messy; plagiarized	
EXTRA POINTS FOR VISUAL COMPONENTS **0 – 2**			3 or more colorful and intriguing pictures or figures; well chosen. 2 pts.	1 or 2 extra pictures or figures related to content. 1 pt.	
				Total = varies	

Fig. 2. Rubric for Ulerick's end-of-term portfolio assignment in one geology course.

A Rubric for Critical Thinking

Know that creative solutions come from new connections.[10]

How would we then propose using a rubric to assess some of the ambitious life outcomes we hold for our students? We might want to consider analyzing the outcomes in terms of novice or emerging skills and knowledge, since the ultimate realization of these goals is many years down the road. That is, what skills and knowledge do we believe will be indicators that students are developing toward the holistic outcomes we have envisioned? Figure 3 shows a rubric for an outcome related to critical thinking, described earlier in the "Results: Learning Outcomes..." section of this paper as one of the most important goals of Lane's instructional programs. To develop critical thinking, working on attitudes of openness to new ideas might be an initial outcome, and this rubric makes explicit the value the instructor places on openness to examining the ideas of others. to welcome faculty to a sustained and collaborative conversation about assessment; to communicate why assessment is valuable, and to begin defining program assessment at Lane.

Outcome: Develop attitudes that support critical thinking	**Exceeds Expectations**	**Meets Expectations**	**Approaching Expectations**	**Does not meet expectations**
Explore Ambiguities	Explores and acknowledges ambiguities in evidence	Tolerates ambiguities in evidence	Recognizes ambiguities in evidence	No tolerance for ambiguities
Recognize Personal Bias	Articulates and recognizes personal bias	Acknowledges personal bias	Acknowledges personal bias	Does not recognize personal bias.
Understand Value of Divergent Views	Celebrates value of divergent views	Tolerates divergent views	Tolerates divergent views	Sees others' views as right/wrong, black/white
Intellectual skepticism	Demonstrates intellectual skepticism respectfully	Demonstrates intellectual skepticism respectfully	Challenges others' ideas but may not have a rationale for doing so	Does not challenge ideas presented by others
Intellectual honesty	Demonstrates intellectual honesty by providing summaries of others' ideas and documenting with references to the original	Demonstrates intellectual honesty by providing summaries of others' ideas and documenting with references to the original	Acknowledges others' ideas, but uses long quotations rather than summarizing	Presents others' ideas as own, without footnotes or references if material is summarized

Fig. 3. Rubric for an affective outcome of critical thinking

Kate Sullivan *(left) holds a Ph.D. in English with a specialization in film studies. Her interest in program assessment dates back a decade and stems from an involvement in the revamping of two undergraduate programs—Film Studies and Women's Studies—at the University of Oregon. She is an enthusiastic devotee of rubrics.*

Mary Brau *(middle) is Lane's Coordinator of Student Outcomes Assessment and Curriculum Development. Her checkered past includes a thirty-five year career in education: English composition and "University Studies" at the University of Oregon, swimming and high school English in New Mexico, library assistant at Harvard, Unitarian religious education in Massachusetts and California, developmental mathematics and writing in Tennessee. She once earned a blue ribbon for her apple pie at the Iowa State Fair.*

Sustaining Teaching

Rely on human goodness. Stay together.[12]

Of course, good assessment comes at a cost: as many of us know, it takes time, energy and informed and supported faculty. As early as 1991, researchers such as R.J. Dietel, J.L. Herman, and R.A. Knuth noted that a shift to outcomes- or proficiency-based courses that are thoroughly integrated with assessment-driven program curricula necessarily include a number of support measures. Similarly, Walvoord argues that in order for assessment to be thoroughly integrated into curricula, it cannot be an afterthought or an add-on: conscientious educational institutions must provide financial support so that assessment is included in the budget as a recurring line item. Indeed, Dietel, Herman and Knuth enumerate the following conditions and practices for good assessment: strong leadership support, ongoing staff development and training including coaching and mentoring of faculty, and an educational environment that supports experimentation and risk-taking. Further, assessment-driven curricula entail more time to develop than content-organized curricula; they cost more and require that administration allot time and money for aggregating and sharing data.

We can develop and sustain a culture of assessment at Lane through collaboration among faculty, instructional managers, students, college leaders, the Board of Education, and the classified and faculty associations, and by including allocations for this in the budget process. All stakeholders must understand that clear outcomes, collaboratively developed, can define, inspire, and direct great teaching. In a culture of assessment, we engage in meaningful conversations about outcomes, about the work of teaching and learning, and about our hopes for our students.

How can the assessment conversations be opportunities for growth toward a more sustainable teaching life? If we keep talking, we will reduce our isolation in separate classrooms and be energized by collaborating effectively to develop program assessments. We can share our ideas in designing rubrics to assess complex skills, knowledge and attitudes. Clarity about our learning outcomes will contribute to consistency in programs. Assessing our outcomes and sharing the results with our many publics will reaffirm the important work that we do.

Most notably, clarifying and assessing outcomes places the subjects we teach, and the passion we have for them, in the center of our enterprise. Putting the subject at the center of our teaching, Parker Palmer suggests, is what students are describing when they talk about great teachers who have "a passion for the subject" or who "brought the subject to life," leading students into a previously unknown world of thoughts, skills, and mysteries. "A subject-centered classroom," Palmer concludes, "also honors one of our most vital needs as teachers: to invigorate those connections between our subjects, our students, and our souls that help make us whole again and again."[13] By explicitly sharing our expectations with students, we make them complicit in meeting their own learning objectives. Rather than limiting our creativity or theirs, we set the bar where it belongs and enable all of us to see where we are going.

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Endnotes

[1] "There is no power greater than a community discovering what it cares about." With this thought, Margaret Wheatley concludes her book of essays, *Turning to one another: Simple conversations to restore hope to the future.* (Wheatley, 2002, p. 145). She goes on to enjoin us:

Ask "What's possible?" not "What's wrong?" Keep asking.
Notice what you care about.
Assume that many others share your dreams.
Be brave enough to start a conversation that matters.
    Talk to people you know.
    Talk to people you don't know.
    Talk to people you never talk to.
Be intrigued by the differences you hear.
    Expect to be surprised.
    Treasure curiosity more than certainty.
Invite in everybody who cares to work on what's possible.
    Acknowledge that everyone is an expert about something.
    Know that creative solutions come from new connections.
Remember, you don't fear people whose story you know.
Real listening always brings people closer together.
Trust that meaningful conversations can change your world.
Rely on human goodness. Stay together."

[2] Wheatley, 2002.

[3] This activity was borrowed from the Washington Center for Improving the Quality of Undergraduate Education National Summer Institute on Learning Communities, a weeklong institute at Evergreen State College attended by a team from Lane, June 21 – 26, 2005.

[4] Wheatley, 2002.

[5] *Ibid.*

[6] Lane's statement on General Education and Core Abilities, approved February 2001, is available at http://www.lanecc.edu/vanguard/GenEdOutcomes.htm

[7] Wheatley, 2002.

[8] Palmer, 1998, p.116.

[9] Wheatley, 2002.

[10] *Ibid.*

[11] *Ibid.*

[12] *Ibid.*

[13] Palmer, 2002, p. 120.

Sarah Ulerick *(right) is lead faculty in Earth and Environmental Science at Lane and currently chairs the Assessment Team. She has a Ph.D. in Science Education with an emphasis in geology. She has been writing and assessing learning outcomes since 1976.*

Sustainability at Lane

Lane's Energy Management Program is the only one of its kind in the United States. "Our two-year program in commercial energy auditing provides the foundation for a world of employment," says Director Roger Ebbage. "Graduates can go into a variety of energy-related jobs like energy management, energy auditing, energy policy, consumer education, and residential weatherization. Sometimes students are hired into the market even before they graduate."

Self-Reliance Through Permaculture

Jude Hobbs

There are many mysteries in the world and, to some, permaculture is one. But in truth it is a new word for a very old concept. In the years before the throw-away society, people recycled many goods. Clothes were carefully taken apart and remade into other garments, or became patches for quilts. Appliances were repaired instead of thrown away. Even leftovers in the refrigerator were more highly regarded! Within our lifetimes, a change has come over the country. It became politically unpopular to save and reuse. Debt became almost fashionable until we began experiencing its awesome price through our loss of quality of life. These consuming attitudes cost our planet and us dearly. Some of us are finally ready to make a change. The study and application of sustainable systems is the way.

Permaculture(*perma*ment *culture*) is such a system. As a design strategy, permaculture directly influences efficiency and versatility in most aspects of life, in rural or urban settings, from the garden to reforestation to responsible investing. Permaculture evolved through the hard work and experimentation of Australians Bill Mollison and David Holmgren, beginning in 1972. The underlying theme is to create human-designed and maintained ecosystems that are agriculturally productive and yet have the sustainability, diversity and resilience of natural systems. It takes into account the full circle of life: Through integration of land, water, people, plants, animals, shelter, technologies and community, productive and beautiful environments can evolve.

By 1981, the concept of permaculture (PC) matured sufficiently to be taught as an applied design system. In this time of declining resources, whether it is oil, water or wood, permaculture offers practical guidelines and positive techniques for incorporating sustainability into all aspects of one's life—from water harvesting, to gardening, to supporting local businesses. Whether you live on large acreage or a city lot, through creative design your property can be planned to maximize efficiency and productivity.

For ease of implementing permaculture, there are a set of principles and elements that offer strategies to guide you to make value-based decisions. The ethical foundation of permaculture rests upon care for the earth, care for each other, and distributing surplus goods such as food, knowledge and time. Permaculture turns problems into solutions, constraints into resources, and arranges as many functions as possible in every element of the landscape.

By reading the land, observing and recording what is existing (site analysis) and what you want to include (needs assessment) you can start to prioritize what to do when and where. The design process is often overwhelming. The first step is very simple—observing through the four seasons. Notice climatic conditions—rain, sun, wind, and frost patterns. During torrential rains how does the water flow on the land?

What is the potential for swales, ponds or roof catchment systems? Once you are familiar with your site, you can sort out challenges and turn them into solutions, implementing permaculture techniques as time and money allows.

