

## Sustainability and the Future of the University

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Sustainability must become a core value of the university. Sustainability requires that this generation should not compromise the ability of future generations to enjoy a comparable standard of living and quality of life. In fact, the earth is rapidly crashing towards devastation. Global warming is causing a warmer climate, especially towards the poles. Ice and permafrost are rapidly diminishing. Spring comes sooner, fall later. Plants and animals are moving poleward and up in elevation, reaching limits depleting their numbers, and going extinct at a rate unprecedented in human history. Disease vectors are spreading, storms are getting harsher, Droughts are spreading even as torrential rains and snows increase. Drier forests are burning and huge forest areas are being cut down. Sea levels are rising, and storms increase the effect of higher water. The tragedy of the polar bear is mirrored in the catastrophe of New Orleans. The human economy is racing toward peak oil, and increasing burning of coal is out-weighting massive efforts to reduce other carbon emissions. Huge fisheries have been depleted and the richest ocean habitats in the world, coral reefs and kelp forests, are diminishing quickly. Fresh water is being drained from nature and aquifers at a rapid rate at the same time water stored in the snow pack is declining. Food production has become dependent on fossil fuels, a narrower and manipulated genetic base, and pesticides while urbanization, salinization, and drought reduce the agricultural land base. Some industrial chemicals, the persistent organic pollutants and heavy metals, cumulate up the food chain causing endocrine disruption and cancer. Automobile use is hugely under-priced and the resulting auto-dependency imposes huge indirect costs on the environment and society. Over-population contributes to habitat reduction, human conflict, and poverty. The rich can blame the poor for population growth, and the poor can blame the rich for the burdens of consumption and technology, but the result is the same—the earth is dying.

Policies for sustainability are grouped into the “three E’s”: economy, environment, equity. The habitability of the earth for human beings is rapidly declining, a planetary crisis hidden from most people by their limited knowledge, lack of understanding of science, preoccupation with other matters, and life spans of less than 100 years. Historically, universities have been creations of their times and cultures, yet also have been powerful forces for change. In some areas of life, such change takes places rapidly, while, in other areas—those more difficult for the dominant culture—change is very slow. Sparks of interest in sustainability have led to brush fires of activity but as yet no coherent and comprehensive rededication of the university to rescuing the planet. The “environment” is just a topic on a list, and not very high at that, competing with other items, when it needs to become fundamental to the whole mission of the university.

This essay in Part I discusses the theoretical foundation for understanding sustainability and in Parts II to VII suggests action by California State University Hayward Campus to respond to the challenge. Most of the ideas apply to the CSU system. Related resources are on p. 14 to 17.

I. **Overview:** The evolution of the human species is headed for even more degradation, though probably not extinction, unless sustainability becomes a core value of the university, lending

coherence and meaning to those values which have energized universities through history.

- A. The historic values of the modern university include a liberal education, religious tolerance and spiritual enlightenment, science and discovery, democracy, the rule of law, human rights, social and legal equality of the sexes and races, economic freedom and opportunity, and social equity.
- B. Humanity in general—and America in particular, as the world’s most powerful nation—are now threatened as never before by global warming, peak oil, dependency on fossil fuels, water shortages, rising sea levels, extreme weather events, deforestation, desertification, loss of agricultural land and natural landscapes, depleted fisheries, pollution, declining biodiversity and species extinctions, poverty, civil strife, disease, and population growth.<sup>1</sup> In the US itself we find budgetary indiscipline favoring politically powerful interests, the collapse of democratic voting in Florida and Ohio, an increasingly secretive and intrusive federal government hostile to the rule of law and international agreements, military aggression and nuclear weapons development, increasing religious sectarianism in federal policy, a broadly based attack on science and the environment, a mass media passively beholden to corporate interests or supportive of militaristic nationalism, and a citizenry unaware of the rest of the world and mostly not interested in issues or voting.
- C. These problems are rooted in human evolution, which is a product of genes continually replicating themselves across the lifetimes of the mortal organisms which are their means of survival. Equally, evolution is also a product of a survival mechanism of these genes—intelligence and culture—which channels gene expression through socialization, social organization, invention, and the evolution of culture itself. Human intelligence from evolution combines an early limbic brain of immediacy and emotions with a later-evolving deliberative cerebral brain capable of planning.<sup>2</sup>
- D. Early dimorphic, male-dominated mammalian tribal cultures were prone to dogma and conflict with other tribes, continuing to modern times as nations and sectarian religions, rooted in the power of tribal emotions<sup>3</sup> of the limbic system prevailing over the cerebral brain and controlling its reasoning.
- E. Yet there is also the hope that humanity can use its intelligence to strengthen the forces supporting sustainability by developing the cerebral cortex to channel limbic emotions.

