

**Date:** Wed, 11 Apr 2007 18:39:28 -0400 [04/11/2007 06:39:28 PM EDT]

**From:** ["Pflaster, Daniel S"](#)

The clean silverware is at the front of the food line at the Atrium cafeteria. This forces the customers to take silverware before they know what they will get to eat. This inefficient design results in customers taking silverware they do not need for their meal and wastes energy cleaning already clean, unused silverware.

I suggested to the Atrium supervisor that she put the silverware after the food so people could take only the necessary silverware. The supervisor's response was that the silverware holder is outdated and also holds the trays. Since the trays are needed at the front of the food line, she could not put them (and the silverware) after the food.

The tray and silverware holder is the same one that was here when I was a student in 1988. It is time to update and stop wasting natural resources and energy cleaning unused silverware.

The response from the Atrium supervisor is not consistent with UVM's aspiration to be *the* environmental university.

Please let me know what, if anything, can be done to stop the waste and change the environmentally unfriendly thinking at the Atrium.

Thank you,  
Dan Pflaster

**Date:** Wed, 11 Apr 2007 22:43:50 -0400 [04/11/2007 10:43:50 PM EDT]

**From:** [Chris Francklyn](#)

Dear Drs. Fogel and Hughes,

Here is my response to your challenge. I wish you success in this effort, because the timing is very appropriate.

Chris Francklyn

Attached file:

**Preamble:**

In the summer of 1979, I graduated from the University of California at Santa Barbara with a Bachelor's degree in Biochemistry. The United States was in the midst of the second major energy crisis of the decade, brought on by a steep rise in energy prices owing a decrease in worldwide petroleum supplies following on the heels of the Iranian Revolution. I went to work for a small start-up company that had been founded by a former Hawaiian sugar cane plantation foreman who had relocated to California, and had dreams of starting a company to convert agricultural wastes into ethanol, and then on to gasoline. I spent three years with the company, and developed a process for extracting vitamins and other useful compounds from almond shells, rice straw, and other natural products. But as Ronald Reagan assumed the office of the Presidency in the beginning of 1981, and world oil prices began to re-stabilize, the national will to develop alternative energy sources faltered. The company was bought in a leveraged buy-out, our pilot factory dismantled for the tax benefits, and I retreated to graduate school...

It is now twenty eight years later. And as Yogi Berra may have said, "It's déjà vu all over again". Politicians far and wide extol the virtues of ethanol as a motor fuel, and even our oil industry captive Chief Executive makes speeches on the value of....switch grass. Will we get it right this time?

My point in sharing this little personal historical narrative is that the timing couldn't be better for the President and Provost's initiative for UVM's future: "Leading by Design for a Sustainable and Desirable Future"

**The Take Home**

**Simply put, I think UVM has an opportunity to step forward as a leading intellectual institution dedicated to devising solutions to the challenges posed by global warming, as well as the broader trend toward globalization itself. The "greenness" embedded in that approach, and its connection to the academic process itself (c.f., John Dewey) are core to our values as an institution, and are even embedded in our name: *verdis*. It's time we told the world about it, and embraced the idea that preparing our students for a changing world – in all senses of the word- is not just everything, it's the only thing.**

## **The Details**

OK, so your survey asks a lot of question about how the University would look: building design, transportation, and many other things. Those are all good questions, but I would prefer to let others address them for now.

Instead, I would like to offer a few suggests for how we might marry the academic work of our scholars to the needs, goals, and aspirations of our students. And beyond the walls of the school, how we might address the needs of the state and the nation at large.

Here are a few broad brush strokes:

1. As the planet heats up, the challenge for all organisms, whether plant, animal, or human, is to adapt. A few of the broader trends that we will almost certainly see are a nation that is hotter, drier, and more unpredictable with respect to weather. A critical goal that our science will need to address is helping our farmers with modified food crops that can withstand the stresses caused by global warming. Can we save the maple tree before its range is pushed ever northward into Canada? Can our water scientists help predict both local and global water trends, as we move to an era where water becomes the new petroleum? Can the members of our animal science department begin to think about developing new strains of cattle that have sustainable and non-hormone dependent milk production, or produce beef that does not exacerbate the nation's dietary problems? What crops can we encourage and support our local farmers to grow that will free them from the trap of a commodity (milk) that corporate 'farmers' from California, Texas, and other states can produce much more cheaply?
2. In the College of Medicine, we have at least four or five strategic and programmatic target areas: Cardiovascular Biology and disease, Cancer, Biology of Lung, Neurosciences, and more recently, Infectious Diseases. These focal areas are all forward looking, because they speak to two important trends. In Vermont, a population that is aging will increasingly be faced with the challenges of cancer and cardiovascular disease. To the extent that we can make progress towards understanding the molecular bases of these diseases, and come up with ways of moving that science into the clinic, we will serve our state and our nation. As global warming progresses, diseases that were once confined to equator will move northward, and put populations in the temperate zones at greater risk. As more and more Americans drop out of large scale insurance coverage, and globalization increases the flow of peoples into even a small state like Vermont, we may even see the revival of classical scourges like tuberculosis. Infectious Disease research is critical for providing us the knowledge that we will need to respond to the next- and inevitable- pandemic. A growing consequence of the Iraq war is the steady stream of young men and women who are returning from the war with traumatic brain injuries. Our Neuroscience program offers a way to

train our students in problems and approaches of the twenty first century, and prepare our future doctors with the tools to treat thousands of diagnosed and undiagnosed. UVM is known for its environmental program, but its scientists are also known for discoveries on the environmental causes of DNA damage and lung injury. Creating synergy from these disparate areas represents a huge unexplored area.

3. Some years ago there was talk of abolishing the College of Engineering. If we look at what College could do when looked through the lens of environmental science, there are clear opportunities in the areas of wind power, hydroelectric power, and even bioconversion of plants into useful materials (partnering with CALS and the Department of Chemistry). Such an orientation would be a great way to draw new student interest, and would help move the Engineering College out of its over emphasis on simulation and modeling, and back into the business of devising real solutions to real problems.
4. Show me an undergraduate, and I'll show you a business major. During my entire appointment at UVM, I can't name a unit that has seemed less interested in interacting with the rest of the campus than the Business School. However, we have recently heard of some interest in engaging with the rest of us, including an innovative concept of a five year dual microbiology/ MBA program. If one of our goals as teachers is to prepare our students for the 'careers' of the future, than one of the most important things we can teach our business students to do is to be entrepreneurs and business initiators, as opposed to tulip speculators. If job security as we know it will be a memory by 2020, than our students will likely be spending their entire 'careers' creating their own personal brand, which may move through a series of different jobs. In practical terms, we should encourage our business students to get out and around to the *other* Colleges, and encourage them to intern with other faculty and thereby spot business opportunities in Agriculture, the Med School, the Engineering College, and SNR. We should encourage the business school to have an annual competition- 'green themed' if you will- for the best small business idea, and then award the winning student/team some seed money to develop their idea. I sat for years on EPSCOR review panels where we handed out money for phase SBIRs, and no formal mechanism for getting business students into the process existed. Todd Keilor, our Intellectual Property specialist, is doing great work already along these lines. His efforts need to be supported and encouraged to grow.
5. I could write paragraphs and paragraphs on how all the other programs and departments at UVM should respond to global warming and globalization, but there is not enough time or space. By all accounts, the School of Natural Resources is already well on the way to implementing the concepts I enumerated in the Take Home above. The important piece that has not been implemented here at UVM (as far as I can tell) is a serious effort to develop environmental policy as an academic activity that will support and sustain our Congressional Delegation. I think SNR should consider partnering with the History and Political Science

Departments to create a Major that prepare students for serious congressional staff work in the area of climate change and all of its many implications. As far as I know, UVM has no formal connections with Vermont College of Law. According to my father, a retired partner from one of the largest firms in New England, the Vermont College of Law turns out some of the best trained people in Environmental Law in the country. We ought to be doing everything we can to work together with them to create the legal experts of tomorrow.

6. Thanks for reading, and considering these comments.

Christopher Francklyn, Ph.D.

Departments of Biochemistry/Microbiology & Molecular Genetics  
Co-Director, University Program in Undergraduate Biochemistry

**Date:** Thu, 12 Apr 2007 08:15:48 -0400 [08:15:48 AM EDT]

**From:** "[Barbara Benton St. Gelais](#)"

Hello and thank you for this information,

The Unitarian Universalist Church in Burlington is promoting sustainable living by encouraging members to participate in Low Carbon Diet workshops. The website describing the book and the program is <http://www.empowermentinstitute.net/lcd/>

Members purchase the workbook for \$13 and participate in four group meetings over a couple months time. The goal is for each person to reduce carbon dioxide emissions, primarily from their home, but also workplace and community. I understand from the organizer, Wes Sanders ([wesandurt@verizon.net](mailto:wesandurt@verizon.net)), that the Mayor and the City of Burlington may be on the verge of adopting this program for the city as well. This would be an excellent way for UVM to support the Burlington community and also to spread the message far and wide as the sponsor of groups like this.

I see an incredible amount of waste also within my work environment at UVM. I have initiated some waste reduction programs within my department and it would be great for UVM to organize and sponsor Departmental liaisons, such as with the wellness program, to do this for all departments. If resources were available for this work it would be very helpful.

For example, I have made up a fairly comprehensive list to post in the bathrooms and by the copier, of things that people can do to create a sustainable world. I've contacted a designer to see if she will donate her time to make this an eye catching flier. This list or a better one could be widely disseminated. I have set up a box by the printer to put one sided copies in to be made into notepads by Print and Mail. I put up a sign explaining that we are turning our hallway lights off to save energy and have gotten the support of the department to keep them off. The sign advertises what we are doing and hopefully encourages others to do the same. I put a box out to collect used batteries and keep them out of the trash. I keep a small trash container in my office and empty it daily into a larger container so that another plastic bag doesn't go into the landfill for the few items of trash I generate every day. I put up stickers encouraging people to turn off office lights when they're gone or when it's sunny outside. I talk to people in labs telling them to keep their fume hood sashes down. If left open one fume hood uses the energy equivalent to 3 houses.

I've added "sustainability" to our monthly departmental meeting agenda to maintain a high level of awareness of energy saving and sustainability. I turn out lights that are left on. I notice temperatures are quite high in many buildings during the winter. I have to open my window to let out heat to be comfortable many days. Systemic policies could address this problem if it can be identified more accurately.

To truly BE the Environmental University UVM must do and sponsor so much more than it currently does. I am very happy to see this letter from President Fogel to back up what has been a meaningless tag line. I would be happy to support this initiative in tangible

ways and to receive support for the measures I have felt compelled to undertake on my own.

Sincerely,  
Barbara Benton St. Gelais

Barbara Benton St. Gelais, MA, LCMHC

Laboratory Safety Coordinator

Environmental Safety Facility

Department of Risk Management

University of Vermont

Burlington, VT 05405-0570

**Date:** Thu, 12 Apr 2007 11:19:56 -0400 [11:19:56 AM EDT]

**From:** [Kimmie Beal](#)

Here are my two cents on sustainability at UVM:

I think UVM should remove its plantings of invasive plants, such as Barberry (*Berberis thunbergii*). The seeds of this plant are dispersed by birds into natural areas where they can displace native species and reduce biodiversity. It is ironic to have UVM scientists studying the effects of Barberry in a building (MLS) surrounded by plantings of these shrubs. UVM should be planting with species native to Vermont, which are hardy and beautiful.

-Kimmie Beal

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Kimmie Beal  
University of Vermont  
Botany Department

**Date:** Thu, 12 Apr 2007 12:23:28 -0400 [04/12/2007 12:23:28 PM EDT]

**From:** Ralph Budd

In keeping with the mission to make UVM the environmental university, and the Lewis grant proposal, I would suggest that a broad view of "environmental" might include some of the themes of the COBRE grants on campus. Both the Lung and Immunology/Infectious Diseases COBRE grants (each about \$11.4 million) definitely touch on environmental issues. As director of the latter COBRE grant, I would be happy to lend a hand in crafting the Lewis grant application, or feel free to use boiler plate information from our COBRE grant.

Ralph Budd

--

Ralph C. Budd, M.D.  
Professor of Medicine  
Immunobiology Program  
The University of Vermont College of Medicine  
Given Medical Building D-305  
89 Beaumont Avenue  
Burlington, VT 05405-0068  
USA

**Date:** Sat, 21 Apr 2007 22:21:04 -0400 [04/21/2007 10:21:04 PM EDT]

**From:** Patrick Wood

Matt,

I think in the year 2020, UVM should have Earth Incs. 4 capital accounting model integrated into all of it's managment system and integrated with the financial accounting.

I think if this were to happen it would provide the university with exceptional decision making abilities for sustainability.

That is one brief contribution to the Envisioning process.

However, I only know about the 4 cap accounting idea briefly from the Earth Inc website, but it sounds like a great idea.

I know you guys are looking for funding and Bob told me that the Earth Shareholder's report should be coming out "soon".

Is that accurate? How soon is soon?

I want to learn more about the ideas, and if they are what I imagine they are I already know a couple ways that I want to start applying them.

Is there any draft of the Earth Shareholder's report that I can read?

I wanted to ask you this at the Colloquium, but by the end of the day, I was pretty beat.

Thanks, Patrick

**Date:** Mon, 23 Apr 2007 21:15:52 -0400 [04/23/2007 09:15:52 PM EDT]  
**From:** "Erica M. Spiegel"

My comments did not easily fit in the neat little boxes on your website, so I am writing them here. First, I'd like to note that as a long-term staff member (10 years) employed as an environmental professional (recycling/waste manager) and as a long-term member of the UVM Environmental Council I was completely thrown for a loop with this big announcement of your sustainability initiative. I feel that the "street level" staff who have been doing, initiating and implementing environmental sustainability programs for over a decade at UVM are being DISENFRANCHISED by your process which is heavily stacked with faculty members. With all do respect to the faculty, they do not "run" the University operations which they seek to-- in all likelihood-- change. So it would benefit your group to include some of the professional environmental staff on campus.

In answer to your specific inquiry:

What would the campus look like?

There would be more canopy trees to provide shading and cooling. Better maintained walkways and wider driveways and walkways so the Grounds and maintenance vehicles don't drive in a way that their wheels fall off the curbing. We would build up and in-fill, and not sprawl out. Several "visioning" exercises and forums have been conducted by Campus Planning Services over the past 5 years in writing the Campus Master Plan. Your committee might want to meet with them to get their results. (don't reinvent the wheel)

What kind of energy would power the campus?

More renewable sources (which considering we get most of our electricity from BED, is already happening). Continue the existing efficiency and conservation programs. Did you know that UVM has saved over \$10 million in the past decade due to efficiency programs designed and implemented by the Physical Plant? Most of the low hanging fruit has already been picked. Unless leadership at UVM is willing to take on drastic changes and challenging our existing paradigms and lifestyles, your committee should not think there are still some easy cheap fixes.

How would people get to and move around campus?

Same way as they do today. Great work has already been done by UVM Transportation and

Parking services. Most of the low hanging fruit has been picked. We get free CCTA bus service. We use bio-fuels and CNG. We have a parking pricing structure that tries to discourage people from bringing a car to campus. We promote ride sharing, etc. Again, unless drastic changes and challenges to existing paradigms and lifestyles occur, not much will change in terms of personal choices about transportation.

What food would we eat and where would we get it?

Our existing Dining Services are doing many good things and making many strides in the Local Foods movement. I encourage your committee to get the real story about the progress

UDS is making. Most faculty seem to assume that nothing progressive is happening in Dining options because they don't have the facts.

In addition to the source of our food, you should really be asking how will we get it and how will it be served? The UVM dining culture is too centered on the "grab and go" model.

We will never eliminate the use of wasteful disposable and single-use service ware unless we change our culture. Other campuses have already done this. Avoid scheduling classes and meetings during lunch and dinner hours, so that humans can sit down and eat an enjoyable meal in a real dining hall on a real plate with real silverware. Instead, we (UVM) promote and perpetuate the "go go rush rush take out" lifestyle of eating take-out packaged foods on the way to class, in classrooms, etc. Food and beverages do not belong

in classrooms and libraries. Period. The faculty need to help enforce this. Meals should be consumed on site, We need to promote healthy lifestyle eating choices and have a greater appreciation for our food. Why not have a SLOW FOOD movement at UVM.

Eliminate vending machines in classroom buildings! Classrooms are for learning and study, not for drinking and eating.

Specific in terms of facilities design (and this is an architecture design issue) is that buildings must feature dish wash and "rinse out" stations for students and staff to wash and rinse their own cups and plates which they carry around with them. This is currently an obstacle - People don't like to carry their own cup because there is no place to wash it out other than a bathroom sink.

How would the university be run?

This question is rather vague. By "run" I assume you mean how will operations, services and maintenance be performed and delivered on a regular basis. This "running" of the University is performed by hundreds of different administrative (non-academic) departments with their own management structures, so it is overly simplistic to say how will the place "run"

Still, here is my answer. Environmental criteria will be added to ALL decision-making on campus. Full life-cycle costing will be the norm. All Department deans, directors and chairs (DDC'S) will be accountable for environmental stewardship initiatives in their respective units. All DDC's will be required to devise a measurable indicator for how their area is participating in sustainability. It could be something as simple as "how much paper they purchase each year" or "how many of our staff/faculty bus or ride share to work" etc. It must be ingrained in our culture; it is not just the job of us few environmental professionals on campus, it needs to be added to everyone's job description in all job families on campus.