Permaculture Techniques

Since water is quickly becoming one of our most precious resources, an important principle is holding water on the land for as long as possible. Soil and trees are wonderful sponges for holding water on the land, as are rain catchments: ponds, water tanks and barrels. One of my favorite ways to store rainwater intercepted off my roof is in wine barrels. Since we are in wine country, oak barrels come available when they are no longer useful to wineries (they become too "oakie"). From our roof gutter, I direct the downspout into the barrel, put a tap on the side close to the bottom and an overflow on the side top. Water is easily accessible for use, and when the barrel is full the overflow goes into a pond or the storm water system. Many cities are now changing their policies for rain run-off and are researching water collection through swales (shallow ditches), ponds and wetland filtration systems (biofilters). They are supporting the use of rain catchment to use for irrigation and lessen the costs of storm water disposal, even offering credit for storm water mitigation. The Eugene Water and Electric Board (EWEB) is supporting these ideas and, in some cases, offering grants to install water catchments.

A pond is also a multi-functional resource. Ponds can provide irrigation, water for animals, aquatic crops, fire control, light reflection, livestock barriers, habitat for waterfowl, and a place for quiet reflection. Keeping sustainability in mind, incorporating many functions for a single element (the pond) is the key to successful design.

Is the sun beating down on your house all summer? Planting deciduous trees on the southwest side will block the summer sun and allow light for winter. Do you notice strong winds that impede plant growth or add to chilly house temperatures? Windbreaks can funnel air up and outward. You can also create a diverse multifunctional design by planting trees, shrubs, ground covers, vines and/or herbs. Planting strips along property lines, between fields, and/or along riparian zones can conserve water, lessen erosion, provide additional income, and furnish habitat for beneficial insects and wildlife.

Permaculture not only considers the land but also the house. If you are building a structure consider solar orientation, using recycled materials or constructing with local material such as straw bales. Is your existing house well-insulated? Is appropriate technology (solar, woodstove) part of your operational system? Are you using environmentally safe products? Do you precycle/recycle? Do you buy bulk foods and support your local organic farmers through Community Supported Agriculture (CSA) or a farmers' markets? Think of the many ways to lessen miles traveled for your particular consumer needs.

Within a permaculture system, relative location is essential for efficiency and is defined in terms of zones (I-V). It seems there is never enough time to do everything that needs to get done. If we locate the most often visited areas closest to the house (Zone I) then we will have walked fewer steps and saved more time. You might consider an attached greenhouse on the south side of your home with vines (kiwis or grapes) covering it to offer summer shade. Whether you live in the country or an urban setting, providing some edibles by the house saves time and can provide year-round food and beauty. For instance, you are planning on having salad for dinner and also need some culinary herbs to season the soup—how about planting the salad and herb garden near your kitchen door? The kitchen garden is considered an element. Within this element, design in as many functions as possible. In the herb garden you might wish to have some chives, parsley, coriander, oregano, thyme, and/or other edible plants, and to attract beneficial insects. You could also include fragrant flowers, a bench for resting and/or a birdbath made from an old tree stump and a recycled glass bowl or other water container.

I have a fig tree in a protected spot among some larger trees; at the base are perennial flowers and herbs. The blueberries, with strawberries below, are planted along the edge of the vegetable garden and are a transition into another perennial flower and herb garden. In this area is a thriving Frost peach and Italian Prune plum tree. I have found that in my partly shaded large yard blueberries, thimbleberries, lingonberries, strawberries, honeyberry, an apple tree, rhododendrons, sword fern, hardy fuchsia and camas grow well even under my huge black walnut tree. Mini-dwarf fruit trees are tucked in throughout the yard as are many bird-attracting plants.

Further from the house into Zone II is where a larger vegetable garden is located, as are the small domestic animals, some dwarf fruit trees, out buildings, and small ponds. A greenhouse could also be placed in this area. The other day, I took a walk around a friend's garden; he had built a small green house using recycled wood for the main structure, metal for the roof, and insulated it with straw from the neighbor's field. To maintain heat he put large black 55-gallon drums filled with water on the north wall. This structure kept his chili pepper collection frost-free all winter. In our maritime climate, we can grow food all year round in the right conditions.

The concept of "a calorie in and a calorie out" will assist you in seeing the potential for PC designs. For example, to maintain our body weight, we must eat just as much food as our body can utilize; similarly, we look for ways in our permaculture designs to achieve a balance of energy in and out so that we are conserving our resources. Including animals as part of the permaculture design is one way to import less from the outside. For instance, having a few rabbits provides manure for a small city lot. They are very quiet, and easy to care for. Placing them near the compost pile and garden is time-saving planning. The manure helps the compost break down, and the greens from the garden can help feed the rabbits.

Zone III is the place for the commercial farm crops, forage foods, larger orchard area, nursery plants, and windbreaks. Zone IV contains the forest and pasture areas managed for wild crafting and fuel needs. Woven into each zone could be plants for wildlife, soil conditioning, windbreaks and water storage. There are often overlaps within each zone. Zone V is the uncultivated wild sanctuary area.

The area between one microclimate and another is defined as an edge. It is a well-utilized principle in permaculture that encourages diversity and stability. If one thinks about what grows at a forest edge or along a stream we observe a wide variety of insect, animal and plant life.

In sustainable practices, biological resources are used when available to balance energy in and out of the system. Some ways of achieving this are using animal manure, leaves and other plant debris for mulch and compost, trees for fuel, small piles of prunings for wildlife habitat, planting nitrogen-fixing cover crops and plants, utilizing chicken "tractors" for scratching, fertilizing and digging up insects and roots, including Indian Runner ducks, who are voracious slug eaters. Well-thought out management in the beginning stages will yield long-term benefits.

Suburban/Urban Permaculture Strategies

If you live in suburban or urban areas, encourage the planting of fruit and nut trees in city parks and general tree planting wherever possible. Community gardens, bicycle paths, mass transit and the decentralization of shopping centers are important in urban development. Become involved with city planning and encourage new housing to face south and include appropriate technology. Suggest to apartment dwellers how they can use their balconies and windowsills for growing herbs and salad greens. A friend of mine who lives in a Portland apartment did not know what to do with her veggie scraps. She decided to bring her quart container of scraps with her when she took her evening walks. Where appropriate, she dug a little hole and made a nice deposit of the soil conditioners. There are many exciting ways to become involved in the passage into self-reliance.

Permaculture is a broad philosophy that goes far beyond the boundaries of the land. We are encouraged to become truly a part of our community in the larger sense. We can support local businesses which helps our economy and cuts down on the quantity of goods imported from farther away. An added benefit is that we begin to know the people of our community better, making it a safer and more intimate place to live. We are challenged to use financial institutions that invest locally and in a socially responsible manner, so the money from our community goes into projects that benefit our community. We are also encouraged to volunteer, to support and help others in need. One example would be starting community gardens that help feed people who are homeless, or who simply can't make ends meet. Another form of volunteering is

giving away our surplus to those who need it; not trading the surplus, just freely offering it.

Permaculture is a worldwide grassroots movement. Thousands of people have embraced these concepts through taking courses or reading books. The goal is to design small-scale, energy-efficient rural and urban homesteads that generate personal and community empowerment. Every permaculture site is unique, as unique as its inhabitants. A wide range of style and techniques can be utilized in every environmental condition and within any culture.

At a 1986 conference at The Evergreen State College, Bill Mollison said, "If you set out to solve the world's problems at some stage you will become a gardener. If you set out to become a gardener at some stage you will see that you are working to solve the world's problems."

Resources

Bill Mollison's *Permaculture: A Practical Guide for a Sustainable Future* (Island Press, 1990) is an in-depth manual describing techniques to actualize Permaculture. Mollison states, "Permaculture design is a system of assembling conceptual, material, and strategic components in a pattern which functions to benefit all life forms". A follow-up book and an easier read is *An Introduction to Permaculture* by Mollison and Reny Slay.

An excellent resource for sub/urbanites is Toby Hemenway's *Gaia's Garden: A Guide to Home-Scale Permaculture.*

Jude Hobbs *is a horticulturist, permaculture designer, and instructor. Since 1982, her landscape design business has provided environmental design solutions for urban and rural settings. She has presented permaculture workshops and courses throughout the West and Hawaii for sixteen years. She has written* A Guide to Multi-Functional Hedgerows, *and tends a forest garden in Eugene, Oregon. She has supported local food concerns through her involvement with Lane County Food Coalition, Eugene Permaculture Guild. Visit www.cascadiapermaculture.com for more information.*

Sustainable Lifestyles: There's Freedom in Simplicity

Charlotte Behm & Harriet Behm

As Pat rushes to lunch, she passes a friend and barely stops to talk.

"Been keeping busy?"

"Sure have."

In the next block, Pat passes another person she recognizes. Between them, they speak four words, hardly slowing down to exchange greetings.

"How've you been?"

"Busy."

Late that evening, Pat comes home and finds Jan cooking dinner. "Busy day?" Pat asks.

Jan answers quickly, "As usual, I didn't get home until 8:00 and I just started cooking dinner now. Can you open that can of beans?"

"Sure—just let me wash up and grab the opener." As Pat pours the beans into a microwave-safe bowl, she hesitatingly says, "You know, I saw my friend, Howard, today. I asked him if he was keeping busy. And you know what he said?"

"What?"

"He said, 'No.'"

"No, what?" Jan asks.

" He told me that he engineers his life so that he has enough time."

"Yeah, right. I'll bet he's just as busy as we are," Jan answers.

"Howard told me that if I'm interested in slowing down my life, I might like this tour of homes that's happening Saturday."

"You mean, go through huge houses with expensive furniture and professional interior decorators and landscapers? How's that going to save us time?"

"No, this is different. It's the 'Tour of Homes Off the Fast Track.' It's a benefit for a nonprofit; I bought two tickets on the way home. I was hoping we could go."

"As if we're not busy enough, Pat! How is a tour of homes going to help *us* be less busy? When are we going to find time to shop for your nephew's birthday present and that power washer we need?"

Early Saturday morning, they are heading for the first stop. Pat is reading the program aloud as Jan drives. "Welcome to the Tour of Homes Off the Fast Track. There are five tours available. You may visit in any order."