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<sup>1</sup>There are hundreds of books and articles on these issues. A recent one is of special interest, as it is written by Gov. Schwarznegger’s chief environmental aide: Terry Tamminen, *Lives Per Gallon: The True Cost of Our Oil Addiction*, 2006.

<sup>2</sup>Craig Lambert, “The Marketplace of Perceptions; Behavioral economics explains why we procrastinate, buy, borrow, and grab chocolate on the spur of the moment,” *Harvard Magazine*, March-April 2006.

<sup>3</sup>These ideas are more fully developed in Sherman Lewis, *Swan Song and epilogue* at [http://class.csueastbay.edu/politicalscience/slewis/SwanSong/lecture\\_and\\_essay.pdf](http://class.csueastbay.edu/politicalscience/slewis/SwanSong/lecture_and_essay.pdf)

F. The roots of sustainability require the fuller development of human potential from pregnancy onward. Early socialization in the human nuclear family, extended family, and other supporting close networks should develop the whole child. Loving parents provide children with guidance toward self-confidence, curiosity, reasoning, delayed rewards, and responsible personal behavior. Such parents provide an enriched, safe, play environment and reading for vocabulary development, school success, and creative work.<sup>4</sup> A mother's vocabulary influences the young child, and low education mothers have less vocabulary than high education mothers. Reading to a young child greatly enriches vocabulary and language skills regardless of social class. It is critical to enrich brain development even before Head Start, and Head Start—a holistic program for the whole child, not an “educational” program—builds on the earlier development. Schools reinforce the learning process, and then the university can provide young adults with a strong liberal education that values the continued ascent of humanity. Such an education instills an understanding of science and the development of spiritual, moral, and ethical values. The Enlightenment which barely began in the 18<sup>th</sup> Century can then gain more strength and guide human evolution.

II. **The CSU Hayward Campus and Sustainability.** The CSU Hayward Campus can best assure long-term enrollment success by taking on the most important challenge to humanity in the 21<sup>st</sup> Century, sustainability. sustainability should be a major focus of **academic activities** (part III below), in **community education** (IV), in the **physical operations** of the campus (V), and in support for sustainable development **in the regional and especially the Hayward community** (VI).

### III. **Sustainability as a Major Focus of Academic Activities at CSU Hayward Campus**

#### A. **Business and Economics**

1. The **Business School** will continue to do well by teaching conventional business curricula, but it can do better, and do good, by teaching about where business needs to go, about the future markets required by sustainability.
2. Scholars have put forth exciting ideas for the transformation of the world's economy, yet our students are not learning them. See Lovins, Lovins, and Hawkin, *Natural Capitalism*; Lester Brown *Eco-Economy* and *Plan B 2.0*. Brown's *Plan B*, for example, is a comprehensive global plan, covering not just the economy and business but also poverty, population, and the environment.
3. See also the work of SAI (Social Accountability International). Market economists do not think like ecologists, tending to assume that the environment is constant when it actually is dramatically influencing the money economy.
4. Economists need to integrate the money economy and the resource economy, to consider the value of more non-monetized values (not just imputed rent), to improve macro-economic indicators like GDP to consider the GPI (Genuine Progress Indicator),

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<sup>4</sup>David Brooks, “Self-control is the key to success,” *Chronicle*, May 9,2006, reports on research by Walter Mischel on 4 year old children, delayed gratification, and life success many years later. Stable, predictable nurturance seems correlated with later self-discipline. Brooks reports on research by Jonathan Haidt (*The Happiness Hypothesis*) that indicates that education in self-control can work, developing the cortex to control the limbic.

to develop better micro-economic indicators, to look at pricing reforms like Pigovian taxes or the carbon swap, and at elasticities in response to pricing changes which internalize external costs.

5. The business curriculum would also cover transportation pricing reforms, job location externalities, “growth without growth,” urban form and the household moving rate, the status of women as a growth and sustainability issue, and urban system sustainability.