How would people be rewarded for their work?

Environmental stewardship would be part of the job evaluation of every staff member. Stewardship of resources (natural, human, etc) will be required of all; people should not be rewarded for things they should already be doing!! Certain behaviors (recycling, conserving, non-idling of vehicles) should be expected and we shouldn't have to "reward" people for doing them.

How would the university be structured to function in a more integrated way?

Job swapping, job sharing, job shadowing, cross functional training. Better understanding and appreciation of what each other does! Most UVM staff think the institution revolves around them and their work unit. Many people do not have a holistic view of the campus.

We need a more holistic approach to the place. Faculty do not seem to respect the environmental professionals on campus, or perhaps they just don't understand what it takes to "run" a university. Need more collaborative projects between faculty and staff.

What other visionary ideas do you have for the ideal university in 2020?

Set a Zero Waste goal for the campus. There is a lot written on ZW so I won't go into it here. But basically all our processes and systems should strive towards zero waste. ZW is a paradigm through which all decisions (purchasing, systems design, etc) should be made.

Solid waste has a huge environmental footprint- UVM generates more of it each year- yet ironically nobody is talking about it- instead everyone is talking about carbon-neutrality and energy.

Departments should be responsible for paying for their own waste disposal and their own utility costs. Currently, there is no incentive for individuals and departments to reduce waste or utility use as these things are paid for as overhead by the general fund. Even if departments don't really pay, we should still send them a utility and trash bill each month, just like they get at home, to see what it costs to run the university. Folks

just don't grasp the \$5million electric bill when they leave their computers on each night!

We have already started to "green" up some of the special events on campus. But let's start with the President's own staff and events. They currently choose "image" over environmental values by insisting on using black (non-recyclable) plastics for all their meetings and events. If we are saying we are the environmental university, then we have to be willing, at the top level, to shed our notions of what is considered "high brow" or "up scale".

UVM needs to get on board with establishing a formal Environmentally-Preferable Purchasing (EPP) program. Many other universities have this. State and federal government has been doing this for decades. We have much autonomy at the departmental level in terms of purchasing; departments should have to follow environmental guidelines when making purchasing decisions. Leader in this field is Rutgers University. We can learn alot from their program.

These are my few comments to start with

Thank you for your attention to this matter.

--

Erica Spiegel  
University of Vermont  
Recycling, Waste Management & Surplus Manager

----- Original Message -----

**Subject:** Steps towards Sustainability

**Date:** Thu, 26 Apr 2007 09:47:47 -0400

**From:** Steve Cavrak

**To:** sustainability@Uvm.Edu

How about a UVM Sustaibability blog or wiki or facebook presence ... all of there are more sustainable and community oriented approaches than the one-way email system currently in use.

**Subject:** Two simple ideas

**Date:** Thu, 26 Apr 2007 09:54:00 -0400

**From:** Anne Liske

**Organization:** The Anti-Violence Partnership at The University of Vermont

**To:** sustainability@uvm.edu

I a a recent transplant from Albany, NY. I'm amazed that yogurt cartons and the plastic containers that salads and sandwiches are served in in the campus food areas aren't being recycled! Also, how about encouraging compact fluorescent bulb use in all departments and by students in lamps and other fixtures?

Anne

--

Anne Liske

Sexual Violence Prevention Coordinator

The Anti-Violence Partnership at The University of Vermont

**Subject:** More pedestrian-friendly

**Date:** Thu, 26 Apr 2007 09:57:51 -0400

**From:** Howe, Sarah

**To:**

I love the walkway between S Prospect and Main st. I wish there were more walk/bike-only ways to get around campus. I spend so much time as a pedestrian dodging shuttles, pickup trucks, delivery vans, etc. There aren't enough clearly marked paths for walkers. I am thinking especially of the area between Bailey-Howe and Given.

I realize some students are handicapped, but it seems to me that the vast majority of students who take the shuttle spend as much time waiting for it as it would take to walk where they're going. I would like to see the shuttle system overhauled.

Sarah Howe  
Plomics Coordinator  
UVM College of Medicine  
Dept of Surgery, E309 Given Bldg  
89 Beaumont Ave  
Burlington, VT 05405

**Subject:** Vision

**Date:** Thu, 26 Apr 2007 10:08:27 -0400

**From:** Pratley, Richard E

**To:** <sustainability@uvm.edu>

I would like to see increased links between the Environmental program and initiatives to create a sustainable environment and the researchers in the medical school. I think we have the sense that our current society, while protecting against and curing acute diseases such as infections, actually promotes many chronic diseases including obesity, diabetes, cardiovascular disease and cancer. Can we develop a cross-disciplinary forum where we exchange ideas? I am not sure if chronic health costs are factored into environmental economic analyses, for example. R

Richard E. Pratley, MD

Professor of Medicine

Director, Diabetes and Metabolism Translational Medicine Unit

University of Vermont College of Medicine

Given C331

89 Beaumont Avenue

Burlington, VT 05405

**Subject:** Re: Steps towards Sustainability  
**Date:** Thu, 26 Apr 2007 10:26:54 -0400  
**From:** Steve Cavrak  
**To:** Sustainability <sustainability@uvm.edu>  
**References:** <91213511-9CC7-4F49-B035-19CDA5F905E3@Uvm.Edu>  
<4630AF68.6040903@uvm.edu>

On Apr 26, 2007, at 9:55 AM, Sustainability wrote:

Our first strategy is to pose the questions openly for individual consideration and to avoid the sometimes stifling criticism some people share of other peoples' ideas in blogs. At this point we are open to all ideas, no matter how far-fetched. The blog may be more useful when we are ready to focus our plan.

Hi Matt,

My own experience with blogs, and especially those at UVM, is that they have been more supportive than stifling ... and even at that, blogs such as those at [blog.uvm.edu](http://blog.uvm.edu) support a variety of moderating tools, etc. Considering that our students are part of the much documented Web2.0 ("wikinomics") generation, email itself may be stifling communication and participation.

Moreover, blogs are open to the wider university community ... alumni, folks in burlington and chittenden county, etc. are "welcome" ... and would help address one of the factors that work against sustainability of the university.

Facebook is another example of how the blogging culture and the community building culture support each other ... even when there are disagreements.

**Subject:** Re: Help Envision the UVM of the Future!

**Date:** Thu, 26 Apr 2007 10:43:49 -0400

**From:** Mack Gardner-Morse

**To:** sustainability@uvm.edu

Dear Leading by Design,

Here are some thoughts about the UVM of the Future.

It would be nice if the whole campus was smoke free. This would eliminate the health risks and fire risks of smoking.

There would be no outdoor lighting of buildings. This would save energy and reduce light pollution. Obviously, entrance doorways would be lit for safety.

As the cost of solar PV panels comes down, solar PV panels would be put on top of some of UVM's buildings. New buildings would incorporate solar gain and PVs. The DC power from the PV could be used to drive mercury free energy efficient solid state (LED) indoor lighting.

UVM should look at wood fired cogeneration of electricity and steam/hot water. This could be either in conjunction with the MacNeil Power Station or as a separate stand alone plant.

UVM's endowment is large enough to support scholarships to deserving students, start-up funding for research and new teaching initiatives.

UVM expands its ties to and research for local, Vermont, national and international (particularly Canadian?) local governments, organizations and companies. UVM expands its support of product development from its own research.

While UVM's library stores and delivers more information electronically, it maintains an active archive especially of and about Vermont. The library is an undervalued asset for the whole state of Vermont. It is one of the few libraries in the state with technical information in the sciences and engineering. The library uses this strength to partner with area high school science and math students introducing them and allowing them to use/borrow technical

books which are unavailable in their schools.

UVM continues its tradition of support and being a resource for the agricultural community of Vermont. This includes education, research and extension work. This support/resource will probably expand as Vermont's agriculture diversifies.

UVM leads the state and nation in training teachers, educators and administrators in research based direct instruction and outcome education measures. UVM partners with the Stern Center and the State of Vermont to offer courses and instruction to Vermont's current teachers and schools in direct instruction and outcome measures to improve their effectiveness.

Sincerely yours,

Mack Gardner-Morse  
University of Vermont  
Department of Orthopaedics & Rehabilitation  
401C Stafford Hall  
95 Carrigan Drive  
Burlington, VT 05405-0084 USA

**Subject:** bees

**Date:** Thu, 26 Apr 2007 10:46:52 -0400

**From:** alea tuttle

We have some quality entomologists on this campus, maybe we should start doing some research on what it would take to build a bee conservatory until we figure out what's killing off all the bees. then at least uvm students of the future could eat apples, oranges, and honey.

save the bees!

alea

**Subject:** visioning...

**Date:** Thu, 26 Apr 2007 11:34:25 EDT

**From:**

I would like to suggest that there be a way for NGOs and Non-profits that serve the global community be linked to UVM as educational somewhat like Institutes so this becomes a shared experience and expands the horizons for both institutions...thank-you..NINA

[www.children-of-the-earth.org](http://www.children-of-the-earth.org)

*Life is no brief candle for me. It is sort of splendid torch which I have got hold of for this moment,  
and I want to make it burn as brightly as possible before handing it on to future generations....George Bernard Shaw.*

Dr. Nina Meyerhof, Pres.  
Children of the Earth  
UN-NGO  
26 Baycrest Drive  
South Burlington, VT 05403

**Subject:** (no subject)

**Date:** Thu, 26 Apr 2007 12:05:21 -0400

**From:** Laura Farrell

How about if President Fogel donated 2% of his salary (which has been said to be more than the greening budget for the university) towards raising salaries for underpaid grad students and support staff, and towards a new Biology Building (it snows inside my locked window in the winter!).

Thank you for your consideration,  
Laura

**Subject:** A suggestion re: sustainability and information delivery/discovery on campus

**Date:** Thu, 26 Apr 2007 12:22:04 -0400

**From:** Paul Martin

Hello,

Steve Cavrak and I were just discussing how much online storage gets used up with all the things we send to students (i.e. the 297kb attachment that prompted my response today). Many of my students never use their UVM e-mail, even after I nag them about it as being one of the only ways we have to communicate with them directly.

One idea that would be a great way of getting information to them and of developing a new way of promoting what's happening on campus would be for UVM to sign on officially to the iTunes University service offered by Apple. We've been using it on a trial basis for my courses in English this year, and it's been a great way of distributing information, whether it is audio or video downloads or large PDFs that I need them to read for class. I've all but eliminated the use of paper in my classes now. All students need to do is to subscribe to my class podcast and whenever I've uploaded a new video or PDF it will automatically download for them the next time they log in to iTunes. You can see what we've been up to here: <http://www.uvm.edu/itunesu>

I know that public affairs was looking into this earlier in the year, but I've not heard anything since. This would be a great way to put up podcasts of recent speakers at UVM (imagine students, potential students, and parents being able to download the lecture from Eli Wiesel or Archbishop Desmond Tutu) and of passing along important info about what's going on at UVM. In terms of sustainability and issues of online storage, instead of using an enormous amount of bandwidth to send a 300k file out to 10,000 e-mail addresses, where that file might sit taking up UVM server space for weeks, months, and potentially even years given how frequently some of my students check their UVM e-mail, iTunes U involves putting that single file up in one place from which people download it onto their own computers. Moreover, using this kind of system allows students and other interested parties to DISCOVER this information at any time rather than just being subject to the DELIVERY of information at times which aren't convenient and may result in them just hitting the delete button.

Anyhow, that's just one idea. I'd love to see more attempts to enhance the ways in which we deliver information to people that also save energy and paper.

Respectfully,

Paul Martin

**Subject:** ideas

**Date:** Thu, 26 Apr 2007 12:40:13 -0400

**From:** Ryan, Catherine

**To:** <sustainability@uvm.edu>

Here is one idea.

I live in Hinesburg and I would love to be able to take the bus to UVM where I work. But there isn't one. There is a private van called On the GO but it costs \$6 each way. UVM subsidizes CCTA busses, even paying the full fare to St. Albans or Montpelier. If UVM would subsidize, either partially, or fully, the On the GO van, I would use it at least a few times a week.

Also it would be nice if UVM offered some financial incentive for employees to buy hybrid vehicles, the way NRG company of Hinesburg does. I think they give each employee \$1000 a year, every year, for owning a hybrid. Also if people who have orange parking passes but own a hybrid could park in the green lots, that would be cool.

Once in a while I would bike to work from Hinesburg, if there were more convenient shower facilities. The ones at the gym are not great, and are far from my workplace. If I could somehow shower in a nicer place, closer to my office, I'd bike more often.

Oh, and here is one very specific suggestion. I work in the Med Ed center, near the Dana Library. This hallway has floor to ceiling glass on one side, letting in daylight. Even on cloudy days, there is plenty of light and the overhead lights in this hall do not need to be on. It's a waste. They should be on timers (only turning on in the evening) or even better, they could be hooked up to light sensors that only turn the lights on when it's not bright enough. This could be done to many lights at UVM, not just the ones near Dana Library.

And finally, every building should have solar panels on the roof.

Cathy Ryan

Thu, 26 Apr 2007 12:50:51 -0400

**From:** Emily Kathleen Landry

**To:** [sustainability@uvm.edu](mailto:sustainability@uvm.edu)

I envision a carbon neutral campus!

I also think it should be mandatory to print double sided single spaced for all documented assignments in all classes across all colleges at UVM. Just think about the amount of generated waste we would be saving!

**Subject:** Leading by Design

**Date:** Thu, 26 Apr 2007 13:15:36 -0400

**From:** GH

**To:** sustainability@uvm.edu

Hello UVM:

Since your website does NOT have a submit button.... I've copied my on-line answers..... see below:

What would the campus look like?

passive solar oriented clusters of buildings with wind scoop generators  
lots of trees, evergreens to funnel the winter winds and deciduous to shade and cool the buildings and pavement

What kind of energy would power the campus?

solar, wind, small hydro on the Winooski and harnessed combustion of rapidly renewable pellets

How would people get to and move around campus?

mostly walking

Bicycles

possible 12 person light rail units at one every 5 to 10 minutes on a spine

What food would we eat and where would we get it?

organic only: local when seasonal, hydroponics off season

Low/no salt, lard or refined sugar

Minimally processed, mostly fresh

How would the curriculum look and work?

Sustainability can be integrated into all aspects of the current curriculum

Teach and practice long term value analysis in lieu of the bottom line thinking.

How would the university be run?

Executive, legislative and judicial bodies.

Equal representation between admin, faculty, students, faculty and the local community in the legislative and judicial bodies.

If you were to write the mission statement, what would it be?

Teach, learn and live how to "be a good neighbor" to the earth, people, flora and fauna.

How would people be rewarded for their work?

For good, excellent or outstanding work....advancement, public recognition and private remuneration.

How would the university help solve the problems of Burlington, Vermont, the US, and the World?

Do not pollute

Use no toxins, carcinogens, mutagens or teratogens

Eliminate waste, reuse or recycle in lieu; plan for it and implement the idea

How would the university be structured to function in a more integrated way?

Virtual links to:

each high school, middle school and grade school

resources of knowledge... people, associations, think tanks, etc.

Online virtual learning opportunities

What other visionary ideas do you have for the ideal university in 2020?

Use mainly and mostly local or regional materials for facilities and consumption.

Develop Partnerships: local, national and worldwide with people, companies, other colleges and universities, government

ps: Your Task Team is NOT inclusive of 'green' professionals... and not a wide enough sampling of community representation either.

Subject:

Re: University of Vermont - Envisioning our Future - April 30th @ 2:00 p.m.

From:

Date:

Thu, 26 Apr 2007 15:01:14 EDT

To:

MainStLnd@aol.com

Hi Melinda,

Are you aware of the Clean Energy Fund that UVM students are trying to institute to help pay for renewable energy projects and programs on campus? Other universities, like Colorado University, charge student fees @ \$10 dollars per student to get enough money to pay for things like solar panels.

I'm helping students contact their student trustees and legislative trustees to move this idea onto a committee agenda and be enacted in the 2008-09 calendar year. I think it's an idea with traction and its student driven. Talk soon. Crea

Subject:

Re: University of Vermont - Envisioning our Future - April 30th @ 2:00 p.m.

From:

Karel Samsom

Date:

Thu, 26 Apr 2007 12:24:17 -0700

To:

MainStLnd@aol.com

Wow Melinda. Great you're doing this. Pity I can't be there. With my insider as well as outsider experience with UVM I would love to partake. But, alas, I'm in California for now and won't be back to VT and UVM (leading the 2007 Sustainable Business Seminar again July 9-15) till July.

Have a great session. If I can contribute in any other way, let me know!