"We're on our way to home number four, right?" Jan asks. "I'm glad we're not starting at the first one so we can beat the crowds. They have a tour shuttle, but it's a good thing we have our car in case we want to move along a little faster. "

"I thought you said that we weren't going to rush today, remember? We have a million things to do today at home if you want to go back now, not to mention shopping."

"No, you're right. We are slowing down today. Let me read you the owner's statement from home four."

> *I love living near the center of the city because I am close to my work, shopping, and social and cultural events. I know most of my neighbors, some of whom have lived here for more than one generation. We are a neighborhood of small, simple houses. Most of us here are not interested in accumulating more square footage.*
>
> *If we have cars, we park them in the alleyways behind our houses. We don't have garages facing the street. In good weather, we spend evenings on our front porches, and talk to people who come by. I live by myself and it's easy to find someone to talk with when I get in the mood for company.*
>
> *Our neighborhood is featuring our community garden on the tour. We took an empty lot and made an organic garden out of it. There are benches in it, two with shelters like at bus stops. We also garden on either side of the alleyways behind our houses. We have a garden club that organizes people who work in the gardens. We give produce and flowers to our neighborhood elders who are unable to work with us.*

"How could they possibly have gotten all of their neighbors to agree to that?" Jan asks incredulously. "We don't have time to talk to our neighbors. What is that woman's name who lives next to us? Karen? Kathy? I think that's her cat that's always hanging out on our porch when I get home."

"It's Caroline. And I don't think she has any pets. I think the cat belongs to that family across the street."

As Pat and Jan approach the neighborhood, they see more than a dozen people waving hello.

"Pat, look at this. We get an early start and rush here out of sequence to make sure we avoid the crowds. Now we're the only ones here, and all these people are staring and waving at us. How nice. I feel conspicuous."

"Come on, this will be fun."

The neighbors lead Jan and Pat through the garden, explaining about the many vegetables and other plants, organic gardening, the garden club, the finances, the growing season, the plans for a greenhouse, and saving seeds. They talk to people ranging in age from two to ninety-four.

"I never thought of that part of town as a good place to live," Jan says to Pat as they get back in the car.

"Makes our neighborhood seem pretty boring, doesn't it?"

"It does. You know how we say our house isn't big enough and we need to move?"

"Yeah."

"These people seem to do just fine with smaller houses. Maybe it's because they spend more time outside with their neighbors."

"Well, they share all that common space, so they aren't cooped up in their houses, separated from their neighbors, like we are."

"Look, Pat. That tour took over an hour. At this rate, we'll be at this all day. We still haven't bought the twins' birthday presents and your sister's expecting us at their birthday party this evening."

Pat is silent.

"Okay, okay. We have plenty of time. We have plenty of time. We have plenty of time. There... home number three. Why don't you read about it?"

Pat smiles. "Okay. This is Maria's home, and she has lots to say:"

> *My family and I rent an apartment in the heart of the city. We like it here because we're close to our activities. We don't need a car, so we don't have those expenses and hassles.*
>
> *I see my neighbors often on the roof. Yes, we have a wonderful roof garden and sitting area on top of our apartment building. You'll see it on the tour.*
>
> *In addition to the produce from our roof garden, we buy other organic foods at the store a few blocks away. Whenever I can, I buy seasonal food produced regionally, so it hasn't traveled long distances.*
>
> *I buy in bulk when possible, because it cuts down on the packaging I consume and is much less expensive than packaged items. I bring my own containers and select what I want from bins.*
>
> *When I'm deciding what products to buy, I consider the natural resources it takes to produce, consume, package, transport, advertise, sell, and dispose of them. Excessive packaging is one of the primary reasons we are losing rain forests around the world.*
>
> *I don't buy soda pop, because it has no nutritional value and uses plastic containers that end up in landfills or on the side of the road, and it takes gas to transport it around the country. I've developed a taste for an alternative—water with some lemon, lime, or other fruit juice in it.*
>
> *I buy from small farms that build sustainable, organic agricultural systems. I shop at a store that stocks food from these farms.*
>
> *When I want meat or other animal products, I buy from farmers who raise the animals humanely. Many people are unaware that the meat and dairy products they eat come from factory farms that torture animals, and*

humans ingest the antibiotics and hormones that the animals receive. My husband is a vegetarian, and I eat only a few animal products.

At my house, I'll offer a list of mailing addresses and Websites of companies that manufacture products using sustainable, humane, ecological procedures and international fair-trade business practices.

"Whoa! She has some strong opinions." Jan raises her eyebrows.

"I think she does have a point about the soda pop. Do you remember when we were growing up, the bottling works on Broad Street? Soda was no more nutritional then, but at least we returned the bottles to a locally-owned business."

"Oh, yeah! I'd forgotten about that. I remember watching through the window as the bottles went around on the conveyer. We took our used bottles to the grocery. We didn't even think about recycling then. They just reused the bottles—which is even better than recycling in my opinion."

Maria is in her kitchen when they arrive and appears to enjoy talking. Someone is asking her about the cost of buying from the store near her home.

Maria says, "I like to support local businesses—it may cost me a few bucks or even a few more pennies, but I like shopping where I know people and they know me."

"How can you afford it?" a man asks.

"How can we afford to gut our communities?" Maria answers. "When I buy from locally-owned businesses, I keep our resources in my community for my children's education, healthcare, transportation, the arts, recreation, and social services. Also, I value personal service. Besides, our local businesses have personality and create our community's unique character and vibrant local business districts."

"She makes some good points," Pat says to Jan. "I know that we waste time and money consuming what we don't need."

"What do we waste money on?"

"Well, DVDs and videos for one. We have a bookcase full of DVDs and videos that we've watched once, maybe twice. We could donate those to the library and then check out or rent movies that we'd like to watch. That's just one place we could get some extra money to put toward shopping with a conscience."

Maria overhears their conversation and adds, "Sustainable living is about more than money. In our building, we have people with both low incomes and high incomes who have simplified their lives and found more time for friends, family, and our community."

As they arrive at the roof garden, Pat exclaims, "Look how beautiful!" Jan agrees.

There are twelve large planters of vegetables and flowers, several birdhouses, three walkways, and benches. There's a wash area, flower boxes, a small greenhouse, and three tables with chairs. Solar panels provide heat and warm water for the greenhouse.

A host, Jerry, talks about the roof garden. "The owners of the building financed this roof garden about five years ago, helped by a grant from the city."

"Why did the city give you a grant?" someone asks.

"There are advantages for the city. Our roof garden absorbs rainfall so we generate less storm-water drainage right after a heavy rain when the city storm sewers are susceptible to flooding. The city is also interested in noise reduction and wildlife habitat."

"How did you convince the owners of the building?"

"They want happy long-term residents who look out for the building. Also, the roof garden is a heat sink. It keeps the building cooler in our hot summers, especially in the city, where there's so much asphalt. "

"Who takes care of the garden?"

"The maintenance crew for the building looks after the basic repairs in exchange for produce and flowers," Jerry says.

"Are you here often?"

"I'm here at least once a week, except when it's really cold. Before we started the garden, I didn't know my neighbors. Now we visit with each other here on the roof as well as in our apartments, and look out for each other."

Back in the car, Jan asks, "What's the next stop?" Pat can't help but notice that she is sounding more enthusiastic.

"This person didn't have as much to write," Pat responds.

> *The housing community I designed speaks for itself. Sulphur Springs Village is built on eighty-four acres of land. The homes are clustered together for community. The majority of the land is undeveloped, left as a wildlife refuge in its natural state.*
>
> *Some features to note:*
>
> - *Streets are curved and narrow to slow traffic.*
> - *Garages are accessible from the backs of the lots. There are paths, but no car access between the fronts of the houses.*
> - *Houses have large front porches that face into a common park-like area for playing and walking.*
> - *Trees, hedges, and house design and placement provide individual privacy. There's no need for fences.*

Jan and Pat stand in the "park" area between two rows of houses. "It's so quiet and peaceful here."

"How would I get to sleep here without those teenage drivers roaring by our house?" Jan jokes. They both laugh and turn their attention to the speaker.

"Coming home relaxes me. I've become so fond of life without constant cars, I try to keep my car in my garage most of the time," the hostess, Trang, explains. "I want to do my part to decrease the country's oil dependency. We live on a bus line and we have bike lanes."

After taking questions from the group, Trang talks more about the advantages of car-less travel. "I've made new friends, many more than when I drove around isolated in my bubble. I met the person I'm dating while riding my bike."

"Sounds easier than using the personal ads," someone quips.

"That's for sure!"

Pat and Jan are on the way to the next home. "You know," Jan says, "a lot of these ideas are good and would actually work for us. Can you read the next description?"

Pat grins and reads the next statement from a homeowner named Bob:

> *About five years ago, my mom passed away at age 58. Her death made me stop and evaluate where I was headed. My parents looked ahead incessantly, viewing each promotion and raise as a stepping stone to the next. They were like many other people, buying or planning a bigger house, a finer car, and so on, and living for later years, planning for the time when they would retire together and travel.*
>
> *Since Mom died, Dad has moved to a smaller place. Cleaning out their big house was a major project. The two of them had accumulated enough stuff to fill it, yet they didn't use or enjoy much of it. Sometimes their stuff owned them, instead of the other way around.*

Jan and Pat walk into Bob's home and sit down to chat with him.

"I was impressed with your story," Pat says, "Is your father still working a lot?"

"Oh, no," Bob answers. "After Mom died, my father researched the retirement process. He found that people who wait until 65 to retire only receive benefits from the company for an average of eighteen months. So he decided to retire early."

"Eighteen months? You mean that the average person who retires at 65 lives only eighteen months after leaving work?" Pat asks.

Bob nods yes. "Sobering, isn't it? I'm going the opposite way, and Dad's cheering me on."

"What opposite way?"

"I've reduced my job to thirty-two hours a week. I've found I have more money left over after I pay my bills than I did three years ago when I was working forty hours."

"What?" Jan exclaims. That's got to be the best advertisement for simplicity—three-day weekends! Just think what I could do with more free time." They all laugh.

"I have a question," Pat says, "What did you mean when you wrote that sometimes our stuff owns us, instead of the other way around?"