**B. Social Sciences.** The social science of sustainability is critical to understand how to get society to value and act on scientific information, how cultures overcome tribalism and sectarianism, and how societies can come to support scientific reasoning and a value on nature. Here are my tentative early comments:

1. **Political Science** shows no understanding of the political causes of the global and American ecological crises. The profession is largely stuck in its focus on the activity of politics and ignores sustainability and the cultural context within which political failure takes place. As a result, political science can describe what is happening but not its meaning nor how politics should change. Political science concerns itself with social equity and democracy, but sustainability is not covered in survey courses. Some useful coverage occurs in classes on public policy and the environment, but the “liberal” bias is toward seeing mainly a conflict between enviros and business, ignoring the cultural and ecological roots of popular ignorance, non-voting, and support for fear-based leaders. Political science does better on understanding the social aspects of globalization and its discontents and the hostility of the U.S. to the strong pattern of international cooperation that have been emerging through the United Nations, its many agencies, and international treaties. Political science needs to strengthen its coverage of the environmental aspects of the international system.
2. **History** often considers environmental impacts of economic development, but rarely considers sustainability as a major theme in an evolutionary context as laid out in the overview above. In focusing on our social, economic, and political stories, the environmental story goes untold.
3. **Sociology** has two courses related to sustainability, one on human ecology and one on population. In general the human social relationship with land is covered in geography.
4. **Geography and Environmental Studies**, like science, is already committed to sustainability and has something of the holistic approach of anthropology.
5. **Anthropology** is the most attuned of all social sciences to the importance of culture and supportive of cultural survival of small tribal groups around the world. These groups along with their cultures and languages are fast-disappearing along with biodiversity, yet have a great potential role to play in the preservation of the natural world—one which includes sustainable tribal cultures. Anthropology is, then, able to provide a perspective on American culture from the outside.
6. **Psychology** straddles the physical and social sciences. Our understanding of animal and human evolution and behavior can be related to the physiology of the brain, and these can be related to socialization and politics. We can begin to imagine a framework for a understanding the earth crisis. Despite this potential, psychology has no offering dealing with psychology and sustainability.
7. **Modern Languages** can do more to select material that deals with sustainability issues

and cross-cultural perspectives, particularly the growing gulf between European and American culture and public opinion. We need some undergraduate requirement for knowledge of a modern foreign culture and its language as a basis for multi-culturalism and understanding what values are fundamental and which require tolerance of diversity. The fact that the US does not play well with other countries can be covered in political science, but has deeper roots in culture.

8. **Ethnic Studies** is in some ways a third world version of the humanities also covered in modern languages. Ethnic Studies makes up for the “Western” emphasis of much of the curriculum and helps many students understand their backgrounds, but has a tone of opposition to the dominant culture and little coverage of sustainability issues.
9. **Philosophy** tends to emphasize reasoning and how little we know rather than helping students understand the difference between science and religion and what ideas are most useful as they try to develop a personal philosophy or religion. The university has become overly secularized, making secularism a kind of religion hostile to other religions in the false belief that “religion” is necessarily sectarian, dogmatic, and anti-scientific. Philosophy and the university in general are too often unable to use sacred language for spiritual purposes that bring us together. Sustainability requires a deeper understanding of religion as spirituality and tolerance, and of how sectarianism threatens security and sustainability.
10. **Social Work and Criminal Justice** are more important for sustainability than it might seem, as they explore reasons for the alienation that leads to anti-social behavior that undermines urban livability. Homelessness, street begging, gangs, guns, crime and poor schools are factors, along with car and housing subsidies, which encourage low density development and auto dependency. Sustainability requires involving youth in productive engagement with society, not anti-social alienation, dropping out, and gang activity. This challenge is also relevant to try to understand the increasing lack of involvement of Americans with civil society, compared with other nations.<sup>5</sup>
11. **Mass Communications** needs to study why the media provide so little coverage of sustainability issues, and are so passive in reporting what the politically powerful say with regard to the relevant facts.

C. **The Physical Sciences.** More than other colleges, science has contributed to our knowledge of sustainability issues. CSU Hayward Campus has an Environmental Sciences major paralleling the more socially oriented Environmental Studies. Scientists more than any other field have discovered and studied global warming, the loss of biodiversity, and so on down the long list, leaving the social sciences behind, so we know what has happened to the earth but not really why or how to change course.

1. **The Engineering Department** can play a special role in teaching, research and data base development for sustainable systems. It could assist the Bay Area Alliance for Sustainable Communities, which already has important ideas on its web site,

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<sup>5</sup>Michael Adams, *American Backlash*, 2005. Adams, a Canadian pollster, using over 8,000 social values questionnaires fielded in the United States from 1992 through 2004, finds that nearly half the population is disengaged from politics and that engaged Republicans and Democrats have more values in common than the disengaged. *American Backlash* is one of the *Toronto Globe's* 100 most important books of 2005. Other surveys show Americans have less understanding of science than in other developed nations.