Karel

Talking about sustainability, here's a chapter out of our new book,

**Subject:** future!

**Date:** Thu, 26 Apr 2007 16:23:22 -0400

**From:** Lee Krohn

**Reply-To:** Lee Krohn

**To:** <sustainability@uvm.edu>

thanks for asking! for us, an ideal future would have a branch of uvm here in manchester to serve our residents, visitors, and businesses. we'd have both a virtual campus, where we could participate in on-campus lectures, activities, and events; and also a physical branch campus with a small cadre of smart, motivated people to teach, inspire, and participate in community life. there are many of us who would fit that bill, and who would not necessarily feel the need to be at the main campus.

thanks for asking, and for listening. we'll be glad to help!

lee

Lee A. Krohn, AICP  
Planning Director, et al  
Town of Manchester  
6039 Main Street  
Manchester Center, VT 05255

**Subject:** Pumpkins

**Date:** Thu, 26 Apr 2007 17:42:38 -0400

**From:** Jay Hathaway

**To:** <sustainability@uvm.edu>

Our chamber succesfully achieved a guinness world record last october....why not become the pumpkin state...i have a applied for a resolution to be adopted in vermont that establishes the Saturday after the columbus day weekend holiday be vermont pumpkin carving day...everyone carves, evereyone knows how to carve...weeks of pumpkin stuff!!...inns retailers, gas stqations....the day of the carve they are all brought to one spot in every town and anyone could drive anywhere in the state and view pumkins at the country store/town hall/ museum...wherever....become famous for pumpkins...we have a community pumpkin patch that teaches agriculture etc....

Sorry, just a quick note on my way home...not written well but the point is made...say hello to ben...he and I are friends..i owned peltier's market in dorset vermont for almost 30 years...

I am on the board of the vermont council on the arts .... we have started the creative economy initiative here in manchester.....

We're on the go....

Jay Hathaway, Executive Director  
Manchester & The Mountains Regional Chamber of Commerce, Inc.  
5046 Main Street  
Manchester Center VT 05255

Arts and culture at the center of humanity

**Date:** Thu, 26 Apr 2007 20:20:43 -0400

**From:** Lynda R. McIntyre

**To:** sustainability@uvm.edu

May UVM craft a vision that puts the valuing of arts, culture, generosity, wisdom and humanity at the core of the educational experience. These are the true needs of our culture and future.

Lynda McIntyre

**Subject:** Visioning idea

**Date:** Fri, 27 Apr 2007 02:14:05 -0400

**From:** Jonathan W. Sands

**To:** sustainability@uvm.edu

Part of my vision for UVM in 2020 is that we will practice what we preach about sustainability. So alternative energy will be omnipresent, and the campus will be designed to minimize its impact on the environment. Faculty and students will enjoy incentives to practice environmentalism in their daily lives. For instance, there will be excellent bikepaths, bicycle garages, and convenient shower facilities to encourage cycling to campus. Electric or solar powered vehicles will be available for the use of faculty on University business. Strides will be made towards a paperless campus. We will take advantage of new technology, but not lose sight of the importance of human contact.

--

Jonathan W. Sands  
Dept. of Mathematics  
University of Vermont

**Subject:** sustainable campus  
**Date:** Fri, 27 Apr 2007 08:49:31 -0400  
**From:** ReNew Building Materials and Salvage, Inc.  
**Organization:** Renew Building Materials & Salvage, Inc.  
**To:** sustainability@uvm.edu

Consider group ordering and purchasing of sustainable products (100% post-consumer envelopes, soy trashcans) etc with a plan for their disposal that does not include the dump (ie: vendor buyback, donation, give to another department etc) so your recycling coordinator has more input up front.

--

ReNew Building Materials & Salvage, Inc.  
16 Town Crier Drive #2  
Brattleboro, VT 05301-8669  
[www.renewsalvage.org](http://www.renewsalvage.org)

Hours Tuesday-Saturday 9-5:30

A non-profit project of CCRVI, [www.ccrvi.org](http://www.ccrvi.org)  
Central Connecticut River Valley Institute

**Subject:**

**Date:** Fri, 27 Apr 2007 08:57:52 -0400

**From:** Jay Hathaway

**To:** <sustainability@uvm.edu>

We do not have an extension component of UVM in our region...We have 38,000 people in our county...yes, we do have bennigton college and southern vt college but nothing in manchester...just a thought..

Jay Hathaway, Executive Director  
Manchester & The Mountains Regional Chamber of Commerce, Inc.  
5046 Main Street  
Manchester Center VT 05255

**Subject:** Green mountains

**Date:** Fri, 27 Apr 2007 08:58:59 -0400

**From:** Jay Hathaway

**To:** <sustainability@uvm.edu>

GREEN.....easy lay up for statewide green initiatives.....

Jay Hathaway, Executive Director  
Manchester & The Mountains Regional Chamber of Commerce, Inc.  
5046 Main Street  
Manchester Center VT 05255

**Subject:** Re: Help Envision the UVM of the Future!

**Date:** Fri, 27 Apr 2007 10:46:09 -0400

**From:** Robert W Moore

**To:** Leading by Design <Gary.Derr@uvm.edu>, SUSTAINABILITY@uvm.edu

**References:** <4630A7A3.3020904@uvm.edu>

To whom it may concern:

My first comment is about the starting concept for the discussion:

Imagine we have designed the perfect university.

This premise is flawed because as an educational institution, UVM should be constantly and continuously evolving. In other words, the "perfect university" is not a logical goal for any school, especially UVM. We must be willing and be ready to be flexible, open, and responsive to any and all cultural evolutions going on around us. As designers, we try our hardest to have what we create be dynamic enough to be continually useful, and flexible enough to respond to unknowns...unless you have a crystal ball you keep secret, attaining the "perfect university" is impossible and illogical....  
please respond if you would like to discuss this further...

**Subject:** Re: Help Envision the UVM of the Future!

**Date:** Thu, 03 May 2007 11:18:23 -0400

**From:** Robert W Moore

**To:** Sustainability <sustainability@uvm.edu>

**References:** <4630A7A3.3020904@uvm.edu>

<20070427104609.pnrghj1ocao00c08@webmail.uvm.edu>

<4638AD9C.3030608@uvm.edu>

you seem to be missing the point:

change "we have created the perfect (or best)" to "in an effort to create the best possible university, what kind of things can/should we do now/today?"

2nd: I was at the seminar where we broke into groups...it was nice...however, as was suggested, the physical plant people as well as designers and engineers should be involved as early as possible to help the brainstorming groups stay on a realistic track...like I said, the meeting was nice in a feel good kind of way, but I must add that it was very disjointed; also, many of the things discussed were impractical and implausible, while things that are tangible were ignored...i.e. campus is trashy, literally trash is discarded by many students wherever they feel like littering, an immediate effort should be made to clean up the premises by involving students!!!!!! UVM can't go from a campus of litter-bugs to zero-waste...that is illogical...start with attainable goals!!!!

Another example: Instead of figuring out how to "offset" campus visitors' carbon emissions (which is a ridiculous idea to any true ecologist/environmentalist and seen as a republican ploy of distraction because it doesn't matter who is dumping/burning carbon, it matters that it is happening at all! It would be like selling exercise credits to a couch potato, and they would be happy that at least someone is burning calories.) we should figure out how to get more local Vermonters enrolled and less out-of-staters, which would therefore reduce the waste of carbon emissions related to traveling by plane or long car rides for a 90 minute tour.

See what I mean??? Attainable, realistic, and effective goals.....

Good Luck, and let me know if you want to discuss this more!!!

Robert Moore

Landscape Designer

**Subject:** personal UVM vision

**Date:** Fri, 27 Apr 2007 11:48:14 -0400

**From:** Kenneth J Bagstad

**To:** sustainability@uvm.edu

**CC:** Eileen R Horn <ehorn@uvm.edu>

Hey Matt -

Spent 8 hours yesterday identifying my own vision for UVM, as part of my written comprehensive exams (Bob's questions). He asked me to forward these on to you. You can probably skip the parts highlighted in yellow - those were directed more at answering Bob's questions and less at the future visioning of UVM. Hope things are well your way...

Ken

--

Ken Bagstad  
Graduate Research Assistant, University of Vermont  
RSENR, PhD Program  
Aiken Center, 81 Carrigan Drive  
Burlington, VT 05405

**Subject:** housing for students!

**Date:** Fri, 27 Apr 2007 11:32:03 -0600

**From:** Jennifer Green

**To:** <sustainability@uvm.edu>

#1: Time and time again, absentee landlords have not proven to be successful players in providing safe, adequate, affordable housing for UVM students. And all too often, they let their properties fall into disrepair, impacting the quality of life for all of Burlington's residents. UVM should step up to the plate, and build enough housing to adequately house all of its students. My vision: the majority of UVM students are housed on campus, and Burlington's historic properties and homes are owned by long-term residents who are interested in investing in their homes and their city.

#2: UVM is a car-free university where students walk and use public transportation while living in Burlington.

**Subject:** visions for UVM

**Date:** Fri, 27 Apr 2007 14:04:48 -0400

**From:** Dave Sellers

**To:** sustainability@uvm.edu

**CC:** MainStLnd@aol.com

Add these ideas to your sustainable pile. In the service of sustainability, I am attending by e-mail rather than 3 hours in a car.

1. I agree that UVM needs to create and maintain its commitment to sustainability and to deliver this in the action of the classrooms, all future man-made elements on campus, and the UVM connection to Burlington and the commuting neighborhood. (I assume this is the main point)

2. The above comes in these forms:

AND note that the current modes of evaluating options in terms of cost (\$\$\$) don't serve a civil society in the fullest form, only the short term of cash out. Other modes of evaluation need to be invoked such as:

Reduction of pollutants (This includes taking responsibility for all inputs and exhausts from water to sewage, paper to electricity, carbon in terms of heat, vehicles and power):

Examples that inspire (this is not only true for a great university, but any gathering space where citizens can see for themselves the future impact of alternate ways),

Careful and artistic uses of local materials (the highest form of environmental responsibility lies in works of beauty that don't need to be remodeled or changed for thousands of years - note the Pantheon in Rome),

Attention to and response to the daily climate in shelter. This means human participation in accommodating the variations in temperature, wind, moisture and taking responsibility for managing the buildings that serve the University.

Some specifics:

Reduce the traffic in Burlington and gain easy access by installing the (proposed frequently) Ariel tram on College Street from the University to Church St.

Support the passenger rail opportunity for student commutes by supporting the rail budget proportionately to the number of students who don't drive. AND, participate in the planning and strategy for the rail in terms of frequency, type of vehicle and connection to UVM from the closest stop.

Engineering classes that invent, test and evaluate options for electric cars, LED lighting, controls of all motors and heat generating and using systems from furnaces to refrigeration on campus.

Develop dorm and classroom "dashboards" that display the consumption of energy on a daily basis, monitor the rates and timely records.

Have a class that: designs and builds the annual "UVM house", that pushes the envelope of energy consumption, uses of local and recycled materials.

Treat all wastes on campus. (A big one but possible)

Recycle paper and other non-toilet wastes.

Have a weekly newspaper that shows progress on all these fronts and features champions of the various tasks.

Tear down all buildings that can't be justified under strict guidelines of aesthetics, energy conversion and mine the materials for state-of-art new versions.

Install green roofs on all flat or low-slopped roofs.

Have battery powered campus jitney vehicles. Batteries powered by campus windmill (huge one on the water tower) and exercise machines on campus.

Insist on all future campus buildings fit a scoring and evaluation criteria established with student and faculty impute. Score existing buildings and set a standard that calls for drastic changes to the big offenders. To the possibility of removal. This can be done purely for aesthetic reasons. All UVM buildings should be beautiful, even the trash management building.

**Subject:** Sustainable UVM suggestions

**Date:** Fri, 27 Apr 2007 19:47:09 -0400

**From:** Russ Hovey

**To:** sustainability@uvm.edu

One often gets the impression across this campus that the trees are often overlooked for the forest when it comes to implementing a sustainable mentality. My observation is that there are so many "little" things that could be done at UVM before embarking on any grandiose "developments". In fact, I continually find myself frustrated at some of the things one observes at this "environmental" university. Perhaps the following observations could be rectified:

- has anyone noticed that during construction of the new Davis center there has been strings of lights burning all night despite nobody being in the building? And it would appear they are not of the fluorescent kind.. not a good image for the environmental university to portray.
- physical plant, UVM police and most other UVM vehicles always seem to be left idling when employees are taking a break, walking to check if a door is locked, issuing parking tickets etc. Train employees in energy conservation...
- Of any place in Chittenden county it would appear that UVM has the highest salt consumption during winter; custodial staff seem to shovel salts onto doorways rather than spreading it liberally; ever noticed how many "piles" of salt are on the walkways across campus due to poor settings on the salt spreaders attached to the small plow tractors?
- Next time you walk from Bailey Howe to Waterman take a look at how many recycling trash cans there are en-route (none), and how many recyclable containers can be found in the regular trash. Similarly, take a look in the trash can in each lecture theater on campus for the same recyclables; students won't go outside and use them, so why not put them in each room?
- While the new Davis center might be LEED certified, there are numerous other buildings across campus that are as energy efficient as a Hummer. On a -20 day I have frost on the inside of my windows, and on windy days there is a howling sound in my office. It doesn't take much to realize that the energy lost is considerable. I've given up having physical plant get active on this matter. It would seem that UVM should do an energy audit of all its buildings and invest in some of its aging facilities to reduce the energy used.
- Why don't the parking officers ride a bike or drive an electric car?
- Encourage bike riding in summer - ever notice all the bike racks are overflowing?? People don't ride to UVM because they can't put their bike anywhere safe (or non-damaging).

All combined, it would appear that UVM should focus on some local changes with its existing infrastructure before embarking on new undertakings.

Russell C. Hovey, PhD, Assistant Professor of Animal Science, Adjunct, Dept of Pathology

**Date:** Sat, 28 Apr 2007 10:12:43 -0400

**From:** Di Carlo, Antonio

**To:** <sustainability@uvm.edu>

It is my belief that no university can survive without the support of industry and can not thrive without being able to selectively influence industry. I would suggest that UVM develop relations with targeted industry and encourage and facilitate the relocation or expansion of such potential partners to Vermont. This could entail lobbying our government to making Vermont attractive to certain industries.

Antonio Di Carlo

**Subject:** vision ideas

**Date:** Sun, 29 Apr 2007 09:32:00 -0400

**From:** Deborah Neher

**To:** sustainability@uvm.edu

Here are some aspirations I have for the UVM campus by 2020:

-- need for change in faculty reward system for conducting trans and multi-disciplinary research and education programs

--multifunctional landscape design of entire campus, meeting ecological services such as stormwater management, aesthetic properties, structurally-sound engineering, recreation, and edibles

--pedestrian campus by closing off Main and the road that runs between Morrill Hall and Ira Allen chapel

--Close the loop on biodegradable waste products and convert them into mulches and slow-release nutrients for campus gardens. Food wastes and dining halls and manure from the Miller farm were composted at campus facilities and then compost used to support the Common Ground Student-run Educational Farm at the Horticulture Research Center, mulch for all campus landscapes etc.

--

Dr. Deborah Neher  
Chair and Associate Professor  
Dept of Plant and Soil Science  
University of Vermont, Hills Rm 6  
Burlington, VT 05405-0082

**Subject:** facilities lighting

**Date:** Sun, 29 Apr 2007 10:33:23 EDT

**From:** Gregoryshall

**To:** sustainability@uvm.edu

I have worked in the PFG complex for nearly a year now on the second shift maintenance. My co-worker and I are responsible for the majority of trash disposal in the patrick gym and coaches offices of gutterson. When we began working together recycling was inconvenient and "hit or miss" in the gym by most patrons and faculty/staff. Through consciensious effort on our part we were able to establish a highly effective recycling effort with very little increase in time expended in the effort. Providing containers is a step in the right direction but we found that watching traffic patterns, evaluating work spaces, and providing the correct containers placed in optimum locations increased effectiveness tremendously. Most of us are still not ready to do what is necessary unless it is convenient. Sometimes this means moving a container only a few feet or understanding what type of container works in a specific location. More can certainly be done.

Most Americans understand that turning unnecessary lighting off at home will help save money and energy. I traveled extensively in Europe in my previous occupation and I have seen how pervasive "on-demand" lighting is there. There are dozens of lights in the PFG complex that, fire codes and safety permitting, could be equipped with movement sensors. I am certain that an evaluation of the lighting and installation of these sensors would save the school many thousands of dollars over the course of just one year. Campus wide? I don't have the knowledge to come up with the numbers but certainly UVM does.

Gregory S. Hall

Maintenance Specialist, 2nd shift

PFG

**Subject:** Fwd: Thoughts for a sustainable future,...UVM in the future

**Date:** Sun, 29 Apr 2007 11:56:41 -0700 (PDT)

**From:** Carol Talley

**To:** sustainability@uvm.edu

Thanks to all the people at UVM driving this program...

thoughts for the future...