"I'll tell you a story about my mother," Bob says. "Mom inherited a very expensive tea service, which she displayed in our living room. She worried that someone would steal it, so she made sure people checked on it and watched her house closely when she was away. She paid extra money to insure it. After Mom died, my father tried to talk me into taking the tea service, because he didn't want the responsibility. I was relieved that my cousin wanted it."

"The more we have, the more we pay," Jan responds. "Vicious cycle. Pat, how much are we paying each month for that storage unit?"

Pat rolls her eyes. "Don't ask."

Bob smiles. "I had a storage unit, too, plus part of my parents'. It wasn't easy letting go of all that stuff. My house was so different—so cluttered. You're welcome to look around."

Back in their car, Jan says, "We didn't have an alarm system until we bought this new car. When we were driving our ten-year-old sedan, we never thought of getting one."

"Hey, Jan, do you think we could live with only one car?"

"Maybe. When we need two cars, we could borrow one from my parents, or our friends, or even rent one."

"Look, there's a toy store where we can stop to get the twins' presents, and it's locally owned. I'll run in so we won't have to make another trip after we get home. We'll save a little gas, too."

"I think we're getting it! " Jan cheers.

As they near their final stop on the tour, Pat reads the statement from Jim: "At my home, I invite you to look into the closets, the cabinets, and the garage. That's where I want to show off that I believe I have enough. My friends and neighbors will be there to help me show you around."

Five people are serving as hosts at Jim's house. Ellen is in the garage, Linda, Jim and Lisa are each in one of the three bedrooms, and Lynn is in the bathroom.

"Obviously, Jim doesn't want us to miss a single cabinet or closet," Jan observes wryly.

They go to the garage first. "This household has one-third of the tools they previously owned. We share tools among neighbors. I have fewer tools stored at my house, too," says Ellen, who lives nearby.

"Nice idea," Pat responds.

"Also, please notice that there might be some brands of tools here that are unfamiliar to you, as well as some other items throughout the house. You might want to note the brand names."

"Why?" a guest asks.

"These are businesses that value sustainability. We buy their products because we want to avoid supporting bad labor practices, efforts to put local firms out of business, poor treatment of animals, and huge executive salaries."

The next stop is a bedroom. Linda encourages the group to approach the closet. "I bought this shirt and these pants at secondhand stores."

"You're kidding! They're really nice."

"I think of buying used items as recycling. Plus, it frees me up. If I end up not liking what I bought, I just donate it back for a tax deduction. If I tear something, I'm less stressed because I didn't spend much on it."

"Sounds like the opposite of Bob's mom's tea service. If we can avoid spending a lot of money, we don't stress out about our purchases," Pat whispers to Jan.

Jim is in the next bedroom, standing next to the closet. He looks like he's waiting for someone to ask the obvious question, and someone does.

"Why is your television in the closet?"

Jim is anxious to answer. "I don't want the television staring at me and talking at me all the time. So, I put it on this cart with rollers and store it out of sight. Occasionally, I like to watch some shows and videos, but most of the time it stays here."

"I could go for that!" A woman looks over at her daughter.

"It's easier to have a positive attitude about life when I'm not constantly absorbing the negative perspectives on most TV programming and news shows," Jim continues. "We have alternatives in this country, but you wouldn't know it by watching mainstream television."

"You probably don't appreciate all the drug commercials," a man states.

Jim laughs. "Yes, it's not enough to get all the gloom, doom, and fear about other people on the television news; now we get bombarded by drug ads telling us all that could be wrong with our own bodies."

The next stop is the bathroom. The group crowds around the medicine cabinet.

Lynn says, "This medicine cabinet used to be filled with all sorts of over-the-counter and prescription drugs. We were often battling colds and allergies, but now

Identical twins Charlotte Behm and Harriet Behm are math and chemistry instructors at Lane Community College. Sustainable living and more details about the Tour of Homes Off the Hierarchy are found in their book, Clueless at the Top *(www.cluelessatthetop.com).*

that we've slowed down, eat better, exercise, do more socializing and take more responsibility for our health, we don't need all those drugs anymore. "

"It sounds like they reject television commercials, but they still like advertising their lifestyles," Jan jokes to Pat.

The last stop on the tour is the closet in the third bedroom. Inside are a small desk and hutch with a computer and accessories.

Lisa explains, "With the newly freed-up space from downsizing, we decided to put a computer in this closet. What do you think?"

Someone answers quickly. "I like it! Some technology speeds up my life. It would be nice not to see a computer screen each time I walk into my house."

Another visitor joins in. "Plenty of people lived well without this technology for thousands of years. I don't believe our technology always moves our society forward. Many times the opposite is true."

On the way home, Jan and Pat decide to make a list of the ideas they could incorporate into their lives. "You know," says Jan, "I'll bet we don't even have to buy a power washer. You remember that woman next door who *doesn't* have a cat as a member of her family?"

"Caroline?"

"Yeah. I've seen her son power washing the moss off her walk. I wonder if we could offer to rake all those leaves in her front yard in exchange for borrowing her power washer for an hour?"

"That's a great idea, Jan!" Pat can't help but hug her. "And how 'bout we stop at the Farmer's Market on the way home and pick up some produce for a salad to bring to the party?"

"And fix the tires on our bikes?"

"And commit to setting aside at least one night a month to have quiet, slow dinner with family or friends."

"Write these down and we can start a list of all the simple things we can do to de-stress our lives."

"Maybe our home can be on the tour in a couple of years!" Pat says looking over the list they have started.

"Our friends won't believe it—'Extreme Lifestyle Makeover,'" Jan says with a smile.

"Well, take the 'before' picture now." They both laugh as they enter the Farmer's Market.

Sustainability at Lane

The Learning Communities Program is working to integrate sustainability themes into its First Year Experience Program. "We want to foster in our students a holistic approach to learning," says program coordinator Anne McGrail. "We also want them to develop a realistic understanding of how they can sustain themselves as they learn about sustainability in the community and environment."

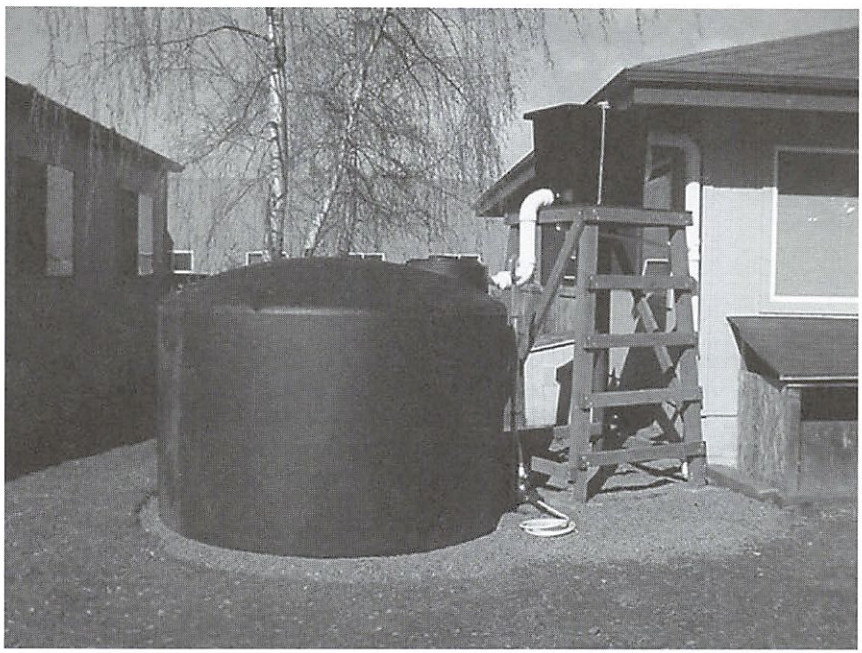
Please see biography and picture on page 125.

Familiar Corners

Sarah L. Ulerick

So tell me
why is it
on the road less traveled
that some corners
seem so familiar?
Surely I have been here before.
Surely these boot prints are mine.
Perhaps this unsightly litter fell
from my hand unknowingly.
This corner, where the buildings
lean toward the center
of the darkened street
and the small trees
struggle for air and light.
I know I have been here before.
This map is not helpful.

Sustainability at Lane



The rainwater harvesting project at Building 20 was installed in 2005 "to conserve water, mitigate stormwater and act as a demonstration," according to the Lane Sustainability program. "Other potential uses include irrigation for the Memorial Garden or flushing toilets."
(Source: LCC Daily, March 1, 2005)

Works in Progress

Sometimes an author submits a piece that addresses a topic or idea the editors feel is timely and provocative, yet may not be fully realized. To foster discussion, deliberation and debate, the Moment publishes these pieces with the understanding that they are not complete. In that spirit of innovation, risk-taking and creativity, we offer these Works in Progress.

Sabbatical Report: Making Organizations More Like Brains

Bob Barber

This paper summarizes research still in progress that began as a sabbatical project at Lane Community College in 2005. I named my project "Making Organizations More Like Brains" because I have long thought—or hoped—there was more than a rhetorical connection between brains and organizations.

What started me in this direction back in 1998 during my Ph.D. program was an observation by organizational theorist Gareth Morgan in his 1986 book, *Images of Organization*. In the context of noting that it is no longer news that organizations need to learn from their experience and that many have established executive-level strategic planning groups of one kind or another to serve as "brains," Morgan observed:

> ...[I]t is far less common to think about organizations *as if they were the brains*, and to see if we can create new forms of organization that disperse brain-like capacities throughout an enterprise, rather than just confine them to special units or parts. This is a challenge for the future...(Morgan 1986: 79, italics added)

Morgan went on to suggest the model of the hologram as a way of applying brain-like design to the organization, a model in which, as with the brain, the whole is encoded in each of the parts; or, to put it another way, just as memory is distributed across the brain rather than located in one part and can be reconstituted from any of its parts, an organization will be better able to self-organize and respond to its environment if each part is a reflection of the whole and thus able to function in direct connection with the local environment. An example might be that each academic department has its own instructional technology specialist. I've always thought this was a line of thinking and organizational design worth pursuing because it would put technology support skills at the most local level and in a context that matched them to the specific discipline.