[www.bayareaalliance.org](http://www.bayareaalliance.org), such as the Compact, Indicators Report, and Sustainable Practices, news, and quarterly meeting announcements. There has been explosive growth in recent years in design and operation of buildings, reflected in the Green Building Conference (West Coast Green), held this year in San Francisco on Sept. 28-30. Sustainability means growing employment opportunities for engineering students. A data base could organize information about technologies and sample buildings.

2. Research could involve students in landscaping and buildings. The waste of one system, such as farms or buildings, can become the resource for another system, such as building materials, landscaping, and food production. The Biology Department could do research on edible and otherwise useful plants that are harvested by students or staff. Perennial trees, shrubs, vines, and herbs, and self-sowing annuals like nasturtiums require minimal maintenance. All of these plants could have labels, so that students could learn the names as they walk around campus.
3. The landscaping could be fed by water and greywater from the campus buildings, linking them together ecologically. The Engineering Dept. could do research on using rainwater catchment systems on roofs, tanks, and ponds to provide water. Tanks, retrofitted or integrated into new buildings, would also provide temperature moderation.
4. Similarly, greywater could be fed into mulch basins or treated through a sequence of ponds to cycle all the nutrients from food wastes and toilet wastes for reuse on site. Research could be done on food scrap composting, composting toilets, and on-site small-scale sewage treatment and conversion to fertilizer, taking a holistic approach to the cycling of water and nutrients (see [www.oasisdesign.net](http://www.oasisdesign.net)).
5. Further engineering research can be done on new buildings constructed of sustainable materials, some available on campus, such as soil. Other examples of materials include cob, straw bale, wattle and daub, and earth bags. Earth plasters require more maintenance. e.g., replastering, but could provide an opportunity for education and student involvement.

#### **D. Education.**

1. Environmental education (EE), has, unfortunately, been all too small a part of the education curriculum, but at least it exists and annually celebrates itself at the BAAER Fair in Marin. I don't know much about this area, but I suspect more could be incorporated into the K-12 curriculum, and that the College of Education could increase its teaching about how to teach EE. EE lends itself to hands-on learning in classrooms and on field trips. EE can excel at life-style choices not too removed from the prevailing culture. The challenge of EE is probably greatest for college-bound high school students, who have little idea of the larger world around them.
2. Sustainability requires that economic growth come from increased productivity of a local or regional population, rather than draining labor and talent from other areas, which is unsustainable. The primary potential for improved productivity is among low education, low income families. The schools in Hayward are at best doing poorly and, in the eyes of many, failing to provide a good education. The College of Education could focus on an

area of Hayward, or a school like Tennyson High, which is close to the campus and is trying to serve a difficult population with few resources. The College could raise foundation grants for extra effort in school administration, classroom teaching, monitoring students, extracurricular activities, out reach to families and truancy, tutoring, and family services.

- E. **A proposed undergraduate course.** Interested faculty could discuss what a four unit multi-disciplinary course in sustainability would cover, with each department contributing but not assuming its field is the whole elephant. The course would have its own faculty-written text and study activities and be offered experimentally by motivated faculty as an upper division general education option, with student evaluation used to improve the experience. The course could include field trips, interviewing citizens, experiments, and use of relevant interest group and political action as it occurs in the quarter. If faculty consensus develops, such a sustainability course could become required for graduation. The first step would be discussion at departmental meetings to find interested faculty. They would then form a team and work on developing a multi-departmental course.
- F. **Research and Publication.** Sustainability should also be a research frontier. The CSU Hayward Campus through the Committee on Research should attempt a limited, highly focused effort to develop a book or articles each academic year in each college. Professors would submit brief proposals to a panel which would screen for the best ideas. These ideas would then be further developed and submitted to a panel which would include scholars from Stanford, Berkeley, and other CSUs with expertise in the field. Winning profs would get the time and social encouragement they need to produce publishable work, which would be submitted to refereed journals or publishers and could also be published by CSU Hayward Campus using new low-cost technologies.