- \*Carbon neutral but not just by buying off energy systems to counterbalance our use...changing use patterns right here.
- \*energy efficient lighting everywhere
- \*create biodiesel out of our food kitchens and use it in our transport vehicles.
- \*timed shower systems
- \*programs to support better energy use for all citizens of Burlington.
- \*supporting school education programs for how everyone can make a difference
- local food..which i think is already happening
- \*recycle all # plastics and facilitate All Cycle developing a more comprehensive recycle program...there is a recycle business in Bridport that takes 1-7 plastics, all shapes and sizes... we should be able to do that here.
- \*how can students take less carbon expensive transport to and from campus from home at break times?
- \*weekly feedback to the campus on carbon use costs/choices.....or break it down into individual use/activity costs...if you shower for 5 minutes vs if you shower for 30 minutes....awareness, awareness, awareness !!!!!
- \*get our lake cleaner
- \*texts with recycled paper or reuse texts...all paper use on recycled paper
- \*exercise center that turns your exercise into energy for the university..heating water or running lights for dorms
- \*utilize solar and wind power wherever possible....
- \*lots of vegetarian meal options
- \*drying racks for students to air dry clothes vs use dryers

THat's it for now

Carol Talley MD  
Dept. Ortho/Rehab  
UVM

**Subject:** Why not begin by completing some short term Environmental goals?

**Date:** Mon, 30 Apr 2007 08:40:53 EDT

**From:** GBMilo

**To:** sustainability@uvm.edu

I am a retired University professor living during the summer in Vermont I was a consultant for many, many years to NIH and USEPA and ASOR three of the largest governmental agencies involved in Environmental issues. In two of the agencies I was the chair of the group. My recommendation to your committee would be to begin with short term achievable goals and once you have accomplished them move on. Two such goals could be hire qualified people who have the real years of experience in going after those goals. No. 2 If you are going to have the enforcement of these regulatory goals enforce them. Do not behave in an unbelievable manner. Dr. George E. Milo

**Subject:** Envisioning UVM

**Date:** Mon, 30 Apr 2007 09:36:41 EDT

**From:** BERNIE W

**To:** sustainability@uvm.edu

I'm the parent of a sophomore attending UVM. I think this project is wonderful and I'm sure you'll be getting a number of very good suggestions on how people see UVM in the decades ahead.

My contribution isn't a bold idea or an intriguing proposal, but might best fit into the "housekeeping" category. Whatever UVM should decide to do I would encourage you to keep superior communication as part of the plan. In my opinion UVM already does an excellent job with this and I know it's hard work to keep all the folks involved informed and to make sure you're listening.

That being said, I realize it's easy to sometimes miscommunicate or to not communicate. I've seen numerous instances where these communication failures have damaged important projects and I don't want to see that happen to UVM.

Bernie Wagenblast  
Cranford, NJ

**Subject:** RE: Help Envision the UVM of the Future

**Date:** Mon, 30 Apr 2007 10:32:04 -0400

**From:** Corder, Lee

**To:** Leading by Design <sustainability@uvm.edu>

I would have been interested in attending however getting the notice less than four hours before the event does not give one time to schedule accordingly. If you really want participation then afford people at least the same time that you would need.

**Subject:** Re: University of Vermont - Envisioning our Future - April 30th @ 2:00 p.m.  
**Date:** Mon, 30 Apr 2007 10:33:21 -0700  
**From:** Karel Samsom  
**To:** Sustainability <sustainability@uvm.edu>  
**CC:** melinda@mainstreetlanding.com  
**References:** <c25.14c4c162.336256ea@aol.com> <463521B6.7050202@uvm.edu>

Hi Matt:

Great to be the coordinator on this project! Congratulations!  
As for the past few years I'll be the lead faculty for the annual UVM Sustainable Business Seminar . This is an annual 3 credit course for grad/undergrad and professionals. In the past the group has completed live projects for B&J's, Seventh Generation and worked with GMC. Thus from July 6th through the 20th we'll be at our place in Burlington and I would be available for a discussion if you wish with anybody from the Envisioning the Future team!

Be well,

Karel

**Subject:** Re: Help Envision the UVM of the Future  
**Date:** Mon, 30 Apr 2007 17:25:11 -0400  
**From:** Martha Perkins  
**To:** Leading by Design <sustainability@uvm.edu>  
**References:** <200704301414.13UEELCw002412@eagle.uvm.edu>

Greetings to the sender of this email:

Thank you for this notice. As you probably know, this whole subject is dear to my heart and I have been writing and reading about it for many years. I am so sorry your email arrived on the morning of the event, too late for me to attend. Please keep me informed.

Martha Perkins

Martha Scott Perkins  
Spirit Beam Writers

**Subject:** vision

**Date:** Mon, 30 Apr 2007 18:14:11 -0400

**From:** Trav Fryer

**To:** sustainability@uvm.edu

I was just reading [http://www.treehugger.com/files/2007/04/worlds\\_largest\\_6.php](http://www.treehugger.com/files/2007/04/worlds_largest_6.php) and it seems perfect for uvm. We could power all of campus and more with just one wind turbine.

-trav

**Subject:** my vision

**Date:** Mon, 30 Apr 2007 18:55:10 -0400

**From:** Elizabeth W. Christie

**To:** sustainability@uvm.edu

Dear folks,

Our newly defined vision at Windham Child Care Association is one I would like to share with you:

We envision a day when the healthy development of all children will be a top priority of our communities, our state and our nation.

Sadly, such is far from true. Voices for Vermont's Children (formerly Vermont Children's Forum) recently sent out a mailing quoting Nelson Mandela as saying "We must move children to the centre of the world's agenda. We must rewrite strategies to reduce poverty so that investments in children are given priority...Any country, any society, which does not care for its children is no nation at all."

blessings.

elizabeth

Elizabeth Christie  
Windham Child Care Association  
Executive Director

[www.windhamchildcare.org](http://www.windhamchildcare.org)

"Children are the living messages we send to a time we will not see."

**Subject:** Housing for UVM Employees

**Date:** Mon, 30 Apr 2007 21:08:38 -0400

**From:** Richard W. Munkelwitz

**To:** <sustainability@uvm.edu>

When employees live near their places of work, commuting, congestion, and emissions are reduced. Employees have more time to invest in their community, and are able to lead an 'integrated' life of work and leisure in the same community. Due to the high cost of housing in Burlington, many UVM employees cannot afford to live where they work. UVM could make affordable housing a priority by dedicating land and buildings that will allow employees to work and live in Burlington.

Thanks,

Virginia Munkelwitz  
68 Ledge Road  
Burlington VT 05401

**Subject:** UVM Clean Energy Fund

**Date:** Mon, 30 Apr 2007 22:59:21 -0400

**From:** Daniel Belhumeur

**To:** sustainability@uvm.edu

Matt,

Attached to this email is the UVM Campus Energy Group's proposal to the Board of Trustees for a Clean Energy Fund to be created at UVM. We believe it is one mechanism by which UVM can achieve sustainability by 2020. Dean Miller, a member of the Leading By Design Task Force, suggested that we solicit the task force for formal support of this fund. Therefore, I have included a background letter, which summarizes the Clean Energy Fund, and a template letter for the task force to extend its support.

Best,  
Dan Belhumeur

**Subject:** Thoughts on "Envisioning the UVM of the Future"

**Date:** Mon, 30 Apr 2007 23:06:49 -0400

**From:** Adrian Ivakhiv

**To:** <sustainability@uvm.edu>, <robert.costanza@uvm.edu>

**CC:** Donald DeHayes <donald.dehayes@uvm.edu>, <cami.davis@uvm.edu>

Dear Bob, and all,

I wanted to share a reaction I had to Ben Cohen's talk at the start of today's "Envisioning the UVM of the Future" forum. While, in retrospect, I recognize that this might have been an overreaction on my part, I think it's indicative of the response that some, especially the more politically engaged faculty in the social sciences and humanities, might have, and so I would hope that it could be taken into consideration in the planning and coordination of the "revisoning" process as it continues.

In general, I was happy to hear a lot of great ideas being generated and discussed, and to see a lot of participation from RSENr faculty and students in particular, at the event. But you could say that there was a hopeful angel sitting on my right shoulder and another, more skeptical devil, sitting on my left: the first was pleased, but the second kept muttering nasty things in my ear during Ben's talk. Here's what the second one heard him say:

- 1) that universities are an institution that is not very responsive to what's real and important in the world, because of (among other things) "institutional lag";
- 2) that this institutional lag is caused primarily by faculty having too much power, at the expense of administration, staff, and students -- the faculty voice, Cohen asserted (as if there is one such unified voice), "drowns out" all other "voices";
- 3) and that students, who are the "clients" of the university, should have more power.

Individually, at least the first and third of these assertions aren't problematic: universities should certainly be responsive to the needs of the real world, and students should participate in their structure of power. But point #2 rang an alarm bell in my head, and so the cynic in me began hearing the whole speech as a crafty attempt to get students (and others in the audience) on-side in a process that can be expected to generate resistance -- especially from those laggard "faculty" with (ostensibly) too much power. The process, however, was left vague, and the mechanisms of the process were left even more vague. The message seemed to be that the institutions of shared governance (with strong faculty input) were slowing down the capacity for entrepreneurial spirits to do their important work, and that if we are to do that important work, those institutions may have to be curtailed.

Now, I should say that I have respect for what Ben (and Jerry) have accomplished. It takes innovative and courageous folks to change the way business is done, and while I don't believe that selling ice cream will feed the hungry or clothe the poor, the profits generated from commerce can be used in constructive ways and can be shared more (as opposed to less) equitably among everyone involved.

But the attack (as I heard it) on faculty "power" and the simultaneous appeal to student "power" sounded a bit too familiar. The skeptical analysis that kept ringing in my ear is that this sounds too much like the arguments that have been used, for two or three decades now, to induce changes that allow entrepreneurs and investors to make institutions (universities, governments, cities, nations) more competitive and profitable for their shareholders in the global marketplace, and less accountable to the people they are supposed to serve. This is what sociologists and social geographers call "neo-liberalism" -- i.e, getting traditional (democratic) governance structures out of the way to free these institutions up for investment by and for the global economic class. It's all carried out under the banners of "participation," "diversity," "sustainability," "globality" or "globalization," "the future," "world-class status," etc., so as to get support from enough people to render resistance futile; but, in the process, all that active involvement (e.g., the ideas generated in public brainstorming sessions like today's) is whittled away as an administrative-corporate alliance gets carte blanche to do whatever it decides is necessary. Inevitably, it will mean "belt-tightening" in all those sectors that are perceived to be less than crucial -- e.g., social services at the national scale, public spaces at the urban scale, liberal-arts programs at the university scale -- while new corporate-administrative and "entrepreneurial" "partnerships" will be created to facilitate investment into those sectors that will make us more "competitive."

In the case of UVM -- or anything Vermont -- it's easy to see how the environment can become a selling point: how green (environmental) can become green (profitable). But the ultimate result, my inner skeptic says, may be that there is a class of people (investors, administrators, boards of directors) who benefit from the process, and a large swath of people who are invited to enjoy the results but who end up losing the shared, public cultural institutions that are their right as citizens.

All that said, I suspect that this wasn't the intended message -- that Mr. Cohen had probably not thought through all the implications of his comments, or that the organizers' intent was less to showcase him as the ideological leader of a movement and more to incite students to come (free ice cream being pretty cool, I would think), or that my imagination got sidetracked by an anecdotal dimension of his speech and missed the general message. But on the suspicion that I might not be the only one to have heard his speech this way, or that others might react similarly if this becomes a recurrent theme in the discussion, I would like to suggest two elements that should be part of the picture of the "UVM of the future":

- (1) That large-scale institutional makeover projects (such as this one and others that come in its wake) should have active and ongoing participation from a cross-section of the university (including faculty, staff and students, from across the full range of schools and

programs) and the communities it serves -- including not only entrepreneurs and business people, but democratically elected and demographically representative segments (and among them those that have traditionally not benefited from the institution).

(2) That this contributes to a broad revisioning of what a university could be, both in itself (as institution, community, etc.) and for the various communities it serves -- as employer, educator, inspirational leader, standard-bearer, facilitator of economic and technological and community development projects, institutional citizen, global partner (with other institutions), etc. If Vermont and UVM are to be special, it won't be enough to be able to sell a "green" image: we will have to lead by showing how a university can become better integrated with the local and regional communities and institutions that are its natural partner (in which businesses may play a role, but should hardly be the leading one), with the global networks (of researchers, institutions, and social movements) that serve as its intellectual community and cultural playing field, and with the needs of society and the world at large.

All those other creative ideas that emerged at the forum -- from eco-design and carbon-neutrality (or zero-carbon) to local foods and community partnerships -- can follow from these principles. But without them as starting points, I fear that attacks on faculty governance could result in -- and will certainly be seen as an attempt at -- further corporatization of the university into becoming a handmaiden of the private sphere. Private enterprise can help develop useful technologies -- which is what many of the above ideas require -- but it is far less likely to solve the problems of poverty, wealth imbalance, and democracy deficit that, arguably, underlie the environmental crisis.

Fortunately, besides the "ivory tower" and the "corporatized" university models, there is a third model that sees universities as public brain trusts as well as institutional leaders, cross-sector collaborators, and community agorae. Historian Theodore Roszak once called for a "neo-monastic communitarianism" in which universities -- like the medieval monasteries that maintained book learning through the European "dark ages" but also became centers of technological innovation and checks on the power of monarchs and emperors -- would become networked centers of innovation and the dissemination of knowledge, and would serve as the organizing elements of the culture that would arise when the "military-industrial-entertainment complex" loses its ability to keep us all mesmerized. Roszak's model suggests a certain withdrawal from the "dominant society," while our moment calls for engagement with the world, but we need to remember that the world we should be engaged with is not the private one of consumers, clients, and investors (or accountants of social and natural "capital"?), but the public one of citizens sharing political and biotic spaces that are all under threat.

I recognize that today's meeting was an attempt to generate public discussion -- a step toward bringing "sustainability" into the agora that is UVM -- and not an indication that business entrepreneurs are the ones best equipped to lead on this issue. I have great respect for those who have developed this initiative, and I hope that the process continues, grows, generates excitement (and funding), and that it succeeds. I believe we - UVM, Burlington, Vermont -- have what it takes to become a genuine leader in

revisoning what it means to be a university in an era that calls for radical social and environmental change.

But the road we tread can breed resistance unnecessarily, and I fear it will do that if faculty and shared governance are seen as problems to be eliminated in order to allow coalitions of administrative and corporate leaders (who are traditionally more accountable to shareholders and “clients” than to citizens or society as a whole, let alone to the earth) to make the changes they think are necessary. Let’s make sure the process is inclusive and the vision is broad and deep.

Respectfully,

Adrian Ivakhiv

P.S. I’ll be sharing the results of the “visioning” process that my NR2 class has been undertaking when those results are in. The students’ ideas for “strategic initiatives” by which the School, the university, and the community can address the environmental crisis more effectively are due next Monday, and we’ll synthesize and summarize them soon after that. Hopefully a few new ideas may emerge, or at least a useful snapshot of what RSEN students are thinking these days.

**Subject:** ideas

**Date:** Wed, 2 May 2007 13:24:18 -0400

**From:** Adrian Ivakhiv

**To:** <sustainability@uvm.edu>

**CC:** <Robert.Costanza@uvm.edu>, <donald.dehayes@uvm.edu>, "Cameron Davis" <cdavis@uvm.edu>

Now that I've gotten those doubts off my chest (and I'm hoping that as the process for "remaking the university" becomes less opaque, those doubts will dissipate for others as well), here are a few specific suggestions:

1) **Institute for Global Studies and Environment:** This would combine the environmental and global strengths of the university and the surrounding community (city and state), refocusing curricula as well as local and international research initiatives around UVM's and Vermont's connection to the world, and around the connection between environmental and political-economic issues. This could build on existing strengths in this area – including programs (International and Area Studies programs, the existing global studies program initiative, the environmentally and globally oriented student dorms, and many area-based NGOs such as the Civic Education Project, Burlington's refugee resettlement program, et al.). It would further develop links between UVM research/teaching conducted in other parts of the world, so that work on environmental issues (e.g., RSENR and ENVIS faculty work in Ukraine, China, Latin America, et al.) could be combined with other work being done on social and political issues in these same areas by faculty in Asian Studies, Russian and East European Studies, Latin American Studies, CDAE, et al., resulting in new synergies between fields that have been disconnected in the past. I fear that the predominant focus (at Monday's forum) on a kind of eco-localism will alienate some of the many people who need to be brought "on board" with the "revisoning UVM" initiative; this kind of local-global bridging effort could offset such negative reaction.

2) **Eco-Arts Biennale and Summer Institute:** A similar bridge needs to be built between the humanities/fine arts and environmental initiatives and programs on campus and in the community. We have been trying to build bridges between faculty through the Rubenstein School's Environmental Thought and Culture concentration (through the Center for the Humanities, etc.), but these are baby steps and they risk "stepping on toes" in fields that are already well represented on campus. Something much broader – such as a new center or institute – initiated by faculty in several programs and with the participation of local artists, architects, activists, et al., around themes of relevance to the community and the university (e.g., sustainable transportation, eco-design and architecture, eco-restoration art, refugee and border issues - Burlington being close to an international border, etc.) could be an important piece of "the UVM of the future." There are moves in this direction, but they should be strengthened through faculty hires (e.g., an Environmental Artist-at-Large), exhibitions (an biennale held every second summer in Burlington), competitions, grant projects (e.g., building on John Todd's class work on

redesigning the waterfront, but working with the city, developers, and artists to actually make it happen), etc., all featuring more interaction between “town and gown” and building on UVM's and Vermont's strengths in environmental, eco-design, progressive/civil society activism, and natural and cultural resources (e.g., as a desirable summer location, a summer Eco-Arts Institute and Environmental Art Biennale could attract people from all over the world).