A few years later I happened upon another book that stimulated my thinking about brains and organizations. *The Genius Within: Discovering the Intelligence of Every Living Thing* by medical doctor Frank Vertosick Jr. He delineates how, if intelligence is defined as

> The general ability to store past experiences and use that acquired knowledge to solve problems..., [then] Intelligence and the living process are one and the same: to live, organisms (or communities of organisms) must absorb information, store it, process it, and develop future strategies based on it...Intelligent beings extract key features

> from past experiences, identify patterns among those features, and later recognize the same patterns in novel situations?...The ability to see old patterns within new ones, even when the patterns differ significantly in other respects, is known as *pattern recognition* and is the cornerstone of biological reasoning...biological reasoning [is] the ability to learn old patterns and extrapolate them to new situations. (Vertosick, 2002: 9)

Vertosick shows how this applies to bacteria colonies (explaining for example how the staph virus learned to resist penicillin very quickly), the human immune system (showing how the body learns to fight off viruses it has never seen before), and the human brain (showing how the brain learns by strengthening the connections between individual neurons in response to experience).

Most interestingly to me, Vertosick shows that the underlying mechanism in all of these instances is that of *network connectivity,* and the result in each case can be called *emergent intelligence.* A network, in the generic sense, is a collection of input/output nodes, each one having two or more possible stable states, in which the output of each node represents the input of other nodes. According to Vertosick, nodes in a network can be mechanical relays, vacuum tubes, transistors, nerve cells, enzyme-catalyzed chemical reactions, bacteria, lymphocytes, and even human beings. In each case, however, the information stored in the network is represented by the connections (or the channels through information flows) between nodes, and learning is represented by changes in those connections that are caused by external experience. Emergent intelligence, on the other hand, is a result of the collective activity among the nodes, activity that no node exhibits on its own.

Introducing the concept of learning by networks opens a whole line of discussion of its own. If there were a discipline-based IT specialist in every academic department, they could learn and teach within the discipline and across disciplines at the same time. Reading Vertosick's book made me start thinking: if emergent intelligence is a property that can be found in such a wide range of networks involving so many types of life, wouldn't it be reasonable to expect that networks of people inside organizations, and maybe even networks of work units inside organizations, also exhibit emergent intelligence since they, or "we" are extensions of that very same life? For example, communication among people seems to be such an elemental aspect of life itself; are the connections created by interpersonal communications, which may strengthen or wane over time, an extension of the neural connections within each of us, which may also strengthen or wane over time? Sociologist Manuel Castells takes this idea to the broadest level in his discussion of the "network society" which he argues is constituted in part by "nodes," each one "the location of strategically important functions that build a series of locality-based activities and organizations around a key function in the network" and are "hierarchically organized according to their relative weight in the net-

work." This hierarchy "may change depending on the evolution of activities processed through the network." (Castells, 2000: 443)

To fully develop the concept of "organizations more like brains" will require a more thorough review of organizational communications and network communications. Perhaps it was Philip Tompkins who provided the foundation for such an approach when he challenged the prevailing view that organizations were the location of communications by asserting that "communication *constitutes* organization…" (Tompkins, 1984: 660). Since then a great deal of work has been done in this area, much of it found in excellent collections such as the *Handbook of Organizational Communication* (Goldhaber & Barnett, Eds. 1988) and *The New Handbook of Organizational Communication* (Jablin & Putnam, Eds. 2001)

Early in my recent research, I came across the following observation by sociologists and organizational theorists Karl Weick and Frances Westley:

> [L]earning is embedded in relationships or relating. By this we mean that learning is not an inherent property of an individual or of an organization, but rather resides in the quality and the nature of the relationship between levels of consciousness within the individual, between individuals, and between the organization and the environment, This learning at the individual level (intrapersonal) and at the organizational level (interpersonal or interorganizational) evolves through a continual process of mutual adjustment. (Weick and Westley, 1996: 446)

Here, I think, is a strong suggestion that models of organization which emphasize the *relationships among people* as the locus of knowledge will help us apply the knowledge about brain structure and functioning to organizational learning and functioning. Collections such as *Theories of Group Behavior* (Mullen and Goethals, Eds., 1987), *Shared Cognition in Organizations: The Management of Knowledge* (Thompson, Levine and Messick, Eds., 1999), and *The Blackwell Handbook of Organizational Learning and Knowledge Management* (Easterby-Smith and Lyles, Eds., 2003) further discuss this idea.

I have spent time exploring a number of literatures, including organization science theory, organization design, organizational learning, complexity and complex adaptive systems, organizational communications, communication networks, power and gender in organizations, connectionist modeling, and potentially relevant modeling software. And actually, slowly, I have come to recognize that the core topic of my study is *evolutionary processes*; that is to say, the evolution of an organization is not unlike the evolution of a person's brain. Each evolves through a combination of variation (in things like outlook and strategies), interaction (communication) and selection (methods for identifying successful strategies and copying or recombining them), in some respects

Key Processes in a Complex Adaptive System like an Organization ↓	Key Processes in the Human Brain ↓
Variation in Types of Agents and Types of Strategies (intended or unintended)	Handling **Variation** in experience. Constrained by the results of evolution over a long time, each brain must be able to respond to and incorporate (learn from) an almost infinite variety of novel and unpredictable environmental signals
Interaction Patterns: communications systems and capabilities, formal and informal networks	Learning through **Interaction Patterns**: Experience is recorded through changes in the "weight" (strength) of signals among neurons and the formation of "neuronal groups.
Methods of **Selection** including ways of attributing credit for success – to determine what goes forward – what is "learned." (e.g. Fitness, or Power)	**Selection:** Neuronal groups of 1000s or 10,000s of neurons, distributed across the whole brain. Emerge as the result of "differential amplification" – the tendency of axons carrying correlated signals to groups together. "What fires together, wires together."
What is the analogy?	**Reentry:** "the ongoing, recursive interchange of parallel signals between reciprocally connected areas of the brain that continually coordinates the activities of these areas across space and time…allowing for a unity of perception and behavior that would otherwise be impossible, given the absence in the brain of a unique computer-like central processor …[Reentry] is the most unique feature of human brains and appears in no known human communication system or network…."--Edelman and Tononi
Result: An Intelligent, Evolving Organization	**Result:** An Intelligent, Evolving Human Brain

Figure 1. *Comparing complex adaptive systems like organizations (following Axelrod and Cohen 2000) and brains (following Edelman and Tononi 2000)*

whether there is intentionality or not. Axelrod and Cohen (2000), Weeks and Galunic (2003) and others discuss this explicitly. Figure 1 illustrates this parallelism.

I've come to think the most important aspect of successful growth and evolution in an organizational context is *variation*; within that, a particularly critical form of variation is variation in mental models—how people look at things. Interestingly, gurus like Peter Senge argue that organizations need people to have the same mental model in order to solve complex problems, but I'm becoming more and more convinced things are not so simple and that to some extent the opposite is true. (For a review of the literature debating the need for shared mental models, see Carley, 1997.)

One critical and often underutilized source of variation in organization is the viewpoints of women and non-white cultural and racial groups. Extensive research has shown that, while "social homogeneity produces cohesion that increases ease of communication, improves predictability of behavior, and fosters relationships of trust and reciprocity…homogeneity (also) inhibits creativity and innovation by restricting diversity…" (see Ibarra, 1992 for a review).

In a critique of the notion that diversity is accomplished only through meeting the requirements of anti-discrimination laws or diversifying staff to match the demographic of customers, Thomas and Ely (1996: 80) argue that "diversity should be understood "as *the varied perspectives and approaches* to work that members of different identity groups bring." (emph. orig.) They further argue that groups outside the mainstream

> …don't just bring with them their 'insider information.' They bring different, important, and competitively relevant knowledge and perspectives about how to actually *do work*—how to design processes, reach goals, frame tasks, create effective teams, communicate ideas, and lead. When allowed to, members of these groups can help companies grow and improve by challenging basic assumptions, strategies, operations, practices, and procedures.

In other words, they are a source of variety in the framework of organizational evolution. The problems are how to get those ideas into the pool from which selection takes place, and how to ensure that discrimination does not prevent them from being eligible for selection.

Thomas and Ely (1996: 86) suggest several preconditions for making a shift to this view of diversity. Among them are that

> Leadership must understand that a diverse workforce will embody different perspectives and approaches to work, and must truly value variety of opinion and insight….and leadership [must be] committed to persevering during the long process of learning and relearning that the new paradigm requires.

This implicitly means recognizing and being willing to deal with the reality that in many organizations, as a whole and in work units, the dominant paradigm is that which most comforts white and male. It is often invisible in organizations, as in society as a whole. This can be true at the top of the organization, as well as in individual work units or teams.

That paradigm can express itself in a variety of ways, which can be combated if there is awareness and commitment to overcoming them. These may operate on the levels of individual behavior and/or organizational culture. One is to recognize that the *time* factor, where the desire not to spend "so much time on process," while laudable on one level, can have the effect of closing out alternative viewpoints. Another is for men, in particular, to recognize or be willing to be told that they often dominate conversations and meetings, to the exclusion of women, even if unconsciously, as an example of overcoming differences between "espoused theories" and their "theories-in-use" (Argyris and Schon 1978). Another is to adopt an "alternative mode of organizing in which nurturance, caring, community, supportiveness, and interrelatedness are fused with individual responsibility to shape organizational experiences," as Mumby and Putnam (1992) put it in describing how "bounded emotionality can be combined with bounded rationality. These are examples of changes in individual behavior and organizational culture that have the potential of bringing a wider variety of experiences and ideas into organizational life.

Creating the conditions for women to find their full voice in organizational contexts can bridge the individual and the cultural with structural changes. For example self-organizing groups of mostly women support staff in a higher education environment can be formally brought into governance structures. Norms of communication-based relations among women (see Belenky, Clinchy, Goldberger and Tarule, Eds. 1986; and Goldberger, Tarule, Clinchy and Belenky, Eds. 1996 for discussion) can become the basis for new forms of cross-departmental interaction to help counter the fragmentation of isolated work groups, again making new ideas and experiences available for selection as the institution evolves. Communications are not just a method for learning but also a method of introducing variation into work groups and units. This is why systems like email and Banner are so much more than just technologies. And why the paradigms and styles of communication often practiced by women and non-white cultural and racial groups are so critical to organizational evolution (see for example, Ashcraft and Allen, 2003; Belenky, Clinchy, Goldberger and Tarule, Eds. 1986; and Goldberger, Tarule, Clinchy and Belenky, Eds. 1996).