#### IV. **The University and Community Education for Sustainability**

- A. The CSU Hayward Campus should help create a Vision of Sustainability in the larger community for its own sake and for promoting enrollment growth. It could publicize sustainability activities to high schools and community colleges to add to the appeal we are already promoting to our feeder institutions. We should give high school students and community college transfers some special reason to come here in addition to the usual desire for a degree and a better job.
- B. Once a quarter the University could sponsor “Harvard comes to Hayward,” featuring a speaker from Harvard’s sustainability program, which was the subject of a major conference in Cambridge in April of this year. Other events and publicity would surround a major lecture. The speaker would meet with students, local leaders, the local press, interested faculty such as the panel members who screen research ideas. The event would be used to tone up Hayward’s image viz a viz other CSUs, Stanford, and Berkeley, and encourage some overlap in thinking between Harvard and Hayward, which are so similar in sound and spelling.
- C. The inauguration of the Valley Business and Technology Center provides an opportunity

to call attention to the costs of business as usual and potential for a sustainable economy. Economic analysis shows the growing profitability of sustainable technologies and the increasing economic costs of failure to do so. The University could invite prominent speakers, such as Al Gore, Robert Kennedy Jr., Lester Brown, or Amory Lovins, to talk about economic sustainability.

- D. CSU Hayward Campus could develop a web site on sustainability, particularly as an academic discipline involving many fields, linked to what we are doing in these fields. We could produce programs for the TV Studio, including the Harvard-Hayward event and inauguration events. These programs would be suitable for broadcast on UCTV, UWTV, the Research Channel, Link TV, or the local community access cable channel.
- E. The research on sustainability and its broader implementation could be presented to a larger public on Science Day or on a new Sustainability Day .
- F. The University administration should have a relationship to its immediate neighborhood, the Old Highlands. University policy has cut off access between itself and the neighborhood, and a connector from Hayward Blvd. to the Loop Road would reestablish some connection that was broken when the Campus Drive access was closed. Someone from the University should attend a meeting of the OHHA (Old Highland Homeowners Association). Rob Simpson, a member of the OHHA Board and owner of Grandview Realty, has a nursery of redwood trees that could be planted on the campus.

## V. The **Physical Operations of the Campus**

- A. **The Village Bus:** a frequent, rapid bus shuttle between the campus and Hayward BART is proposed as part of Quarry Village but it would also serve the campus. Quarry Village, a large, green affordable neighborhood development near campus, is described in more detail below. For details on the bus, see the link to the Village Bus on [www.quarryvillage.org](http://www.quarryvillage.org). This frequent, rapid bus will take eight minutes from campus to Hayward BART.
  1. The University should support this bus by allowing the route to come to the center of the campus, to a stop just short of the upper entrance to the PE building and then to a terminal turn-around just beyond the east Library pedestrian bridge. This route increases safety compared with existing bus service by reducing the points of pedestrian-bus crossings from several dozen to two. This route increase the speed of the bus by at least five minutes, and delivers riders close to most campus buildings. This route is essential for the efficiency and high ridership of the Village Bus. The route requires a new ramp just west of the Music Building. The buses will be medium weight, and it is not clear yet if stronger sidewalk would be needed. Trucks have used these sidewalks without problems.
  2. The University should study and seek student support for a class pass that would allow all students to ride the bus without charge, which would greatly increase transit access to the campus, alleviate congestion, allow expanded access at low cost, reduce automobile dependency, and thus contribute to sustainability and enrollment at the same time. From *Quarry Village Overview* in the documents section of the Quarry Village

website: “**Class pass** would be voted on by Cal State students and collected as part of their fees. Students would then get a free pass for the quarter. At \$ .50 per quarter unit, this would cost the average student with 12 quarter units \$3.00 per quarter and produce about \$240,000 per year. About 35 campuses, including Berkeley and San Jose, already have very successful class pass schemes approved by student votes, often by landslides.”<sup>6</sup> Class pass financing is part of the bus pro forma shown on the Quarry Village website on the investors page.

3. A successful program would have synergy, with increasing ridership justifying more frequent service, less congestion helping speed, more ridership and speed supporting lower costs, and a strong transit backbone supporting car-free housing development along the Carlos Bee - Mission Blvd. corridor, which in turn supports more affordable housing and higher enrollments.

**B. Auto access.** It is very important to avoid subsidizing car travel with parking structures. See Don Shoup, *The High Cost of Free Parking*.

1. The Village Bus would be faster than cars for travel time in its corridor. The bus delivers people to the center of the campus, while drivers are delayed by congestion on access roads, hunting for parking, and walking in from more distant parking lots. If campus parking is then market-based and proves to have some surplus, more land for building becomes available, supporting higher enrollments with less traffic. The bus has the capacity for enrollment expansion without causing congestion or the need for more parking, and, in fact, allows conversion of parking to buildings so the campus could become architecturally more like a real university.
2. Car access should not be arbitrarily congested; a third access point can easily be build along Hayward Blvd., alleviating congestion at Carlos Bee Blvd., Hayward Blvd., and Loop Road intersections. [details omitted]
3. Car pooling could be encouraged more effectively [details omitted].