Adrian Ivakhiv

**Subject:** Information nation

**Date:** Tue, 01 May 2007 08:40:35 -0400

**From:** Mara Saule

**To:** sustainability@uvm.edu

Unfortunately, I was not able to stay at yesterday's visioning session after the first round of open forum ideas were generated. Quite a daunting and wide-ranging list! I do want to contribute a couple of vision elements, however, post-visioning day:

1) In order to make sound and informed decisions, we need sound information. And, we need that information at all points in the decision-making process--regardless of time and place. Therefore, members of UVM 2020 will have the ability access, find, evaluate, and apply information to research and policy questions. In order to do this, information (such as source data, studies, research reports, policy papers, analyses, opinion pieces, etc.) needs to be readily available via searchable databases at the desktop, laptop, hand-held device--wherever and whenever necessary. University citizens also need to be information literate: meaning, they need to have the critical thinking skills to determine the reliability of any given piece of information and to assess its value to any given question. They also need the analytical and communication skills to integrate information and present it in a meaningful, even transformative, way--integrating as well their own original research or creative activity. We are, after all, a community dedicated to truth and beauty.

2) We also need to make available to the world the unique artifacts, artwork, documents, original scholarly work of our students, faculty, staff, and Vermonters at large. Therefore, we need to create digital collections of these unique Vermont and UVM materials in order to tell our story to the world. UVM will bring the world to Vermont, and Vermont to the world.

Just some thoughts. Hope they contribute something.

Thanks for reading. More later...

Mara

---

Mara R. Saule  
Dean, University Libraries and Learning Resources  
113 Bailey/Howe Library  
The University of Vermont  
Burlington, VT 05405

**Subject:** living machine(s)

**Date:** Tue, 01 May 2007 09:21:30 -0400

**From:** Vera Rae Simon-Nobes

**To:** sustainability@uvm.edu

I think all of the university's waste should go into a living machine.

Maybe we could have multiple living machines, for each part of campus, or maybe one large one- whatever is most sustainable. We have an excellent resource in John Todd and I urge the university to use him more than we already have.

**Subject:** Sustainable Building Design

**Date:** Tue, 01 May 2007 10:51:34 -0400

**From:** Deborah Alden

**To:** <sustainability@uvm.edu>

Hi,

I just read the release on Envisioning the UVM of the Future and noted President Fogel's remarks on the desire to see UVM as a leader in sustainable living and working. Could you please tell me in what way the new student center is a beacon of sustainable design, given that it is the newest of the buildings on campus?

Thanks,

Deborah Scott Alden, '82

**Subject:** RE: Sustainable Building Design

**Date:** Tue, 01 May 2007 14:06:12 -0400

**From:** Deborah Alden

**To:** 'Sustainability' <sustainability@uvm.edu>

Thanks for your response. It's just that the student union is such a visible piece of current development that I would think it's a flagship project for sustainability through design and use.

Deb Alden

**Subject:** No need to wait for 2020

**Date:** Tue, 01 May 2007 17:15:51 +0000

**From:** Gene Beaudoin

**To:** sustainability@uvm.edu

Send a group to Norway asap to see HyNor and go hydrogen transportation on campus and maybe CCTA too.

Narrow or eliminate Main Street. (HOV or hydrogen only)

Open the Southend Connector (fully)

Complete the 89-189 interchange

Have Saga buy only local organic and from Whole Foods.

Get to 2020 by leading through example.

If there is a distribution list for the coming events, please add my name.

Gene

'73

**Subject:** UVM 2020

**Date:** Tue, 01 May 2007 13:27:23 -0400

**From:** Alison Maynard

**To:** sustainability@uvm.edu

What a great event yesterday!

I would like to be included in any future planning or events.

Good work,

Alison

--

Alison Maynard  
State Outreach Coordinator  
University of Vermont  
Continuing Education  
322 South Prospect Street  
Burlington, VT 05401

**Subject:** Sustainability ideas

**Date:** Tue, 01 May 2007 21:11:11 -0400

**From:** Kayla Justine Decarr

**To:** sustainability@uvm.edu <sustainability@uvm.edu>

I think that the University should buy environmentally friendly products. Of course we should have fair-trade products, but we should address things other than food. We should use products transported here in a more environmentally-friendly way. Also, we should not sell coke products on campus. They commit awful environmental abuses around the world ([www.killercoke.org](http://www.killercoke.org) / [www.indiaresource.org](http://www.indiaresource.org)) & we should not condone such behavior at "The Environmental University." Also, we get all of our toiletry products from Kimberly-Clark. They refuse to stop cutting virgin forests & have polluted areas around the country, causing high rates of cancer near its processing plants. We should make every purchase keeping the environment in mind. We should address the global environment as well as just that of our town and campus.

Kayla DeCarr

**Subject:** My ideal university

**Date:** Tue, 1 May 2007 15:22:42 -0400

**From:** Amy Boyd

**To:** <sustainability@uvm.edu>

In my mind the perfect University has:

- a faculty and staff that respect and value one another, knows and understands what each offers, and works towards a partnership of working collaboratively.
- a comprehensive mission and purpose - meaning that efforts are collaborative and coordinated so that programs, colleges, presentations, speakers, etc. aren't competing with each other, but complementing each other to offer well-rounded opportunities to all;
- a commitment to multiculturalism that is reflected in how it looks, feels, sounds, tastes, smells, etc. Again, it's important that this cross staff-faculty-student-administration lines, hierarchical lines, and is integrated into all academic courses, residence hall experiences, dining, living, and daily experiences. It's also important that the folks at the top invest energy in understanding the issues and integrate them into their daily language and action.
- a culture where students feel free to explore who they are without necessarily engaging in behavior that puts their lives at risk (alcohol and other drugs).
- an environment where alcohol and other drugs play a very small role in experimentation and "the college experience".
- an environment where learning is exciting, you are encouraged to explore various areas, and get tuned in to issues beyond your major, your res. hall floor, or your group of friends; an environment where you think more globally, think about the impact of your actions on others, both near and far, and start acting towards solutions, or at least impact. An activist community.
- opportunities for students to grow, learn and develop as individuals and responsible adults.

Amy D. Boyd MSS, LSW  
Director of Health Promotion  
University of Vermont  
Center for Health and Wellbeing  
436 S. Prospect Street  
Burlington, VT 05405

"There are two ways of spreading light; to be the candle or the mirror that reflects it."  
Edith Wharton

**Subject:** VISION STATEMENT

**Date:** Wed, 02 May 2007 15:02:23 -0500

**From:** robert herendeen

**To:** sustainability@uvm.edu

EVEN ORR WANTS A CORE {CURRICULUM}.

When (at the visioning session 30 April 2007) I said all students should take a thermodynamics course, I had in mind a passage from chapter 1 of David Orr's book "Earth in Mind":

No [post-secondary] educational institution should graduate a person without basic comprehension of things like:

- o laws of thermodynamics
- o basic principles of ecology
- o carrying capacity
- o energetics
- o least-cost, end-use analysis
- o limits of technology
- o appropriate scale
- o sustainable agriculture and forestry
- o steady-state economics
- o environmental ethics.

Orr lays this challenge on all colleges. My 2020 vision for UVM is that it is a leader in environmental learning and doing, and that therefore UVM will have been far ahead of the crowd in responding.

Problem-based learning and cross/trans/interdisciplinary teaching are crucial to an environmental curriculum. So too is student participation in life-support (I also said that students should empty the garbage and pay their own electric bills). This does not diminish the need for a rigorous core. It is certainly possible that the concepts (with details) in some version of Orr's list can be learned outside of many of the standard courses as we know them today (in spite of what I said about thermodynamics), but they need to appear visibly and rigorously somewhere. If they are well-integrated into innovative, non-traditional student experiences, all the better. .

"Core" is a loaded term, with ardent advocates and detractors. But there are two reasons why it is especially important for an environmental curriculum and campus looking forward from today. First, one needs a minimum skill set to function in an interdisciplinary setting. For example, one need not be a power engineer to discuss possible cogeneration from the McNeil Plant, but it is important to know the difference between a kilowatt and a kilowatt-hour, and why thermal power plants produce waste

heat.

Second, today's curricula are typically so lacking in most of the key issues in Orr's list. 2020 is a mere 13 years away, less than a generation time. We have to push. A dedication to a core accelerates the process.

---

Robert A. Herendeen, Ph.D.  
Fellow, Gund Institute for Ecological Economics  
University of Vermont  
Burlington, VT 05401

**Subject:** envisioning UVM

**Date:** Wed, 02 May 2007 17:18:08 -0400

**From:** Katharine Anderson

**To:** sustainability@uvm.edu

Hi,

So what happens to ideas sent to you online? What will you do with them? Where will they go? Who will see them? Having suggested things in the past that disappeared into a black hole, I'm wondering if it's worth the time and effort to actually do this.

Thanks,

Kit Anderson

**Subject:** Free Education/Diversity Group Notes

**Date:** Thu, 3 May 2007 12:03:09 -0400

**From:** Azur Moulaert

**To:** Matthew Sayre

I am not sure if these were handed out to you last Monday pm:

- 1) Minimize our Ecological Economic Footprint
- 2) We need not only to define "Free" (how to pay, who, when) but "Education".
- 3) A task-force should be created to look at other "Free" education systems abroad and in the US
- 4) Talk to groups like VBSR to promote a culture of continuous education
- 5) An investment in human capital improves the quality of life of our society
- 6) If we agree that information should be free then by the same token education.

Best,

Azur

Azur Moulaert  
Ecosystem Services Project Manager  
University of Vermont  
617 Main Street, Burlington, VT 05405  
Website: <http://www.uvm.edu/giee/>

**Subject:** Computer monitors

**Date:** Mon, 7 May 2007 17:28:26 -0400

**From:** Coolidge, Krystal

**To:** <sustainability@uvm.edu>

Hello,

I was wondering if the monitors on the computers in the libraries and clusters around campus are shut off every night or if they just go into sleep mode? I've heard that about 60% of the energy a computer uses is used by the monitor. Isn't there a way to program the computer to shut off its monitor after a period of inactivity rather than just go into sleep mode?

Thanks,  
Krystal

**Subject:** Thoughts Toward your Sustainability Goals

**Date:** Wed, 16 May 2007 16:50:26 -0400

**From:** RL Morris

**To:** sustainability@uvm.edu

Good Morning,

I'd like to start by applauding your visions and end goals, in your 'Sustainability' campaign. And also, the care that you are employing in moving toward those aims. Your inclusion of local voices to help explore additional measures and structures, during the formative stages, sounds like a recipe for success.

As a local professional, I'd like to offer one insight which could be key in advancing your overall concept: You have identified "Innovation" and "Design" as cornerstones in your pursuit... However, UVM offers zero curriculum in PRODUCT DESIGN/ INDUSTRIAL DESIGN. (nor does any other private or State college in Vermont, for that matter).

If you are not familiar with this career field, it is easily forgivable... as this would not put you in a small minority of the American public. Industrial Designers are the innovators and free-thinkers responsible for creating new product concepts. To be effective in this arena, you must be part inventor, part futurist, artist, engineer, sculptor, ergonomics expert, and skilled in all materials and manufacturing processes, etc. I often find it easier to explain what I.D. is, by explaining what it is not... Everyone knows what architects, fashion designers, and interior designers do... But who designs everything else? Your automobile (inside and outside), your lawn mower, stereo, hand tools, housewares, ski boots, computers, etc. Basically, all new product concepts and their packaging! A balanced mix of Art and Science, or Form and Function.

To my knowledge, no college in Northern New England offers this field of studies. Although, a few schools in Southern New England do offer these courses, none of these would fall into the category of "most respected". The most respected schools for I.D. are located in Los Angeles and Detroit--- in short, nowhere you would prefer to spend four years of your life. UVM is located in an idyllic setting, but does not offer a degree in Design. Out of all the colleges within the US that do offer Design, I cannot think of one that we might consider being in a desirable location. This gives UVM an extra edge, when a prospective student considers his, or her, options in choosing a college.

I perceive the lack of Design Studies at UVM to be a 'hole in the fabric'. But, it would not take a major effort to incorporate Design into your current field of studies. Much of the required personnel and infrastructure is already in place. UVM presently has well established Engineering and Art departments, plus shop facilities... you are already 90% of the way there!

Also, I am not aware of any design schools in the US that emphasize a 'green mentality' in their courses. So, I could envision UVM offering 'Design' as a major... with a 'year 2' or 'year 3' option to choose between a concentration of 'tradition' or 'green' design (or even allowing a mix of the two).

College students often choose to remain in a familiar and desirable location (such as Burlington) after graduation. And design students always have their own 'pet projects', that they've developed through school, and would like to get off the ground after graduation. These two ingredients provide the perfect 'petri dish' for new and innovative start-up companies to take root here in Vermont. This approach could also include participation from the UVM College of Business.

If I have piqued your interest in exploring this option further... I will happily make myself available to answer any dangling questions, or even in helping to formulate and enact this into reality.

Best Regards,

R. L. Morris, IDSA  
Burlington, VT 05402

**Date:** Wed, 16 May 2007 13:22:19 -0400 (EDT)

**From:** Osh josh

**To:** sustainability@uvm.edu

TRAINED MONKEYS ARE THE SOLUTION OF EVERYTHING

**Subject:** RE: UVM LBD Task Force Mtg. Agenda 05-21-07

**Date:** Wed, 16 May 2007 10:06:08 -0400

**From:** Will Raap

**To:** Sustainability <sustainability@uvm.edu>

**CC:**

As we agreed at our May 7 meeting, please add "transformational ideas for UVM" to the May 21 agenda. The idea I proposed that came from the 4/30 event was to reconsider district heating for FAHC and UVM (recognizing we are thinking long term). District heating from the McNeil Plant uses a City-owned asset and VT-grown fuels, both increasing local sustainability.

Will

**Subject:** survey from a Mac

**Date:** Tue, 15 May 2007 12:51:18 -0400

**From:** Barbara Benton St. Gelais

**To:** UVM Sustainability <sustainability@uvm.edu>

What would the campus look like?

Green spaces, no pesticides, passive and active solar, wind generation on tops of the buildings, and less waste with overheated and overcooled buildings. Fume hoods in laboratories would be kept closed except when in use.

What kind of energy would power the campus?

100% renewable energy sources, especially utilizing heat produced at the McNeil Generating Plant.

How would people get to and move around campus?

Pedestrians, scooters, great sidewalks and all electric service vehicles. Small electric transportation devices, like golf carts, on pedestrian campus specifically for staff and faculty. With regular routes and high frequency.

What food would we eat and where would we get it?

Local food from 200 mile radius, with a contract for a local company to oversee it, not a huge company like Sodexo. There would be offerings like yogurt without sugar, and other items friendly to people with food allergies. Food would be certified organic and cruelty-free and creatively prepared.

How would the curriculum look and work?

Much more curriculum on sustainable lifestyles within the community of UVM and the greater Burlington as well as Vermont and USA and world arenas.

How would the university be run?

With input from all groups and with sustainability in mind. All staff would be unionized and management and unions would work together for a better workplace. There does not have to be an adversarial tone to negotiations or the existence of unions on campus.

If you were to write the mission statement, what would it be?

Add 'sustainability to the seventh generation' in the way that everything is done.

How would people be rewarded for their work?

People would be compensated commensurate with the dedication and ingenuity they show in accomplishing their job goals. This would mean bonuses would be awarded for work above and beyond what is required.

How would the university help solve the problems of Burlington, Vermont, the US, and the World?

First by getting heat from the McNeil Plant, creating a sustainable culture in every respect. No throwaway cups (or very expensive) available at university concessions.

Reward people who bring their own utensils and containers. Sustainability degrees offered.

How would the university be structured to function in a more integrated way?  
Communication within and between departments, especially Physical Plant to other members of the community, would be required and esteemed. There would be staff members in Eco-rep type roles to promote sustainability and what individuals can do and bring feedback where it needs to be brought to others regarding too hot/too cold/wasteful use of resources.

What other visionary ideas do you have for the ideal university in 2020?  
Custodians would do their work for us on day shift and be allowed to enter freely in doors used by all staff, faculty and students, where they can be seen and appreciated for all they do for our community. This is both a social and a safety issue.

**Subject:** Re: Help Envision the UVM of the Future!

**Date:** Tue, 15 May 2007 10:59:13 -0400

**From:** Mack Gardner-Morse

**To:** sustainability@uvm.edu

Dear Leading by Design,

The UVM of the future would use SMART Board interactive whiteboards that would save the lecture notes electronically for students (including those with learning disabilities or handicap) to retrieve and access these class notes at their leisure. New England College (<http://www.nec.edu>) has a good model for the use of technology in the classroom.

Sincerely yours,

Mack Gardner-Morse  
University of Vermont  
Department of Orthopaedics & Rehabilitation  
401C Stafford Hall  
95 Carrigan Drive  
Burlington, VT 05405-0084 USA

**Subject:** Survey

**Date:** Tue, 15 May 2007 08:46:13 -0400

**From:** Ralph Budd

**To:** [sustainability@uvm.edu](mailto:sustainability@uvm.edu)

Here are my responses. The website does not work for MACs.

What would the campus look like?