Likewise, diversity teams and units can be positioned in critical communications networks and decision-making matrices. And having a discipline-based IT specialist in every academic department could promote learning and variation across all the departments.

(Interestingly, one brain process which as yet seems to have no socio-organizational parallel, is "reentry," which Edelman and Tononi (2000) call "the ongoing, recursive interchange of parallel signals between reciprocally connected areas of the brain that continually coordinates the activities of these areas across space and time...allowing for a unity of perception and behavior that would otherwise be impossible, given the absence in the brain of a unique computer-like central processor.")

One more useful concept about how the brain works is suggested by philosopher Daniel Dennett, who argues that because the brain experiences a constantly changing environment, there is never such a thing as a "final draft" of experience or perception, but only "multiple drafts" that are registered in a continuous stream, milliseconds apart (Dennett, 1991). If you perceive organizations as being not static objects external to the people in them, but rather as socially constructed meanings, I think this is a useful way of describing them as well. There is never a "final draft" of organizational experience, only "multiple drafts" reflecting (and subsequently influencing) the constantly changing and evolving perception, experience, and action of those in them. This perspective is supported by Weick and Roberts (1993: 369) in their research into how work teams made of "simple units" that are "richly connected" can perform complex tasks as if they had a single "collective" mind with properties that are "not contained fully in the representation of any one person nor are they finalized at any one moment in time."

To summarize, complex evolutionary processes are at work in an organization whether or not its leadership or members recognize them. Like the processes a brain uses to absorb and respond to external experience, these processes cut across levels and boundaries, and the connections which they create can be reinforced or not. Leaders can tap into the collective knowledge and experience of organization members by helping build an environment that encourages variation in thinking, that promotes communication and interaction, and that seeks to ensure successful ideas and strategies are identified and copied or recombined on the basis of fitness rather than through the arbitrary exercise of power.

A final complication that will need to be unraveled before completing this attempt to consider the parallels between brains and organizations is the meaning of the word "like." If we want to make organizations more "like" brains, do we mean in the sense of a broad metaphor, or in the sense of an analogy, or in the sense of using the brain to build a precise model for organizational design? (See, for example, Mitchell, 1993, and for a critique, Rosenhead, 1998.) I can't say what level will ultimately prove most useful. But I do think the parallel is more than rhetorical.

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I Dreamed Me a Dream

Excerpts from a Justice Chess Dream Sequence

Mark Harris

There was a time when situations at Lane would keep me up late at night, tossin', turnin', takin' on otha' peoples problems as if dey wuz ma' own. That of course is an occupational hazard in my line of work. Thinkin' ways out of those problems is an occupational gift. Such gifts often come, as they say, out of the blue.

She was explaining to him about constructs of oppression. "You see things in such black and white terms. If you are going to change things by waging a justice battle, you need a way of simulating possible moves and countermoves in advance. If your battlefield is an organization, then there are rules of play."

"Yeah," he said, "but if they don't play by the rules, if cheaters are in fact protected, the old thing about 'cheaters never prosper' seems as real as Santa Claus or the Tooth Fairy."

"The ways they can cheat are predictable. Gauge your opponents' strengths and vulnerabilities. Gauge whether your allies will assist you or betray you, and develop a prescient but practical response for both."

"Seems like a dream come true."

"Well at least a dream, which itself hints of possibilities to be realized, if not actual events somewhere else in existence." She gestured and there was a table with a black and white chessboard with plastic, ebony, and antique ivory chess pieces on it. It looked thrown together as if a teenager had collected various pieces from various childhood sets to make a complete set.

She was right about the black, white, and grayscale thinking though— thinking it's all about race and the only relevant races were black and white. An occupational hazard and predictable result of being raised by southern blacks, and growing up in the Civil Rights and Black Power movements.

"Well of course you think of it that way," she said. "It's often the way you are most frequently hurt, because it's your most visible identifier. So think of this as an upgrade from a 256 grayscale monitor to a 64 million color machine. Right here, right now, I'm helping you with your sums in the Cosmic Arithmetic. Solve for *X* the unknown path to Unity. You need a way of conceptualizing ideas into action. How do you sustain a diversity effort over time, against known and unknown adversaries, some obvious, some hidden?"

In the background Lonnie Liston Smith's "Meditations" began playing.

"Right, that's exactly it," he nodded. "It's easy to see why an adversary opposes you. But what about when a professed ally betrays you? What's the math on that? What's the percentage in breaking trust?"

"As you know," she said, "*Al-Gebra* means 'The Mending.' The image ol' Hasan ibn Jabr wanted us to think about was a broken stick on either side of the equal sign. The stick was from one tree, and the equation was a way of showing the unity behind the unknowns."

"Yes, that's for algebra, which resides in the domain of mathematics, which itself is not often given to conflict resolution in the real world," he said. "In fact, it causes a lot of conflict because it's not always used to unite people."

"Well, come down with me on this…The chessboard is an equation of sorts. Though math describes the real world, it is still a construct. Like the Pythagorean Theorem. Artificial. Plastic. Fluid like music. Open to improvisation if you know the basic rules."

She stretched the white queen like a piece of silly putty, stretched it across her face and it molded there. She was transformed into a full-size chess piece molded to her form. The background shifted to a day at the beach they'd had a year ago, with the wooden chess pieces on the blanket in the sand. "You can tell what a piece is made of by its nature, whether it acts with genuine wisdom or artifice, and where it came from. Ebony and ivory were once vegetable and animal from the same place—Africa, or the Atlantic. The Mexican onyx pieces, though black and white, are living stone from that land. Plastic of course is generic American, far removed, transplanted, immigrated and alienated from its living native roots. To become a white American you have to give up your European ethnicity, forget that larger past, and join the future. So if they are an ethnically assimilated (ethnicity erased) white American, they are plastic. Non-Assimilated Ally, Ivory."

"Wait a minute. You're saying that a person who is actualizing a hidden cultural potential that makes them an ally shows up as a natural material, rather than plastic?"

"Yes, calm yourself," she said. "Just because they are a potential ally does not mean they will be an ally all the time, for everything. Don't let appearances fool you. This is simply an illustration within the simulation, so that you can begin to assess the piece before you, or a piece that occupies a strategic square. Further, this feature is extended to every piece and place where race is a factor. Thus assimilated black, black plastic, rather than black ebony; Latino, plastic or red onyx; Native, plastic or pipestone; Asian, plastic or one of the classic Chinese elements: wood, fire, earth, metal, water; people who are mixed show up with a shifting moiré of materials depending on which may be dominant."

"Whoa, lot to remember."

"It'll become clear to you as you play more and incorporate those cultural elements into your understanding, in a process called acculturation. In acculturation, you

become accustomed to utilizing difference, much like a person's dexterity with chopsticks, or acquiring a taste for sea urchin or octopus sushi, or Thai four-star spicy squid. Eventually it becomes part of your intuition, the means by which you coordinate and assess data coming from other than the five senses. Intuition can be used to solve complex problems that do not submit readily to logical solutions. On the solution side of the equation-problem, you see the answer. Although you might have arrived by a quantum leap, you at least understand how you got there."

She peeled the white queen overlay off and it became a chess piece again as she put it back.

Subject-object relationships restored except they were still on the beach.

"See," she said, "ya got rules for every human difference: gender, sex, race, class, ability, sexual orientation. The usual PC definition of diversity. Then you got invisible rules for both the visible and invisible traits. These underlie the conditions and rules of the game, like the actual grid of sixty-five squares."

"Don't you mean sixty-four squares?" he said.

"The sixty-fifth square is the entire gestalt of the game, ultimately of every game ever played anywhere, not only its history, but alternate possibilities stretching into the future. Of necessity, the simplest way to represent it is as a square, but it is actually one face of a hypercube-tesseract. It's a level of play one can attain through rote practice, but you can arrive there by intuition. The trick of course is staying there, and remaining there without being rattled by developments in your personal game. But you're not there yet, so let's get back to basics."

A firefly of movement, resolved into a tiny tool which alternated between magnifying glass and eyedropper, embedded text appearing over the scene... Reality Photoshop.

"Click on PC," she said. A little flowing water logo formed, symbolizing a shibboleth. "When a particular piece uses a shibboleth, you see variously the original contextual definition in the original language, how the meaning has shifted in contemporary use, and how the user is giving meaning to the word and how it shapes their world view." As she focused her narration on a particular piece, his point of view shifted into the point of view of the piece, and he could read the rules, as if it were a chess tutorial. "In Justice Chess," she said, "a pawn can refer to how you see yourself, or how others choose to see you. If you as a pawn have ever beaten a queen or king, you retain their resolve, and royal reserve, dignity and wisdom. Shibboleth mode also can tell you what academic discipline a person was trained in. You can click on their eyeglasses or around their brain to see in detail what reality filters are in operation." She moved the cursor, which shifted between the shibboleth stream, inset with eyeglasses, or a brain icon.

"So the shibboleths are strange attractors shaping behavior?" he asked.

"Right. Except, as you know by the use of the term, the fact that it looks random and chaotic does not mean there isn't an underlying order driving it. Rather than a butterfly effect, recursive through time, think of it as a dragonfly effect — the random-seeming patrol flight which returns to the same perch."

He frowned at the image, then recalled, "Oh right, shibboleths by their nature are about defending territory, or access to what feeds or sustains you. A dragonfly defends its territory against other dragonflies. So I would tend to statements like: Not all conservatives are racists, but all Klansmen are conservatives."

"A position like that might prevent you from deliberately making a Mafundi Lake maneuver." She shifted their point of view from the beach to an overhead view of an Alabama jail. "Mafundi Lake, a Black Panther community organizer, was seen as a helpless pawn, placed alone overnight in a cell with twenty Klansmen, with the clear intention that he be dead or injured. In the morning, he was uninjured and he had found common cause enough to organize the Klansmen. You can see the predatory racist mindset of the law enforcement community and the Klansmen, many of whom were and still are the same people. They see him as uppity, a troublemaker, and helpless. He sees himself as a powerful organizer, and this is just one more tough room."