**C. Facilities Management, Masters in FM**

1. The CSU Hayward Campus operations can become more sustainable through improved facilities management: better building energy efficiency, heating, and water use, improved recycling, reduced litter, and better maintenance and appearances.
2. The goal is not just performance, but a better system of facilities management (FM) that can be used by all larger institutions, public, profit, and non-profit.
3. The program would include the development of a graduate degree in FM in the Engineering Department with support from the Departments of Management, Environmental Sciences, and Environmental Studies. The program would link management of the human landscape with management of the natural landscape.
4. The Masters of Science in FM would use campus FM operations as a major learning tool and also contribute to improving the FM system used by the University. FM would cover not only the science and technology of buildings and landscapes, but also the information technologies used to manage them, particularly the use of ArcMap and the development of mapping layers and database needed for management. The MS degree

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<sup>6</sup>See Jeffrey Brown, Daniel B. Hess, and Donald Shoup, “Unlimited Access; Prepaid Transit at Universities,” *Access* 19, Fall 2001, pp. 40-41. [www.spspr.ucla.edu/its/UA](http://www.spspr.ucla.edu/its/UA).

would apply to FM for both public and private institutions and would include business management and accounting prerequisites.

5. The FM field covers both the economics such as budget and the sustainability issues; for example, water and energy conservation can feed back into economic efficiencies. FM also covers the balance between technical and social solutions, such as whether lights should be turned off by detection of a lack of sound and movement, or by training people, especially professors, to turn off the lights. FM involves capital investment analysis, such as rewiring lights to correspond to the natural lighting of a room or hallway, or investing in skylights to reduce lighting costs. It would include the analysis of windows, window films, awnings, and shades for insulation, heating and air conditioning. FM would include budgetary issues of how to get capital fund investments that would reduce operating costs, and to monitor the results to see if promised savings were delivered. FM would consider how to allow the people in the room to control heat and air flow.
6. FM would improve waste management, to reduce unneeded paperwork and other waste reduction, to improve recycling, and to reduce the unsightliness of dumpsters and the litter around them.
7. FM would improve vehicle purchases, e.g., low emission diesels and battery assisted hybrids.
8. FM would improve the ability of staff to manage the books, papers, supplies, furnishings, and other gear that accumulate in offices, other rooms, and hallways without being useful or historical.
9. FM involves facilities workers, who can work with students and contribute to the knowledge layers needed in an integrated management system. For example, some systematic monitoring of litter and costs of pick-up could be initiated. Criminal justice students could finger-print the occasional bottle or aluminum can, the *Pioneer* could publicize against litter with a photo of the litter and the fingerprint, and the success of a litter prevention program could be measured against the base line litter measurement. If there are savings and budget rules allowed, FM workers might be allowed to allocate the saving to a scholarship for FM student, involving the FM workers in the life of the University and recognizing their importance for success.
10. Successful ideas from research on landscaping and buildings can be implemented campus-wide and integrated into the teaching for the Masters in Facilities Management. The CSU Hayward Campus could lead the way in integrating facilities management and ecologically sustainable systems, increasing self-sufficiency and the integration landscaping and building systems for a post-fossil fuel future.

**D. Selected Facilities Improvements.** The campus is aging. It needs a lot of what old hands in Facilities Management call “fluff and buff.”

**1. Grounds.**

- a. Landscaping should be based on native plants. The campus native plant garden just west of North Science, planted by environmental students, is a nice start.
- b. Native plants should have identification signs and related classes could use the campus for field visits. The Criminal Justice Dept. could set up video camera and other electronic observation to catch criminals who pull up the signs.