Fewer parking lots and more trees. Will also need future buildings to go vertical as we are on a fairly small footprint for the size of the student body. We should also pursue surrounding real estate, as we did with Trinity. Excellent acquisition.

What kind of energy would power the campus?

(Would it be carbon-neutral? Would it run completely on renewable energy?)

Solar and wind for sure should be included. I think local windmills make more sense than large farms of them.

How would people get to and move around campus?

Will hopefully have more efficient cars by then, but light rail down major corridors is a thought. I would use that.

What food would we eat and where would we get it?

More local produce

How would the curriculum look and work?

Quite possibly much the same style of academic rigor. Bottom line is to poster a high academic bar and preserve an atmosphere of collaboration and creativity.

How would the university be run?

It should always have one individual as President.

If you were to write the mission statement, what would it be?

To promote an institution that fosters creative thinking and collaborations in achieving scholarship and teaching.

How would people be rewarded for their work?

Faculty rewarded both through teaching ability AND their original scholarship.

How would the university help solve the problems of Burlington, Vermont, the US, and the World?

Universities are nuclei of creativity. The U.S. research university is one of the great success stories of America.

How would the university be structured to function in a more integrated way?  
Successful universities will always be those that recognize that all fields change amoeba-like with time, and hence departments need to do the same. "Centers" are becoming popular alternatives to traditional departments, but I think that does not really change the need to have departments, but make sure that have built in flexibility.

Ralph C. Budd, M.D.  
Professor of Medicine  
Immunobiology Program  
The University of Vermont College of Medicine  
Given Medical Building D-305  
89 Beaumont Avenue  
Burlington, VT 05405-0068  
USA  
<http://www.uvm.edu/~rbudd/>

**Subject:** FW: District Energy

**Date:** Mon, 14 May 2007 17:04:13 -0400

**From:** Will Raap

**To:**

**CC:**

Hello UVM Sustainability Task Force,

Below is an email exchange follow-up from my group and from individual discussions at the April 30 event. Megan Epler Wood is a concerned Burlington citizen involved in long term sustainable energy strategy who attended the April 30 event. Doug Hoffer is a former BED Board member who does not now represent BED. Doug is a leading sustainability thinker and his ideas to get FAHC (a party to our Sustainability Task Force discussions) and maybe UVM (in the future) back on the district heating path is worth our consideration, don't you think?

Sure, UVM has invested in their own steam generation. But we agreed to think in century-long terms, and district heating with BED, using VT wood-fuel and co-gen, then makes sense as a solution to the UVM energy footprint problem. And imagine the value (economic and PR) of FAHC, and later maybe UVM, helping BED advance a long term heating solution that's better for the environment and the economy funded by revenue from renewable energy credit payments coming from outside VT.

Why not explain the economic and PR value (for UVM and VT) of this district heating direction to Pres Fogel, just as was done regarding LEEDS green building certification by Amory Lovins, Bob and others? That effort was able to help shift short term economic thinking to longer term economic/ecological thinking.

Will

PS Doug did the "Leaky Bucket" report in VT in the late 1990's about the main import challenges reducing VT's self-reliance and sustainability: food and energy. Maybe we should invite Doug to review those findings at a future Task Force meeting as food and energy also topped the list of key problems/opportunities at our April 30 meeting.

From: Doug Hoffer  
Sent: Monday, May 14, 2007 1:10 PM  
To: Megan Epler Wood  
Cc: Will Raap  
Subject: Re: District Energy

Megan

UVM has made some decisions over the last decade that make it more difficult. For example, they invested a lot of money in another boiler and have expanded their commitment to steam rather than moving to low temperature hot water (much more efficient). So for now, UVM is not a good candidate. However, FAHC has always indicated a willingness to work

with BED and should be considered a potential partner. For its part, BED

is still very interested but is reluctant to spend the money required to

update all the engineering and other analyses without a solid partner willing to share the costs (probably \$100,000 - \$200,000). There is also

the continuing issue of the cost of piping the thermal energy up the hill. It has been assumed all along that part of this capital cost must be off budget to make the energy cost competitive.

Having said that, there are a few encouraging signs. First, if MA and CT

adopt renewable energy credits as expected, the McNeil plant will be able to sell the "REC's" at a premium. In order to become eligible, BED must invest a considerable sum in new NOx equipment to reduce emissions.

But if all goes well, this investment could be repaid within a few years. If so, there will be a new stream of revenue for BED. As you can imagine, BED & the City would like to use it in part to reduce rates, which were just raised dramatically. But if we can persuade BED (and the

PSB) to use perhaps two years of the new (post-NOx payback) revenue for the needed capital costs of the piping, we could get this done.

Obviously, that's a lot of ifs. But it does present at least the possibility of getting this long delayed but worthwhile project off the ground. I'm very pleased to hear that residents are interested. The more

people who advocate for this the better. Let's stay in touch.

Note: The foundation grant Will referred to is an exciting opportunity but UVM would have to invest a lot of money to switch the system from steam. At present, some at UVM continue to focus on building a new gas fired power plant on campus. This is a longer discussion but cannot be ignored for a lot of reasons.

Cheers - Doug

Will Raap wrote:

>Megan,

>I certainly pushed the district energy option in my discussion group for >the UVM "planning a 2020 sustainable university" workshop. The UVM >facilities person in my group implied that train left the station. But if >you look at the McNeil asset and how to enhance its value long term in an >era of ever increasing oil costs district heating NEEDS to be on the table, >I think. A receptive UVM and Hospital could help bring all trains back

>to the station, but leadership for sustainability is needed. The \$15mm >Lewis Foundation grant being dangled in front of UVM might help open >minds...

>

>I'll copy Doug Hoffer on the district heating issue as he has watched >this debate closely as a BED board member and a CEDO employee. Doug, is >the district heating option still an option?

>

>Will

>

From: Megan Epler Wood

>Sent: Tuesday, May 01, 2007 11:50 AM

>To: Will Raap

>Subject: District Energy

>

>Dear Will,

>

>It was good to see you yesterday. Did you participate in the groups and

>was there a discussion of using the McNeil plant power at UVM? I

>brought it up in my group, which was on open architecture learning

>within the community. It struck me that students could be well used to

>study how to make this energy source accessible to UVM.

>

>I have been active in local Eco-teams in the Hill Section organized by  
>the Unitarian Society originally. After reviewing our own carbon  
>outputs and seeking to lower them in our own households, we also looked  
  
>at how to lower our community carbon impacts. We have sought to work  
on  
>the question of District Energy as one of our initiatives. We have  
>quite an extraordinary community group working on some of these energy  
>issues. We would be interested to know if the District Energy option  
is  
>still an open item for discussion at UVM. It was our understanding  
that  
>it has been turned down.  
>  
>Best,  
>Megan Epler Wood

**Subject:** Design Thinking

**Date:** Fri, 25 May 2007 11:16:55 -0400

**From:** Frank C. Owen

**To:** sustainability@uvm.edu

Dear Envisioners;

I was able to attend the beginning and the end of the recent gathering in Billings. I applaud that effort and the larger project. I am a professor of art. I am also a lifelong student and enthusiast about "design" as it applies to architecture and object creation. This involvement entails an accompanying interest in thinking about design as a conceptual and effective process. Many of the central concepts embedded in the current undertaking are continuations of a line of development dating to the 19th Century Arts and Crafts movement and extending through the Bauhaus, Buckey Fuller, and the Post-war Design theory and practice that proposed the of the multi-disciplinary merging that is now taking place (there's a Fulleresque sentence for you). It has been and is exciting to witness this development for fifty years. I hope to be able to participate as the UVM project advances. For the moment, as I am trying to get back into my studio for the summer's work, I would call your attention to the new Institute of Design at Stanford, the "d. school." It is a model that incorporates many of the large ideas that underly contemporary design thinking and teaching. The faculty is broadly inclusive with engineers, planners, materials scientists, environmental specialists, graphic and product designers, business school professors and many other fields represented. This approach is being implemented in a number of other settings, particularly schools that have a strong involvement with design studies as part of their curriculum. I do not believe that Stanford has had such a program and the "d. school" is the result of both a significant donor and an "envisioning" that recognizes the complex integration of intellectual, inventive and material resources that has yielded the high-tech habitat of Palo Alto and Silicon Valley.

UVM is, given this "Envisioning Sustainability" enterprise, in a similar if geographically different place. The issue of sustainability is at least twofold. At the most important level, it involves the viability of life (human and otherwise) on the planet. At another level, it is about the sustainability of the University of Vermont as a small but vital institution of learning and leadership.

Some of the language of the mission statement proposes grand ambitions. That is fine. But as an artist and teacher whose course content includes much that has to do with creative process, I encourage recognition and support for maverick thinking and sometimes small ideas that grow to have large import. The lamentable history of the 20th Century provides considerable evidence that the folks with "BIG IDEAS" can cause trouble. Vermont is a small place and that is a sustainable value worth investigating and, perhaps, transmitting to aid in transforming a larger world.

Thank you for your continuing efforts,

Frank Owen

**Subject:** Input

**Date:** Wed, 30 May 2007 15:45:34 -0400

**From:** Chris Koliba

**To:** sustainability@uvm.edu

As a faculty member with 30 more years of service to UVM ahead of him, I feel that I am deeply committed to developing an institution that is on the "cutting edge" of many interconnected endeavors:

- \* Faculty and students should be working across disciplines to address pressing social, environmental, and political problems. This will mean developing new incentive structures; more interdisciplinary units that span several fields of knowledge.
- \* Faculty and students should be working within communities to addressing pressing social, environmental and political problems. This will mean more incentives to support the development of more service-learning courses, community-based research projects, and multi-discipline action research teams. This will also mean reforming the faculty RTP guidelines across all pertinent colleges and departments to reflect and support faculty's work within communities.
- \* The campus itself should be a laboratory for the incubation of local economies and markets. Food services should "serve local foods" first whenever possible. The Davis Center should be a magnet for local artisans, farmers and social entrepreneurs who wish to share their wares and collaborate with UVM faculty, staff and students.
- \* UVM should capitalize on the virtues of the state of Vermont and the city of Burlington, where progressive policies combine with strong social capital and a pragmatic spirit to cut across differences to improve the quality of life for all. Therefore, UVM must play a more active role as a corporate citizen actively involved in partnerships with governments, non-profits and businesses.
  - o UVM should forge a substantive partnership with the state government to serve as an "objective" source of policy-related information and research. This will serve our students and the state very well.
  - o UVM should work to support the non-profit sector, much like it does for small businesses.
- \* UVM should cultivate the "scholarship of engagement" as a part of its intellectual core. It should support ongoing scholarly discussions about the relationship between knowledge production and advancing the common good (a notion addressed by John Dewey) and integrating fields and systems (e.g. systems theory/thinking).

Christopher Koliba, CDAE

**Subject:** A Vision

**Date:** Wed, 30 May 2007 15:44:18 -0400

**From:** Lawrence Shelton

**To:** sustainability@uvm.edu

At Chrysanne's urging, I have drafted the attached statement.

### **Ecovision Statement 2007**

**Lawrence G. Shelton, Ph.D.**

**Associate Professor  
of  
Human Development and Family Studies**

President Fogel and Provost Hughes have committed to leading UVM toward a future as a “world leader in ecosystem thinking, learning, and sustainable design...” Transforming their vision into reality will require application of ecosystem thinking and sustainable design to the university itself, to the curriculum, and to our understanding of how faculty work and how students learn. Faculty will need to develop our own understanding of how systems thinking applies in our own work. We will need to emphasize ecosystem thinking and sustainable design in our scholarship and our courses. To be a world leader in ecosystem thinking will require that we define one of the outcomes of a UVM education, for every student, to be development of the ability and the disposition to understand and to plan ecologically.

Ecosystem thinking and sustainable design apply to all domains of the universe. Human systems, such as health care, education, business, and governance, are also ecological systems, and can be designed to sustain and promote health, social well-being, understanding, and development of participants at all ages.

UVM can become the first university to recognize that the future requires educated people to think ecosystemically. UVM can be the first university to implement that recognition across its entirety. UVM can lead the world in understanding that ecological thinking applies not only to the natural world, but that systems thinking is essential to understanding all life, and all activity. UVM can be the first university to encourage study of the human ecosystem at all scales. Further, UVM can be the leader in promoting understanding that ecosystem thinking is also developmental, or as I call it, “develeological.” A develeological view takes into account that change itself is a process that must be understood if we attempt to design change from a current state to a desired future condition.

Systems thinking, or ecological thinking, takes us beyond “critical thinking” to understand how elements of a system are related to each other, and how transactions in

any part of the system are shaped by the system and have the potential to alter the system. Sophisticated systems thinking encourages exploration of the interrelations of systems to each other, toward recognition, for example that the “economic system” is complexly related to the “health care system.” Mature systems thinking leads not to being overwhelmed by the complexity of the world, but to awareness that indeed “everything is related to everything else,” and that action in any part of a system, or of our lives, has the potential to influence, and to enhance, other parts of the system.

An early step toward making UVM the truly ecological university would be to survey the many current curricular activities that attend to teaching students to think ecologically. Convene a local conference on the processes of learning to think ecosystemically, and techniques for teaching students to think ecologically in the various disciplines and professions.

If we were to make significant progress toward the future as a leader in ecological thinking, in 2020 UVM would be distinguished by:

#### A Campus with

More interdisciplinary centers and less isolation of faculty and students into departments

#### A Curriculum with

More interdisciplinary majors

More emphasis in each major on systems thinking

Individual design majors based on coordination of two or more systems of thinking

Service –Learning, Honors, and course projects focused on multi-disciplinary approaches to develeological and sustainable design addressing local and global issues

Fewer barriers to course-work across departments and colleges

Team-taught advanced level courses taking multi-disciplinary approaches to complex topics

#### Rewards for work with

Greater encouragement and recognition of collaborative teaching and scholarship

Greater encouragement of joint appointments

Incentives for development of ecological perspectives in courses

Incentives for teaching that incorporates non-academic experts and off-campus sites

Incentives for courses that address problem-defined subjects, rather than discipline-defined subjects

Efforts to help solve the problems of Burlington, Vermont, the US, and the world through

Service –Learning, Honors and course projects focused on multi-disciplinary approaches to develecological and sustainable design addressing local and global issues.

**Subject:** Some thoughts

**Date:** Fri, 01 Jun 2007 09:18:33 -0400

**From:** Donald S. Ross

**To:** sustainability@uvm.edu

Leading by Design thoughts

I would like to bring up a few issues that I have not heard discussed much, although I have not heard much of the discussion.

Size. To "grow" the Environmental University, we really need to shrink the physical space that we power, heat and cool. Building a new energy efficient building that uses 30-40% of the energy of a "typical" building still adds to our consumption unless we remove other space. Unless we can actually build self sufficient buildings, design needs to be not only efficient from an energy point of view but from a size point of view. Renovating existing buildings will produce better results but our natural inclination is to build new ones.

Transportation. Being one of our largest impacts on greenhouse gases, effort should be focused on reducing vehicle miles traveled. Similar to the building size issue, driving a Hummer 10 miles a day may use less gas than driving a Prius 50 miles (maybe not, but close). Efficient vehicles are a must but an efficient mass transportation system is probably more important. Design it and market it to be attractive, physically, financially, and environmentally. On a related topic, the distance one lives from where one works is not always simply a matter of personal choice but one of affordability and availability. But long range planning could attempt to make it more feasible and desirable for UVM employees to live closer to UVM.

Consumption. It might be an interesting exercise to model the rate of atmospheric CO2 increase if the United States did not exist (maybe someone has done this). We are skillfully and continually motivated to consume. The culture of consumption was epitomized when our president told us to go shopping after 9/11. Can we, by design, counteract this culture? It is unlikely that the economic system in the US will undergo any substantive change without a severe crisis. But can we design a way to skillfully and continually motivate our faculty, staff and students to not consume? Would there be something wrong in openly declaring our intention to do so?

Population. There was much focus on population control in the early days of the environmental movement in the 1960's and 1970's. I think

that the focus was lost, both because some of the more dire predictions did not come true and because of politics and religion. Is there a better way to reduce human impacts than having fewer humans? I suppose this could get a bit touchy but it cannot be ignored that there are simply too many people.

Slow down. I would like to reiterate some comments I saw by another person. Beyond the slow food movement, can we promote a slower living movement? Do we need to reward workaholic behavior? I know that this might also be a touchy issue because of the nature of the committee (probably full of workaholics). But, a sustainable future should be one in which we purposefully sustain family, community and work?in that order.