"So he was an African king, surrounded by pawns, or hostile knights, about to be taken, when he convinced them to unite against all their history and beliefs, through sheer force of will, personality, or what?" he asked. "It seems like that hand of history is a lot to overcome."

"You might say the Afrocentric black king thinks that white supremacy trumps everything," she said. "That he could logically feel, being surrounded by white male supremacists, that there is no hope. That, even given his so-called superior male gender, white women can trump him in influence. Even if the venue is a college rather than a prison."

And he saw that. "So he sees being white as trumping being male."

"And it does, *when* it does. Because it doesn't always," she said. "The feminist white queen might think patriarchy trumps everything, and that sexism is more important than racism."

He swayed as a woman's sensorium swept over him. Seeing from that point of view, he observed that the queen wore a medallion—the 1970s Venus with a clenched fist in the circle. Then the fist morphed in response to his thought to a portrait of Angela Davis. "A black queen would see both racism and sexism together, and if she had come up the social ladder, a bit of classism too," he observed. "Angela would say its an overdose of capitalism."

She nodded and the chessboard grew to the size of them, the individual pieces six feet tall. "Now what if the bishop was actually a Zen abbess." A mirror appeared,

and he was a Japanese woman with a clean-shaven head. "A Hebrew Israelite Cohen." Black, dreadlocked and male.

Shifting back to a white female, she said, "Suppose the queen's a dyke, the white queen rippling with rainbows predominating in lavender. Then not only is it sexism, but homophobia, or heterosexism if you prefer."

"Do you mean dyke in its pejorative sense, or in the sense of epithet reclaimed as a term of shared affectionate pride?" he quipped, reading the shibboleth history.

Morphing into Audre Lorde, she frowned and said, "Negro, *puh-leeze!* Stickin' yo' finger in that dike won't stop the flood. Can you swim?"

"Okay, fine, I'll go there and keep my head above water," he rejoined. "What if she's more femme than butch? Or, B.eing I.n T.otal C.ontrol of H.erself (B.I.T.C.H.), beyond such prosaic labels?"

"She might think that her power as a white woman might be checkmated by a black male's heterosexism, because her subordination might serve the general aims of heterosexual white male good ol' boy supremacy by 'keeping her lesbian ass in its place.' Assuming of course that's she's out at all, or closeted, depending on the organizational climate of acceptance. It would show up in various ways: coloration, clothing, language. It's only relevant where it's relevant, and referred to when you can refer to it. If she's in a position of power, you might wonder why doesn't she just put the rednecks in check — in the interests of simple fairness, if not adherence to diversity solidarity. Is she afraid? Or what? In other words, a gay white man or a lesbian in a position of power in a good ol' boys network can act as a gatekeeper, maintaining racial hegemony."

"So are you saying then that race still trumps?" he asked.

"You are mixing game metaphors," she replied. "The term would be 'checked.' But yes, if the underlying hidden history is stacked that way, then it shouldn't be surprising. All that goes into your calculus in planning your moves."

He saw a variety of options displayed on the game board.

"They might not maintain that position out of a sense of malice or racial superiority," she said, "but for something as prosaic as partner benefits or a paycheck. Your enemy may not be adversarial because of malice, but the net effect is the same. You could accurately define and identify conditions and instances of institutional racism, but there would be very little percentage in actually saying anything, because you wouldn't be believed, because they don't have the benefit of your perception, even when its as obvious as an epithet offered against a supervisor's obvious characteristic like race, gender, or class."

"So just because someone doesn't like your diversity designer label, are you stuck with being trapped in their prejudicial corner and constrained from acting?"

"Not at all, as you saw with the Mafundi maneuver. But you see, if there is a lack of congruence between what we say we'll do and what we actually do, then, when

we attempt to match our words and actions, our actions are resisted. A white subordinate's use of the epithet 'uppity nigger' in answer to lawful instructions from a supervisor, which is not met with immediate termination or at least discipline by the organization, in effect rewards that subordinate's action," she said. "Such actions undermine workplace productivity, which is likely all the 'uppity' supervisor was attempting to do: increase productivity. Even if it's white employees openly making disparaging remarks about non-white employees, comments which go uninterrupted or unchallenged by other employees or management, it contributes to the same type of climate.

She continued: "If our white female is at all 'uppity' (defined as the sin of considering yourself equal to a white, privileged, male good ol' boy), she opens herself to attack. As the game board is stacked to play different characteristics against each other in a divide and conquer manner, she would definitely be resisted if she persisted towards congruence with justice. So, for her to sustain that effort towards congruence, she would have to receive support throughout the organization, or be a tough cookie indeed. If she were lesbian, could she use her femme appearance as a tactical advantage against the good ol' boys?"

"Hmm," he said. "Like we're still dealing on a superficial appearance level."

"Well for people who are only trained to see the surface cosmetic differences and not through them, appearance is a viable tactic," she countered.

He thought to himself, "And on another tip, fear of the potentially angry, possibly violent, ranting black man...would cause...But why go there; he'd just be isolated. Any attempt to tell what's going on with regard to race...Well anyway, sometimes the race card's a joker, sometimes its an ace."

"Of course," she said as if he'd spoken aloud. "Who minted the deck anyway? But let's stick to chess, not poker. If the black queen is hetero, would her assertive leadership style be accepted and respected equally among white men and women in a white organization?"

"More likely," he said, "dey say under they bref,' 'Nigra B.I.T.C.H.' And if she's attractive by their standards then they say 'Barbie' and still dog her."

"If she's a lesbian, would she be accepted as a white lesbian could be?" she asked. "Could she be out?"

"Does white supremacy allow for white gays and lesbians to be more accepted when they come out than gays and lesbians of color?" he answered.

"I think you begin to get the picture." She handed him a lit Indian head meerschaum pipe. "Put this in your Justice Chess pipe and smoke it." It was his homemade kinikinnick: *uva ursi*, madrone bark and berries, mullein, mint. He hit on it in thought, blowing smoke rings, one through the other. The last one she snagged on her finger. It solidified and she changed it into a crown and put it on a pawn, which morphed into a queen. Then the queen morphed into a knight, but it was an Indian

Mark Harris *is a xenophilic congenital drapetomaniac laboring under the sincere delusion that systemic discrimination is an endemic co-occurring disorder caused by a memetic infection, from which we can nonetheless recover. He is trying to get back to where we should be going: Umoja, Alaba, Txai, Mexica Tawey, Mitaknye Oyasin. He hopes you will, too. Meanwhile, he develops survival strategies for being a raisin in a sea of buttermilk.*

contrary woman, riding a horse, then a bison, and she was fighting the cavalry. Then La Llorona fighting Cortez. Boaddicca fighting the Romans. Nzingha fighting the Portuguese, Tubman fighting the Confederates.

Her voice came from behind him. "Would you believe Grandpa David of the Hopi or Geronimo of the Apache? Cesar Chavez or Fidel Castro? What if 'Cablinasian' Tiger Woods was openly a drag queen? What if Little Richard was still closeted? David Duke or Patty Duke?" With each name the colors and motivations changed… most likely routes and courses of action plotted, run as simulations, rerun with variations. Then the various other pieces become pawns in an elaborate game…when really if they just focused on helping each other in getting across the board, they could all become whatever they desired.

"Yeah, but only if they are pawns first," he said. Then, "That almost sounds like being a good Christian will get you into heaven or something."

"Something," she agreed. "But here, look—there is a hidden layer. Each of the pieces has a history, a warrior tradition, a way of service, its own code of honor, its own seduction, turn-ons, turn-offs, straight-laced old-fashioned orthodoxy. Knowing this history, like knowing the history of chess, helps you understand the development of the game and the development of your particular game in your particular setting. What if you could recast reality from the point of view of each one? What if each one defined and changed the rules of the game, or cheated? If the rules changed, or cheating becomes rampant, which way will cheating take the game and how do you counter it? Rather than figure right or wrong, just accept the game. Don't hate the player; hate the game, as they say."

Sustainability at Lane

Supplemental Instruction (SI) is an academic assistance program that utilizes regularly scheduled peer- or tutor-led study sessions specifically linked to targeted, high-risk courses. Its purpose is to improve grades and reduce attrition in historically difficult classes. Begun at the University of Missouri-Kansas City in 1973, SI has been named an Exemplary Educational Program by the U.S. Department of Education. Although Lane does not have specific SI programs, there are services in place that reflect parts of the model: EL 113 Content-Specific Study Skills, study groups in math and science, Women in Transition and Women's Studies discussion groups.
(Source: LCC Daily, May 12, 2005)

Fungi Fun

Peter Jensen & Tom Long

Editors' Note: The poetry of science can manifest itself in the most interesting ways—compare these charts to the authors' interpretations on the following pages.