- c. The three dead trees west of the north side of the Fine Arts Building need to be replaced.
  - d. Grasscrete should replace pavement in parking lots. Grasscrete is cement block with holes that allow grass to grow, laid on a base strong enough for vehicles.
  - e. Litter needs to be picked up; the slope south of Harder near Hayward Blvd. needs picking up. Trash can maintenance needs to be improved [details omitted].
  - f. The natural area on the south side of the campus needs to be restored: the fence removed, the three auto wrecks hauled out, the litter picked up, and the trails realigned and rebuilt [details omitted].
  - g. Feral cats, which have a devastating impact on bird life, need to be trapped and taken to Barnes Court Animal Shelter.
2. **Pedestrian planning** is now secondary to the automobile. Pedestrian ways can be improved with more direct sidewalks and putting in pavement or walkways where foot traffic has worn a tread in the dirt. Walkers are now forced into auto travel lanes in several places. A walkway needs to be built on the south side of Harder from Pioneer Heights around to the Development Center, with an improvement in the existing dirt short cut to Hayward Blvd. Walkways are needed on either side of Carlos Bee and Hayward Blvd. The current system encourages using elevators over stairs. The central stairwell in Fine Arts is dirty, dreary and almost invisible. The wall separating these stairs from the downstairs hall should be opened up, the doors left open, the stick-on treads replaced, and everything repainted in a brighter color. Fire safety rules made for wood buildings may need to be challenged for masonry buildings. The stairwell at the south end is dark and dirty, and the trash can at the entrance has a lid which is dirty and features wads of gum. Trash can lids are generally eyesores; they need to be kept clean and right side up.
3. More **classrooms and offices** could be carpeted. Marks on the floor could be made for desk locations to speed up rearranging the room. Desks, chairs, and other classroom furniture could be marked for the classroom they belong in. We need a better system for repairing furniture. We should hang more art work and visually interesting educational material on the walls. Better maintenance of blinds and curtains is needed.
4. **Energy.** Stairwell, hallway, classroom, and other lights are often on in spite of a blaze of sunlight. They need to be on timers or made to be light-sensitive. Instructors need to be encouraged to turn off lights. Skylights could help. Some rewiring could help to put lights in dark areas on a separate circuit from light areas. Groups of Departments could be penalized when their building electrical consumption exceeds a maximum, and rewarded when saving below a minimum based on business as usual. Outside lighting is also excessive. At night, the campus must be highly visible from outer space. Some unwalked areas are lit; some areas have two or three lights shining on them. The new lights along the walk to the new Valley Building are much more aesthetically pleasing than the high lights in the parking lots and could use less energy. Some research might be needed on how to balance safety with energy conservation, but this is not just a sustainability issue; it is easily-saved money down the drain.

## E. Health Services

1. The physical health of students should be more than just a service; it should be tied to sustainability and wellness. The food economy is a major threat to sustainability and health. Students need to understand how poor diet and sloth reduce vitality and lead to overweight and obesity, atherosclerosis, heart disease, cerebrovascular disease, stroke, metabolic syndrome, diabetes, cancer, bone mass loss, rheumatoid arthritis, reduced attention span, and depression.<sup>7</sup>
2. Health Services provides good health education and some health care; it could work with AS and KPE on encouraging intramural sports, exercising to music, and dance and on promoting health diet. The campus food vendor and Whole Foods might also be able to help.
3. Health Services could work with AS and KPE on using some small part of student health funds to reward students on a sliding scale based on Body Mass Index, resting heart beat, and time to run 1.5 miles. By the same token, existing education and counseling on body weight issues could be supplemented with more outreach and social reinforcement of healthy lifestyle to reinforce will power.
4. Human physiology requires exercise down to the intra-cellular level, where exercise plays an essential role improving cell chemistry to take in glucose brought to the outside of the cell wall by insulin. Without exercise, cell uptake of glucose weakens, more insulin tries to push it in, and metabolic syndrome develops, followed by diabetes.
5. The University needs to restore the par course and encourage its use.

## VI. Sustainable Development in Hayward That Helps Enrollment.

- A. Surveys show that the lack of affordable housing near campus is holding back enrollment growth. On-campus projects are helping, but more could be done off-campus. A plan for high density along Hayward Blvd. was eliminated a few years ago because the neighborhood wanted lower densities, and the University did not participate in the decision-making process. There is still potential for Smart Growth in the Carlos Bee Blvd. and Mission corridor to BART, but the University has not taken any interest in it. Smarter Smart Growth, which includes rental of parking at market rates separate from units, reduced parking, and eco-pass, would help develop a sustainable corridor from the campus to BART. Eco-pass is a bus pass for residents to ride the Village Bus free, paying for it rent or condo fees.
- B. The University should support the development of Quarry Village, a major advance in sustainable neighborhood development located near the campus, just below Wimbledon Woods. The property has about 24 developable acres, is owned by Caltrans, and will be coming onto the market in a few years. Quarry Village would provide more, and more affordable, housing than alternatives currently preferred by the market. Quarry Village would provide affordable housing for CSU faculty and staff, helping recruitment and retention. Already a dozen CSU faculty, retired, staff, and students have become approved applicants, indicating a serious interest. Quarry Village would be the linchpin for

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<sup>7</sup>Jonathan Shaw, "The Deadliest Sin," *Harvard Magazine*, March-April, 2004, pp 36+; Brad Lesley, "What Does Science Say You Should Eat?" *Discover* Vol. 25 No. 02, February 2004

additional development along the corridor to the BART station. See [www.quarryvillage.org](http://www.quarryvillage.org).