Best regards,  
Don Ross

**Ken Bagstad**  
**April 26, 2007**

- Encourage transdisciplinary education with new bachelors in transdisciplinary applied problem solving, available across a variety of majors – goal is to teach students to think well and across disciplines (a critical skill in the modern job market). Faculty will receive added compensation/recognition for developing courses for this new program. Traditional, highly focused degrees continue to be offered to students wanting to specialize or go to graduate programs (BA/BS).
- Comprehensive, 4-course undergraduate eco-literacy requirement (taking 1 course per year). Year 1 includes 1-month “sustainability boot camp” where students learn and visit the sources/destinations of their food, water, energy, and waste, and learn to grow their own food on campus. Classroom portion will also emphasize ecosystem services provided by the natural world and basic ecology. Years 2 & 3 are in student’s area of interest, but link across disciplines. In year 4 course, students will be a final project involving the ecology/environment in the student’s area of interest. Eco-literacy is also required, and training is provided, for all faculty, staff, and grad students.
- Begin UVM’s transition with a semester-long, campus-wide, on-campus “university sustainability sabbatical.” Faculty have a year to prepare for this, and are expected to teach integrated, transdisciplinary classes to the students. Research and graduate education during this time focuses on developing research and service agenda appropriate for this bold, new direction. After the initial semester-long event, similar efforts would take place annually, perhaps for 2-4 weeks of the academic year, to maintain momentum.
- Reshape the academic calendar: bring students (at least first-years) to school a month earlier for “sustainability boot camp”; consider a longer winter break where campus is closed, to promote faculty and students’ work outside academia in the community while reducing energy use and carbon emissions.
- Current American consumer culture tends to get less quality of life out of more resource consumption and throughput. The Environmental University will seek to reverse this perverse situation, instead maximizing quality of life while vastly minimizing throughput. It will also popularize these innovations and move them from the ivory tower and into mainstream culture.
- Embed UVM in the local economy to an unprecedented degree, buying local foods, renewable energy, and other materials to the greatest degree possible. Incorporate life-cycle and transportation costs in all economic decisions.
- Improve the health of our nearby watersheds: water leaving the university grounds will be of vastly higher quality, as rain gardens, pervious pavement, and other stormwater best management practices slow runoff, retain water on site, and pick up less sediment and contaminants from impervious surfaces. Water will be recycled on campus using living machines.
- Re-evaluate campus green space for three uses: recreation, green infrastructure, and food. Keep athletic fields and other gathering places as grass, but replant

- significant areas with native grasses, trees and shrubs. Traditional and permaculture gardens for food will also be developed on campus.
- Incorporate the vision for UVM as an environmental leader into the recruitment, hiring, and training process for faculty, staff, and administrators to create a “built-in” constituency.

**Ken Bagstad**  
**April 26, 2007**  
**PhD Comps**

### **Question 1**

#### ***Envisioning UVM as an environmental leader***

Costanza et al. (1997) discuss the importance of envisioning the future. Envisioning exercises offer the chance to build community, value the opinions of diverse stakeholders, and build consensus in an often divisive world. Without a clear vision of a desirable future, short-term, uncoordinated, reactive actions are unlikely to add up to significant proactive change. A vision for the future offers a goal and a means to identify the intermediate goals, timelines, and responsible parties, so can identify how to get to that shared desirable future. UVM is currently undergoing such a visioning process to build a plan that can shape it into the Environmental University.

I envision at least five critical goals that the Environmental University must achieve: 1) It should set an example for other universities, its state, nation, and the world; 2) It should prepare student leaders to build a sustainable and desirable future; 3) It should redefine the historical, often divisive, nature of “town-gown” relations; 4) It should include a retooled and revitalized curriculum; 5) It should properly reward its employees so they will actively drive change.

Orr (1994) lists three serious problems with modern higher education – that it will cause students to focus on making a living before understanding who they are; that it will create “morally sterile” technicians; and that it will deaden their sense of wonder with the world. The Environmental University could address all three of these problems while providing a host of other benefits to its students, employees and the local and global community.

#### ***Setting the standard***

Universities have always been places of technical innovation, and at times have led important social movements. This is an important role for them to play, and the Environmental University should seek to be a leader in technical, environmental, and social progress. Current American consumer culture tends to get less quality of life out of more consumption and throughput. The Environmental University should seek to reverse this perverse situation, instead maximizing quality of life while vastly minimizing throughput. It will also popularize these innovations and move them from the ivory tower and into mainstream culture.

Despite tragedies that are well-publicized in the media, universities are also generally relatively diverse and tolerant places. In a divisive world, it is critical that universities demonstrate how to respectfully work together toward common cause, despite our differences. UVM's campus-wide diversity requirement, if well-implemented, could help advance this issue. I've personally seen 18-year old students gain perspective and contribute intelligently to such discussions in RSENR's "Race and culture in natural resources" course. Such improved understanding is increasingly important in maintaining a civil society.

Finally, the Environmental University must develop and promote blueprints for other organizations seeking the type of change it achieves. When we can help households, other educational institutions, communities, businesses, and government organizations to transform themselves in similar fashion, we will start to see the greater changes in the world that are desperately needed.

Where do we start, then? Despite some strong efforts by UVM to date, other universities are also taking the lead in sustainable practices in higher education. Such practices are well-documented by individual campus sustainability offices and the umbrella Association for the Advancement of Sustainability in Higher Education (AASHE). While there's no harm in looking toward other campuses to identify current best practices, a piecemeal approach will not lead us to the Environmental University. I'll identify some appropriate goals and a plan to get there in the sections below.

### ***Preparing student leaders for the sustainable and desirable future***

Creating a green utopia on a hill in Burlington, VT would be a nice achievement and a small piece of solving the global environmental crisis. But one university alone can't do it. However, several thousand new graduates per year can help sell the Environmental University's accomplishments to the world. Students going on to work in business, government, education, or for other fields will be equipped to spread sustainable practices after graduation. As other universities join in reaching the Environmental University's sustainability leadership plateau, tens then hundreds of thousands of new graduates will be ready to help transform society for a more sustainable and desirable future.

### ***Redefining "town-gown" and campus operations***

The relationship between universities and their college towns has historically been rocky – even if college students help the local economy, the same students are often a nuisance for residents. The Environmental University will seek to embed itself in the local economy to an unprecedented degree, building local relationships and creating new opportunities for sustainable business and problem based learning. Key principles for the Environmental University will include ecological design (using waste as resources), and taking advantage of distributed, local production for food, energy, and other materials.

Local food will be used at the Environmental University to the greatest degree possible. While there is currently some local food used at UVM, there is almost certainly room for improvement with our current corporate food service provider. The university should prioritize local food to the greatest degree possible, helping to broaden the local market.

Procurement will also prioritize non-food purchasing from local sources. The university will also use food grown by students on campus, as described in more detail below.

The Environmental University will shift from one dominated by fossil fuel use to renewable energy. Although Burlington itself gets a substantial percentage of its energy from renewables, the Environmental University will seek to go well beyond this mark. The university will seek to reduce its greenhouse gas emissions to 80% below 1990 levels by 2050, at a minimum. Emissions reductions will be front-loaded to minimize our total emissions over the next 40 years. In taking a leadership role for society, the university may also want to consider carbon neutrality as a broader goal. This should be achieved by a higher standard than out-of-state RECs, though. The Environmental University will first drastically reduce its total energy use. Although many efficiency measures have been made, retrofitting most older buildings for the highest energy efficiency standards remains to be done. Improving insulation, doors and windows, and HVAC will help, as will the use of geothermal heat pumps to moderate year-round temperatures. To stabilize energy use, the campus should remain at about the same physical size. New construction and planned renovations, however, should go well beyond the current green building policy (LEED certification) and seek the highest level of LEED recognition.

Renewable energy will also be developed on campus, including wind, solar, and methane digestion facilities. When obvious on-campus sites for these technologies have been exhausted, the Environmental University will work with local landowners to install these systems then share the energy they generate. This will move local agriculture in a more sustainable direction by creating distributed, local energy.

The Environmental University will minimize waste, then reuse it. Disposable packaging and food items will be minimized or eliminated. UVM already performs well at waste minimization, but the Environmental University will improve composting and other waste reduction, reuse, and recycling measures. The university will also recycle wastewater as living machines are installed for campus buildings. Students will help to maintain these machines - far more interesting and desirable work-study jobs than sitting bleary-eyed behind the front desk at the library. These measures, combined with low-flow toilets and showers, will reduce campus water use dramatically. Water leaving the university grounds will be of vastly higher quality, as rain gardens, pervious pavement, and other stormwater best management practices slow runoff, retain water on site, and pick up less sediment and contaminants from impervious surfaces. UVM will thus become a better neighbor by improving the health of our nearby watersheds.

Campus operations will naturally make the changes described above by comparing costs across their entire life cycle - full social costs that incorporate externalities. This will show the value of buying local food, energy, and other goods and services, and the Environmental University will prioritize purchasing these items from local sources. Students will play an important role in the process, as classes on life cycle analysis and ecological economics provide the recommendations that will drive university policy.

Commuting to campus by car will continue to decline, and further incentives will be offered to faculty, staff, and students for walking, biking, or using public transit. The cost of a campus parking permit will be raised to incorporate the full social cost of driving. UVM will partner with the cities of Burlington and Winooski in offering fuel efficient FlexCars to replace individual car ownership. Its partnership with CCTA will continue to grow, fostering a better local public transit system.

With less demand for parking, the university will remove more existing parking lots. Green space on campus will be re-evaluated for three uses: recreation, green infrastructure, and food. While athletic fields and other gathering places will remain as grass, significant areas of the campus will be replanted with native grasses, trees and shrubs. These rain gardens will be designed to capture, slow, and filter runoff from campus before it flows to city storm drains. Traditional and permaculture gardens for food will also be developed on campus.

### ***Education & curricular changes***

Undergraduate education today trains every student like they are bound for graduate school, with specialized courses limited to their field of study. This serves the interests of only perhaps 10% of the students. One way to change this would be to offer a traditional “Bachelor of Disciplinary Studies” along with a new “Bachelor of Applied Problem Solving.” This proposal and its benefits for promoting transdisciplinary education are discussed further in question 2.

“Eco-literacy” will be required of all graduates of the Environmental University, and will integrate teaching, research, and service for undergraduates, graduate students, and faculty. Basic eco-literacy training will also be required of all new faculty, staff, and graduate students, to bring the entire community to a common level of understanding. Eco-literacy for undergraduates must be more than a single class taken as a freshman or senior, and should be infused throughout the curriculum. I would envision all undergraduates taking a minimum of four classes (1 per year). The first class would be a “sustainability boot camp” (or perhaps take a less military-sounding name). This would be a roughly month-long class (in August) before traditional classroom based instruction begins. During that month, students will learn about where their food, energy, waste, and water come from and go to, and about the ecosystem services provided by nature. Shockingly many Americans lack such basic knowledge. This experience will include visits to nearby farms (small organic through large industrial), water and wastewater treatment plants, landfills, fossil powered and renewable energy generating stations, and natural areas. Students will learn to raise food grown on campus in both permaculture and traditional gardens. The gardens will have been planted the previous spring by departing students and tended over the summer by agriculture students paid for their work. After the August “boot camp” phase, the class will continue through the fall with important basic readings and discussions about sustainability. The first year class would be the most intense, with all students taking the same class. Second and third year eco-literacy classes would be taken in the student’s area of interest, with growing complexity and specialization but also emphasizing links to other parts of the sustainability field. Seniors would take a final class designed to integrate the environment and sustainability

across their field of study. Before departing for the summer, students would help plant the campus gardens for next August's incoming first years. Local alumni and parents visiting for graduation are invited to participate as well, and this becomes a popular tradition linking past, present, and future generations of students at the Environmental University.

### ***Rewarding and driving change***

UVM's current service learning program is a starting point for the service and outreach mission of the Environmental University. As the university's transdisciplinary research program grows (see question 2), research will become increasingly community-driven. The relationships built with area farmers, energy providers, and sustainable businesses will continue to produce research questions aimed at furthering local sustainability. Faculty participating in sustainability-related transdisciplinary research will be rewarded for this important work.

It will take substantial work to develop the new eco-literacy courses described above and transdisciplinary, problem-based courses described in question 2. Faculty who develop these courses will be rewarded for their efforts during their review for tenure, promotions, and raises. Those courses judged to be particularly high quality by students, collaborating faculty, and community partners will include added compensation. Although faculty will still be expected to publish, the Environmental University will ultimately move judging its faculty by "publish or perish" to judging them by the size and quality of the professional social networks used in their teaching, research, and service activities.

Compensation at the Environmental University will incorporate the ecological economic principle of just distribution. The model company described by E.F. Schumacher (1973) maintained a wage differential of no greater than 7:1 between its highest and lowest paid employee. Wage differentials are clearly needed to provide motivation and reward important contributors to the community's success, yet too large a differential is also undesirable from an equity perspective. Assuming the university President makes about \$300,000 per year (pre-tax) and an employee paid \$11/hour makes \$23,000 per year, this is a differential of 13:1. The socially acceptable wage gap should factor in community input and consideration. Such equity should be considered an important part of the Environmental University.

### ***Getting there from here***

Social change can come from the "bottom up," grassroots direction, or the "top-down," directed by an organization's recognized leaders. The radical change needed to create a true Environmental University requires strong engagement from the top of the university – the President, Provost, and other vice presidents, that filters down successfully to all deans and department chairs. This set of policies will likely be controversial and opposed (or more likely, ignored) by some if they are not strongly promoted by the leadership as part of the University's mission and vision for the future. Not everyone may support this transformation at first, so recruiting new administration, faculty, staff, and students that support this vision is critical. If the vision is expressed during the recruitment process

and new employees and students support it, such support will be built in over time through the natural turnover process.

This plan for the Environmental University will vastly upgrade built capital (buildings and on-campus energy generation), human capital (educational opportunities), social capital (new networks of colleagues spreading across campus and into the community), and natural capital (higher quality open spaces and green infrastructure). This will provide students with unparalleled educational opportunities and faculty and staff with a rewarding, high-quality work environment. This vision is ambitious and will not be achieved instantly or without hard work. It will be important to set intermediate goals, timetables, and responsible parties to help advance toward the vision. The final goals can be defined through the participatory visioning exercise, combining this personal vision with that of many other UVM stakeholders. From there, a reasonable intermediate plan can be developed. Given the right people, guiding principles (e.g., ecological economics and full cost approach, ecological design and turning waste into resources, others identified in the official mission statement of the Environmental University), intermediate plans, and strong leadership, the ordinary university of the early 21<sup>st</sup> Century might truly become an agent of change in a time of global crisis.

## **Question 2**

### ***Disciplines***

For probably most of the 20<sup>th</sup> Century, disciplinary teaching and research dominated university research and teaching. Universities and secondary schools were organized into discrete departments, each with their own assumptions about the world, how it works, and how to study it. Most of the departments in existence today fit these traditional disciplines, like economics, zoology, or psychology. Disciplines typically have their own language, set of tools, and often don't interact much with other disciplines outside their field. When disciplines attempt to address a problem in the world, they apply familiar techniques but may ignore outside viewpoints. This has been a frequent criticism of neoclassical economics - it treats problems of economic growth, resource distribution, and the environment within its own framework, which has rarely produced successful solutions. Leopold (1949) and Orr (1994) both warn that while narrow, disciplinary researchers and teachers may "push back the frontiers of knowledge," they risk blinding themselves to greater environmental and social problems, even as those problems threaten to overwhelm the environment and society.

Disciplinary research is typically very focused and "narrow." In many fields, there is an established paradigm, which on rare occasions shifts, but often channels research in a particular direction. Most fields have their macro-level details worked out, so researchers concentrate on refining them or developing new methods and understanding, studying the minutiae of their fields. Disciplinary teaching attempts to impart students with the world view, theory and methods behind that field. The typical undergraduate major is a four-year exercise to this end, and while there is integration between courses in the discipline, there is typically little integration with other fields. Strict sets of major requirements may

discourage taking classes outside the prescribed program of study. Disciplinary requirements may be part of the reason that undergraduates are stereotypically “trained as technicians” in their field or why grad students have problems explaining to their grandparents why what they’re doing is important or will make the world a better place.

Disciplinary research is certainly not all bad, though – advances in theory and methods can certainly help in solving modern day environmental and social problems, when properly incorporated in a transdisciplinary service framework (more on this below).

### ***Subdisciplines***

Subdisciplines are simply specializations in a given discipline. They share the same world view or scientific paradigm as their sister subdisciplines, but use highly specialized methods to address narrower problems. Subdisciplines within neoclassical economics might be macro and microeconomics, environmental economics, international economics. Examples in a biology department are physiology, taxonomy, or population ecology. Most subdisciplines are taught as upper level undergraduate or graduate level courses. Subdisciplinary work may become even more theoretical and less applied, though as mentioned above may be useful when incorporated into a “bigger picture” framework.

### ***Interdisciplinary and transdisciplinary teaching, research, and service***

Interdisciplinary and transdisciplinary work attempt to break down the traditional barriers that separated disciplines. I was well indoctrinated in interdisciplinary research as a Masters student at Arizona State, and mention this to point out the differences between this approach and what I feel is a potentially more valuable transdisciplinary approach. My thesis focused on riparian plant community response to declining groundwater and surface flow on a southwestern river. Several disciplines were represented on our research team – ecologists, hydrologists, environmental economists, and water law experts. Yet ultimately we were doing disciplinary research, perhaps getting together once a year to discuss possibilities for integration while never actually doing it. We never shared a common language, and I felt the project lacked an overall vision or leadership, though it was certainly framed within a concrete, and pressing environmental problem - effects of groundwater overdraft on endangered desert riparian biotic communities. With the right combination of teaching, research, and service, I feel this project had better potential, but I didn’t see it coming together in this framework. Physical barriers didn’t help with the integration problem, as half the team was located at ASU in Tempe, with the other half at the U of A in Tucson, 90 miles away. This made it hard to have lunch with an economist or a beer with a hydrologist and get to know their work better. While we achieved our disciplinary goals, I felt our policy impact was minimal.