Common Name	Scientific Name	Translated Scientific Name
Witches Butter	Tremella mesenterica	A Little Trembling from the Middle Intestine
Dead Man's Foot	Pisolithus tinctorius	Dyable Stone Pea
Slimy Stinkhorn	Phallus impudicus	Shameless Phallus
Dead Man's Hand	Scleroderma geaster	Hand Skin of the Belly
Honey Mushroom	Armillariella mellea	Small Narrow Ring of Honey
Big Foot Puke	Morchella esculenta	Very Good Edible Fungus
Fluted Black Elf Saddle	Helvella esculenta	Aromatic Herb in a Full Pit
Big Laughing Mushroom	Gymnopilus spetabilis	Wonderful Naked Cap
Rabbit Ears	Otidea leporina	Rabbit Ears
Sweat Producing Clitocybe	Clitocybe dealbata	Slope-headed Whitewasher
Prince	Agaricus augustus	Majestic Mushroom
Jellied Bird Nest Fungus	Nidula candida	Shiney Little Nest
Donkeys Ears	Otidea onotica	Donkeys Ears
Jelly Babies	Leotia lubrica	Smooth and Slippery
Octopus Stinkhorn	Clathrus archeri	Arched Lattice
Pink Bottoms	Agaricus campestris	Meadow Mushroom
Varnished Conk	Ganoderma oregonense	Shiny-skinned Oregonian
Tinder Conk	Fomes fomentarius	Tinder Tinder
Velvet Foot	Flammulina velutipes	Velvet Flames
Caterpillar Fungus	Cordyceps ravenelii	Ravenel's Swelling Head

Common Name	Scientific Name	Translated Scientific Name
Common Conehead	Conocybe cyanopus	Deep Blue Conehead
King Bolete	Boletus edulis	Superior Edible Mushroom
Fly Agaric	Amanita muscaria	Fly Mushroom
Orange Peel Fungus	Aleuria aurantia	Orange Wheat Flour
Gemmed Puffball	Lycoperdon perlatum	Enduring Wolf Fart
Oregon White Truffle	Tuber gibbosum	Completely Bumpy Tuber
Shaggy Mane	Coprinus comatus	Hairy Dung
Chanterelle	Cantharellus cibarius	Little Drinking Cup of Food
White Chanterelle	Cantharellus subalbicans	Almost White Little Drinking Cup
Turkey Tail	Trametes versicolor	One Who is Multicolored
Cauliflower Mushroom	Sparassis crispa	Curly, Crisped, and Torn to Pieces
Short-Stemmed Russula	Russula brevipes	Short Little Russian
Magic Mushroom	Psilocybe mexicana	Naked-headed Mexican
Black Morel	Morchella angusticeps	Small, Narrow Edible Fungus
Fairy Ring Mushroom	Marasmius oreades	Withered Mountain Nymphs
Shaggy Parosol	Lepiota rachodes	Scaly and Shaggy
Black Mushroom (Shitake)	Lentinus edodes	Pliable, Tenacious Food
Chicken of the Woods	Laetiporus sulphureus	Bright, Gay Pores in a Sulfer Robe
Pig's Trotter	Hydnum repandum	Mushroom Folded Backwards
Conifer Coral	Hericium abietis	Fir Hedgehog
Hen of the Woods	Grifola frondosa	Leafy Braided Fungus

'Shroom Names & Fungi Fun

Peter Jensen

Orange Witch's Butter is smeared
On Dead Man's Foot in the feet
Of dying Incense Cedar's roots.
Slimy Stinkhorn pokes through
Dune sand while Earth Star
Unfolds on forest floor.
Dead Man's Hand reaches up
For your Honey Mushroom.
The Evil One stinks
Like Big Foot Puke,
And Fluted Black Elf Saddle
Will kill you quicker
Than Wolf's Milk. Your
Big Laughing Mushroom
Makes room for Rabbit's Ears
And produces fears about
Sweat Producing Clitocybe.
Will The Prince defeat
Jellied Bird's Nest Fungus,
Or will Donkey Ears
Grow over Jelly Babies,
Octopus Stinkhorn, and bare
Pink Bottoms, which is a Pasture
Mushroom? All these fun names
Grow from the ground and rot this fall.

'Shroom Names & Fungi Fun Adapted

Tom Long

A Little Trembling from the middle intestine is smeared
On Colored Stone Pea in the feet
Of dying Incense Cedar's roots.
Shameless Phallus pokes through
Dune sand while Vaulted Belly
Unfolds on forest floor.
Hand Skin of the Belly reaches up
For your Small narrow ring of Honey.
The Evil One smells
Like A Very Good Edible Mushroom,
And Odiferous Herb in a Big Hole
Will kill you quicker
Than Wolf's Milk. Your
Wonderful Naked Cap
Makes room for Rabbit's Ears
And produces fears about
Slope Headed Whitewasher.
Will Majestic Mushroom defeat
Shiny Little Nest,
Or will Donkey Ears
Grow over Smooth and Slippery,
Arched Lattice, and bare
Meadow Mushrooms, which is a Pasture
Mushroom? All these fun names
Grow from the ground and rot this fall.

Adaptation from common names to English translation of scientific names by Tom Long.

Tom Long *studied mushrooms with Freeman Rowe at Lane Community College a number of years ago. He has no training in Latin, except for the use of the scientific, or Latin, names of mushrooms. His response to* ***Peter Jensen's*** *(see his bio on p. 19) poem is an outcome of his preference to use the scientific names of the mushrooms, while Peter wants to use the common names. One of his comments was that the common names were more interesting, so he thought that there were some very interesting options if they translated from the scientific names. And this was the result from his limited resources.*

Dan Armstrong *received his Ph.D. from Indiana University and taught at the University of Arizona, Oakland University, and Oregon State University before coming in 1991 to Lane Community College, where he teaches film studies and composition. Most of his research and publications over the years has been in film studies, but his passion is for poetry.*

Work Song

Dan Armstrong

For Julie

Circling the birthing room
pacing in the ancient pain
laboring with your mother load
you startle us, then soothe

as we below
gathering at the table
for quiet conversation
or passing one another
in our circling paths
from room to room

listen to
your day-long work song
your labor of love
measuring by your breathy moans
your place on the scale of pain
as note by note
your mothering arias rise

telling us
how far he has dropped
how urgent his coming
how hard your work
until you reach deep down
for sounds that say "Soon!"

Midwife and assistant
hurry up and down the stairs
bringing hot water and towels
and our hopes
back up to you

as we
hearing the signal pitch
of your song that says "Now!"
move as metal to magnet
to the mouth of the stairs
leading up to you
but closer than if there

and huddle together
under the Roosevelt elk
standing in the tawny grass
on the wall behind
straining

to hear a word
a cry
anything
to tell us
he has arrived

he has swum
from the watery world
of your womb
into our common air.

Love's labor song
long last
sung.

Sustainability at Lane

Here on campus, we have always strived for reduced water use. All of our athletic fields are irrigated with our lagoon water during the summer. We allow our inner campus lawns to go semi-dormant during the summer. I have been reducing the watering of the plant beds each year. This year, established beds in the shade will be watered every 7 to 10 days. Established beds in the full sun will be watered every 5 to 7 days. Our raised beds require more water. Because the raised beds are shallow, surrounded by concrete, and well established, the plants begin to show water stress after 3 days.

"From the Grounds Up," an occasional e-mail report from Lane groundskeeper Frank Drengacz (April 2005)

If you get right down to it, sustainability is really the study of the interconnectedness of all things.

– Barbara Lither

U.S. Environmental Protection Agency

Community College Moment

Call for Work

Community College Moment is a faculty-led journal that offers a forum for high quality progressive works that reflect a new vision of scholarship at the intersection of academic, activist and community interests.

We invite articles, interviews, photographs, artwork, academic research and creative writing, and other original work relevant to the community college mission and environment. Submissions should provoke meaningful, progressive inquiry that will appeal on a local and/or national level to an educated, but not specialized, audience. Each issue of the *Moment* may be thematically organized, all or in part, providing multiple perspectives on a given topic. Past special sections have included Sustainability, Diversity, and Peace.

The *Moment* is open to a variety of submission formats. Examples include:

- Full-length articles (5000 words maximum; work in languages other than English welcome)
- Collaborative projects
- Web-based projects
- Works-in-progress (provocative ideas not fully worked out)
- Collages of your work over time
- Plans and reflections on innovative pedagogies
- Artworks of any kind: poetry, paintings, sculpture and choreographic projects (which we would feature through photographs)
- Fiction and Poetry (relevant to the *Moment* audience)
- Sabbatical Research Summaries
- Queries welcome

We also invite submissions of short (300-500 word) reviews/essays that offer insight on books and other materials relevant to our audience.

The Moment is published at Lane Community College in April of each year. Submissions are accepted year-round. Check our website for full submission guidelines and information on special section titles and deadlines.

Community College Moment, Building 20, Lane Community College, 4000 E. 30th Avenue, Eugene, OR 97405.

http://teach.lanecc.edu/ccm/

Sources for Lane Sustainability Index: 1-3 LCC Energy Use Tracking and Feedback Report 2004-05; **4** "Lane to Diversity" newsletter; **5** American Lung Association; **6-9** LCC Sustainability Program; **10** LCC News Release, Nov. 2005; **11-13** LCC Sustainability Program website; **14-21** LCC Sustainability Program; **22-24** LCC News Release, Nov. 2005; **25** LCC Sustainability Program; **26** LCC News Release, Nov. 2005

The Moment Sustainability Index

Amount Lane paid in 2004-05 for 150,363,000,000 btu of natural gas: $394,621

Lane's total 2004-05 energy cost: $1,226,766

Estimated amount Lane could save in one year by turning off lights, monitors and other electronics when not in use: $122,000

Percent of U.S. toxic waste dumps that do not comply with EPA regulations found in predominately African-American and Latino communities: 75

Number of U.S. premature deaths annually attributed to pollution from power plants: 24,000

Tons of CO_2 emissions generated in 2004-05 at Lane: 2,950

Estimated pounds per building square foot: 5

Energy saved by recycling one ton of aluminum cans, in gallons of gasoline: 716

Gallons of gasoline Lane saved in 2004-05 by recycling aluminum cans: 195

Percentage of energy used at Lane provided by wind: 10

Pounds of pesticide used in 1999 on Lane campus: 650

Pounds used in 2003: 9

Energy saved by recycling 100 tons of newspaper, in gallons of gasoline: 5,811

Gallons of gasoline Lane saved in 2004-05 by recycling newspaper: 511

Tons of paper collected in 1988, when Lane began recycling: 5

Tons of material recycled or reused in 2004-05 at Lane: 458

Year that Lane started composting kitchen scraps in Food Services: 2004

Amount of compost produced for use on campus so far, in tons: 7

Gallons of waste oil produced annually by Lane Food Services kitchen: 900

Gallons from this forecasted to be converted into biodiesel fuel by proposed Lane program: 650

Size of drums currently storing used kitchen grease to be developed into biodiesel fuel: 55

Number of colleges and universities that have signed the Talloires Declaration of sustainable practices: 300

Lane's rank in Oregon community colleges that signed the Talloires: 1

Percentage of all Lane waste currently recycled or reused: 57

Number of courses offered at Lane that address sustainability issues: 30

Sources listed on back inside cover.