Transdisciplinary work is more difficult to achieve than the above-described interdisciplinary process, but I feel offers better chances at addressing important environmental and social issues. Ecological economics identifies itself as a quintessential transdiscipline, but fields like industrial ecology or ecological health sciences also fit the description. Transdisciplinary researchers and students need to take the time up front to really understand the different disciplines needed to solve their problem of interest.

Researchers can't and don't become experts in each field, but understand the capabilities of each field and who to call on when greater expertise is needed (Farley et al. 2005). Because of the needed coordination, good organization and leadership is important for effective transdisciplinary work. I feel my ASU experience could have been transformed into a more effective transdisciplinary project if there was tighter integration between the fields, and up-front work to make sure that we understood each others' language and skills. A common understanding of the project's goals and a concerted outreach/service component would also have been helpful.

From a teaching perspective, this approach could be imparted to students as well. A good transdisciplinary course would involve a diverse group of teachers, but needs to be more than just a parade of guest lecturers. Ideally it would integrate perspectives, methods, and approaches across these diverse fields. An important goal of transdisciplinary courses would be to demonstrate the value of working across disciplines, and show students how to think across disciplines. Such a course would be much broader in scope than a disciplinary or subdisciplinary course.

Transdisciplinary service should seek to address real-world problems, of which there are no shortage. Such service can blur the difference between teaching and research. Ideally, community members would be included in the teaching, research, and outreach process. Students, teachers, and community members would work together to identify the appropriate questions, tools, and disciplinary expertise needed to address the problem. For students, community involvement can also give good insight into the importance of political feasibility in potential solutions. I've seen plenty of idealistic but naïve 18-22 year olds (and was probably one myself), and accounting for political feasibility is an important step in developing potential environmental solutions.

### ***Encouraging the development of transdisciplines***

Unfortunately, most if not all universities have physical, institutional, and cultural barriers that can help explain why transdisciplinary research doesn't self-organize. Physical barriers are an obvious problem. Different departments (disciplines) are often housed in different buildings. It would make a lot of sense for related departments to be located nearby, yet this is often logistically difficult for universities given their existing built infrastructure. Buildings also need spaces conducive to casually meeting, since outdoor locations are not an option in Vermont for much of the academic year.

Cultural and institutional barriers are problems too. Transdisciplinary research requires bridging social capital, which may be harder at first to build than bonding social capital. Faculty and grad students need to spend less time in front of their computers and more time getting to know their colleagues in related, potentially valuable fields. This of course requires changing the incentives and job description, so faculty don't see this as a waste of time. Bonding social capital might be more easily achieved for grad students. First year grad students could be required to take a graduate version of "sustainability boot camp," which could be followed up by an organized, cross-disciplinary discussion group around a transdisciplinary sustainability topics of their choice. Cross-disciplinary faculty could lead or at least inspired these discussion groups. Again, new incentives

would be needed for faculty to spend time cultivating new cross-disciplinary relationships. Yet such relationships could lead to important new grants, research and teaching opportunities across the disciplines. Overall university policy would need to encourage different departments to develop policies so their faculty can share their teaching and research load, rather than squabbling over small administrative or financing details.

### ***Getting there from here***

There are several ways a university could change its curriculum and operations to encourage more transdisciplinary work. Restructuring faculty incentives and departmental operations and organization are obvious steps. I see a need to “shake up” the existing system – making small additions or changes to the existing system will not have great effect. Just adding a course requirement here or combining two departments there will probably not get the job done. From my perspective, there are a few important steps we can take.

First, get things going in style and with a big, concerted effort. There’s a lot of inertia in large institutions, and abandoning the old while creating new norms will not happen in piecemeal fashion. I envision a semester-long, campus-wide, on-campus “university sustainability sabbatical.” David Orr has proposed something – suspending traditional classes while the university community works on some of the bigger issues of the day. Faculty would be given a year to prepare for this, and would be expected to teach integrated, transdisciplinary classes to the students. Research and graduate education during this time could focus on developing research and service agenda appropriate for this bold, new direction. After the initial semester-long event, similar efforts would take place annually, perhaps for 2-4 weeks of the academic year, to maintain momentum.

Second, consider changes to the semester system. This would have several benefits. Freshmen and upperclassmen who chose to could come back in August, earlier than the current calendar, for the “sustainability boot camp” described in question 1. “Indoor” academic work could take place from September through early December, as it does now. The university could then close from late December through the month of January, for faculty, staff, and students. Students could pursue internship or community-based practical experience, while faculty and grad students worked from home or in the community as well. A major side benefit of this would be savings in heating the university during this cold time, which would reduce the heating bill and carbon emissions. Courses would resume from February-April, with May providing another “outdoor” window for applied, possibly optional, environmental work. June and July would be the traditional university summer break.

Finally, class and major requirements should be changed. As mentioned above, there should be ways to involve community members as partners in UVM courses at minimal cost to them. If these individuals continue to be valuable educational partners and participants over time, class cost could be reduced to zero, and they could eventually be paid in recognition of the practical learning and outreach opportunities they provide to students. For students themselves, the major/minor system should be overhauled. Strict

major requirements risk creating students like Orr's "morally sterile technicians." The main function of disciplinary requirements seems to be in creating future academics and specialists, a process for which it is valuable. Yet this is a small minority of students. Perhaps we could best solve this problem by keeping a traditional, more technical "Bachelor of Disciplinary Studies (BDS)" option, but also offering (and heavily promoting) a transdisciplinary, "Bachelor of Applied Problem-Solving (BAPS)." In the modern economy, students that can think well and across disciplines should be at least as highly valued by employers as technical experts (not to mention that today's graduates rarely have the same job or employer over their entire career). This would be a strong selling point to potential BAPS graduates and prospective employers. Creating a transdisciplinary undergraduate program requires professors to teach it, and as the program grows in enrollment, more faculty would be drawn to transdisciplinary teaching, research, and service, in a virtuous positive feedback loop.

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## **Samuel de Champlain Institute At The University of Vermont**

**Samuel de Champlain (1537-1635), was an early explorer and first governor of *France nouvelle* of which Vermont was then a part. The Quatercentenary of his discovery of Lake Champlain will occur in 2009.**

The Samuel de Champlain Institute at the University of Vermont will be home to regional studies and active programs - environmental, economic cultural and health-related - for northern New England, the province of Quebec and Canada's maritime provinces. Its mission is to nurture common interests leading to significant achievements in but not limited to:

**Environmental research and development;**

**Economic R&D;**

**Cultural and demographic studies including indigenous peoples; and**

**Medical and public health common to the region.**

Faculty, as well as graduate and undergraduate students, including those from affiliated Canadian universities, should see this Institute as an unparalleled setting for research and learning directed toward environmental and cultural challenges, those specific to eastern Canada, especially Quebec, as well as northern New England.

A Samuel de Champlain Institute for state and regional studies, with clear international possibilities, would offer a targeted opportunity for attracting funding by expanding current activities and creating new programmatic opportunities. UVM's location and setting are especially suited to this proposed undertaking, one that offers major potential in fulfilling the University's present and future mission in serving Vermont and its region.

05-02-07

Proposal prepared for - [sustainability@uvm.edu](mailto:sustainability@uvm.edu).

## **UVM 2020 IDEAS, APRIL 30, 2007**

Off the cuff thoughts by Daniel Hecht, Vermont Environmental Consortium

### **1. Construct a food-waste-to-energy biodigester on campus.**

- Best net environmental and economic benefit of any energy source
- Produces electricity, heat, useful cellulosic solids, and soil nutrients
- Requires development of a physical and human capacity infrastructure – trained staff, proper containers and transport -- to provide a source-separated clean food waste stream from UVM and, ideally, other Burlington institutional sources (City offices, hospitals, major restaurants, etc.)
- Use residual effluent as fertilizer on UVM farm school fields or as nutrient for (UVM-based) algae-to-biodiesel biofuel farming
- Similar project already under way with a solid waste management district, a Vermont state college, and VEC

### **2. Install Savonius-type or helical wind turbines at key points on campus; build a multiple-input power management and integration energy system (i.e., allow grid power to be supplemented by many small inputs)**

- Vertical axis generators are easily mounted to buildings, exploit highly-localized productive wind volumes (such as generated by architectural configurations)
- New technologies are aesthetically pleasing, silent, and can be controlled to manage any weather condition

### **3. Produce a comprehensive green community handbook and process**

- Initially, geared to Vermont-sized towns
- Provides inventory, analysis, planning, and implementation "roadmap" to greening municipal infrastructure, holdings, policies, zoning ordinances, and practices
- Provides "roadmap" to greening the community from the perspective of citizens, home owners, businesses
- Includes such elements as local renewable energy resource inventory, brownfields properties inventory, schools assessment and retrofit, transportation, telecommuting capacity, etc., and provides checklist of actions to address
- Create multi-party (and student/faculty) UVM-based task group to test and track content/process application in selected Vermont communities
- Create a curriculum for the process, including research, writing, and practice-based learning, that graduates "community greening coordinators"
- Market the book commercially

### **4. Create a web-based national environmental education/enterprise resource clearinghouse**

- Establishes UVM as hub of a national wheel

- Using the model of Eco-Canada, includes environmental job bulletin board; environmental internship board; community initiative board; academic/business partnership board (environmental projects, technology commercialization, etc.)
  - Creates non-residential or low-residential, online professional development courses for environmental professionals
  - Creates non-residential online environment-related education courses and broad articulation agreements that allow participation of and provide credit for students at other academic institutions

### **5. Create (or link with Robert Redford's) green TV program**

- Produce topical features on environmental issues and solutions in a series to be aired nationally
- Collaboratively apply resources of various departments (communications, journalism, environmental education, engineering, etc.)
- Commercialize series as profitable, licensable TV programming

### **6. Create a curriculum in environmentally-friendly design and fine arts**

- Focus on uses of environmentally-friendly, recycled, renewable, remanufactured, nontoxic materials to produce expressive visual art, fine or "high" craft, stylish consumer products; created with low-environmental-impact, nontoxic, carbon-neutral manufacturing processes; with low-waste, low-toxicity, biodegradable/recyclable end fates
  - Engages fine arts and humanities departments and their students in creating environmental solutions
  - Fosters creation of a new aesthetic, new cultural trend (see [www.swellfuture.org](http://www.swellfuture.org)) that reinforces societal trend toward sustainability
  - Host regional exhibitions, sponsor touring exhibitions, national competitions/awards
  - Commercialize successful products

## Noah Pollock's bold transformative ideas:

### An ecologically designed campus

UVM has embraced the **elements of ecological design in all of its campus operations**, with nature as its guide and mentor. Its design has systemically address energy and material flows: Like nature, **all buildings are solar based**, relying on the sun, water, wind, the heat of the earth for energy. As part of this transformation, we established an **efficient and successful district heating plant** that utilized heat from McNeal to **support ecological enterprises in the Intervale**, as well as to heat our buildings. Waste has redefined as a resource: we had become the first university in the country to **design and build an eco-machine** that treats all of the University's sewage, and **landscaping that captures all storm water runoff**, protecting Lake Champlain. Because of the efforts of a **Sustainable Food Program**, most food is produced locally, through partnerships with farmers, and at student gardens, while costs are minimized through cooperative efforts. Building upon the success of the Transportation Center, UVM is filled with people **walking, cycling, and riding buses**, supported by a strong **incentive program. network of paths, and car sharing system**. Understanding the importance of biodiversity, **wildlife habitat planning** has been woven into campus landscape planning.

### Ecological economics as the root of campus planning

The principles of ecological economic have been infused throughout the campus plans and policies. The university is dedicated to creating a safe and desirable future, and a **high quality of life** for its students, faculty, staff, and the larger community. Systems thinking is pervasive, and the relationships between built, natural, social, and human capitals are well understood. The university annually completes a **genuine progress report** that tracks its performance in all spheres, and a **comprehensive plan** guides campus actions. **Full cost accounting** is the norm for purchasing and investing; a **revolving loan fund** and a **clean energy fund** helps over come cost barriers. We have committed to **carbon neutrality**, made possible, in part, through a **local offset program** that involves students and local businesses, supporting energy conservation, reforestation, and renewable energy initiatives. The university has incorporated a strong **incentive structure** that rewards projects that benefit the community, increase quality of life, and reduce energy and material use. Creative solutions, including **apprenticeships, work-learn programs**, help maintain social equity and accessibility.

### Transdisciplinary, problem-based, service-learning

With the understanding that the traditional academic structure is ill equipped to lead society to a better way of life, **barriers were removed and rewards were developed for collaboration, integration, and partnerships** in both research and education. On campus, classes emphasize active learning; **Flexible courses of study** give students ownership over their education and cultivate a **team approach** to education where students work together in **problem-based and service-learning** courses that make up

50% of the curriculum. The new **American Academy of Design Sciences**, part of the **renovated, platinum certified Aiken Center**, has become a well-respected center for this approach. Students also study **place-based learning**, at **ecovillages**, living communities that demonstrate sustainable living, including at UVM's **Jericho Research Forest**.

# Leading By Design for a Sustainable and Desirable Future

Some ideas from Cami Davis

## **International Environmental Arts Institute**

I would like to second Adrian Ivakhiv's suggestion that we initiate an International Summer Environmental Art Institute (or include the arts in Cynthia Belliveau's vision for a Summer Green Institute). I see this as a world-class initiative. The only program I am aware of in its caliper being the Environmental Art Masters Degree at the University of Art in Design in Helsinki. (www.....) Our program would further distinguish itself by structuring the curriculum within a whole system concept and the four capital framework; including the critically evolving themes of Environmental Art (www.greenmuseum.org), the Art of Sustainability (www.greenmuseum.org) and Globalization and Art (www.. ....)

The program would offer either or all of the following: MFA in Environmental Art, or the Art of Globalization, or Sustainability (Title TB Determined), AND/OR a fifth year graduate certificate program, AND undergraduate course opportunities. The undergraduate classes would be linked to the ecoliteracy, or sustainability/systems theory literacy requirement. The requirement could be accommodated by a semester or 6 or 9 credit block that can be accomplished either during a summer intensive or a January term intensive. The university would go to a year round schedule (three semesters plus a Jan. Term option) with faculty being responsible for two semesters out of the year...guaranteeing some of our best faculty as well as quest faculty during the summer months). In this way we can creatively work across disciplines offering all our visions of problem based, service learning, transdisciplinary courses as a pilot program that precedes the entire overhaul of the university educating us all to the synergistic possibilities.

## **International Environmental Arts Institute: Exhibition, Lecture and Performing Arts Series**

The UVM of 2020 would also have an exhibition and performing arts series with artists whose work is again understood in relationship to the four capitals.

Artists will be chosen whose work exhibits expertise, or evidence of collaboration across disciplines, including but not limited to the following:

Art and Ecology

- E.g. Brown University student/musician/composer whose compositions reflect geologic data of melting ice caps and rising waters due to global climate change
  - “Ecoventions” Art work that restore or remediate damaged ecosystems
  - Water Remediation with a particular focus on Storm Water Runoff
- [www.JackieBrookner.com](http://www.JackieBrookner.com) (March 1<sup>st</sup> EnvironMENTAL: Earth Minded Art, lecturer, and Jun 19<sup>th</sup> Vermont Studio Center lecture)

- Water Remediation: Patricia Johannson restores (September exhibition, Helen Day Art Center, Stowe, VT, [www.greenmuseum.org](http://www.greenmuseum.org), click Patricia Johannson
- Habitat Restoration: Agnes Denes

Artwork that address issues of the interdependence of social, economic and environmental justice.

Artwork that analyzes/exposed issues of perception of our human =nature relationship.

Artwork that utilizes natural processes such as wind, solar, lightening, etc.

Artwork that uses natural materials

Site-specific and/or exploring issues of Place (nature/culture interface)

Artwork that addresses our awareness and/or solutions enhancing/creating alternative transportation or its uses.

Art and Community

## **UVM and Wider Burlington Community Events**

In addition to the public arts series of exhibitions and performances there would be two major public art events annually that students, faculty, and community co-create or participate in. One as part of Earth Week in April and the second as part of the summer institute “Festival”?

These events, programs would be a continuation of the partnership developed this year with Burlington City Arts in the offering of the EnvironMENTAL Art: Earth Minded Art Lecture Series and with their commitment to hosting a major internationally ranking Environmental Art exhibition Biennially. Additional partnerships in the community could be fostered for the summer series: Waterfront, Flynn, Shelburne Farms, The Intervale, Metta Earth Institute for Contemplative Ecology, Lincoln, VT, Knoll Farm Center for Whole Communities, Waitsfield, VT, Yestermorrow, Waitsfield, etc.

## **Environmental Art Summer Institute Faculty**

Many of the public, small team and individual artwork that falls into this category require collaborations across disciplines.

This summer program would be GREATLY enriched (and maybe even attractive enough to keep faculty around for part of the summers) by funding distinguished practitioners in residence; artists, scientists, city planners, Socially Responsible Businesses and Developments, poets, etc. etc. We provide the projects that incubate visions, collaborations and creative solutions.