- C. Additional Caltrans land is located west of the campus in the Bunker Hill and Spring Grove neighborhoods. Due to its steepness and existing lot lines, this area lends itself to single family houses. Bunker Hill Blvd. needs to be extended to Bee Blvd. for access.
- D. The City of Hayward starting November 2006 is studying what to do with the surplus Caltrans right-of-way. The University should work with the City, citizen groups, and neighbors on a plan that provides sustainable housing.
- E. The University could be more involved at the regional level. It could provide more support to the Bay Area Alliance for Sustainable Communities, <http://www.bayareaalliance.org/>, a multi-stakeholder group trying to plan for the Bay area. It is led by the Bay Area Council, Sierra Club, Greenbelt Alliance, Urban Habitat, and ABAG [details omitted].

## **VII. Leadership for Sustainability.**

- A. The University does not have the resources, the mandate, or even a strong inclination to pursue sustainability. The short-term top priorities under President Mohammad Qayoumi are to increase enrollment, increase tenure-track faculty, and make serious budget cuts. The faculty are the most important resource, but their political model is autonomy within negotiated curricular requirements and FTE. They are, nevertheless, ready to talk about anything, and a few will grasp the significance of sustainability for themselves, the institution, and the role of the university in society and history.
- B. Presidential leadership requires gradualism, persuasion, and building from a core of committed professors. Long-term, anticipating with substantive programs what is increasingly meaningful for society will produce a reputation for leadership and strong enrollment. The President could energize existing faculty and staff interest by holding a meeting for those interested and by appointing a willing volunteer to coordinate and encourage campus-wide sustainability activities.
- C. The faculty are more able to understand sustainability as a major focus of academic activities and less able to work on the other three aspects:
  1. University and community education for sustainability requires a sense of public relations and promotion to get publicity and popularize the institution while promoting sustainability, and can be accomplished by cooperation between the development staff, media staff, and key faculty.
  2. The physical operations of the campus provides the most scope for presidential leadership through his staff, and also working with key faculty on the FM academic aspect.
  3. Sustainable development in Hayward and the region that helps enrollment requires the President to work with the City of Hayward and community groups to develop consensus for ped-bus development in the corridor to downtown Hayward. Regional

stewardship requires more involvement in the regional agencies, Bay Area Alliance, and related interests.

- D. The University could start by joining the Association for the Advancement of Sustainability in Higher Education, the Association of University Leaders for a Sustainable Future, the Campus Consortium for Environmental Excellence, and the National Wildlife Federation's Campus Ecology Program. The University could assess itself with an evaluation instrument, such as the Campus Sustainability Assessment Framework, the Indicators Snapshot of the New Jersey Higher Education Partnership for Sustainability, or the Environmental Management System Self-Assessment Checklist of the Campus Consortium. With enough work, the University could be included in the Worldwatch Institute list of Campus Greening Initiatives.

**Conclusion:** Sustainability, as a core value, has a wide reach of meaning that extends into all areas of university life. To pursue sustainability as a means of increasing enrollment is self-contradictory if it means never-ending growth, but makes sense if focused on getting an enrollment appropriate for our service area. Pragmatism requires making the enrollment-sustainability connection, but more important, it is the right thing to do. The university must be more than just a product of society; it must provide leadership to the community where some cultural values and the inertia of custom are degrading our future.

**Alma Matters; Colleges and universities are learning what it takes to go green** By Joel Makower, founder of GreenBiz.com and cofounder of Clean Edge, Inc., writer, speaker, and strategist on corporate environmental practices, clean technology, and green marketing. 12 Sep 2006 [edited to reduce length by Sherman Lewis]

The greening of academe is nothing new, but has now taken root in a big way. It's not just about doing a few good, green things -- recycling, buying green energy, building green buildings, and all the rest, and it's not just about saving money or being seen as a good neighbor. It's about being seen as a sustainability leader in order **to attract students**, funding, and media attention.

Companies and activist groups alike are trying to help. For example, General Electric and mtvU recently launched an ecomagination Challenge, with a \$25,000 prize for the school proposing "the most impactful and innovative project to 'green' their campus." It joins the Campus Climate Challenge, an activist-led network of more than 300 schools promoting leadership on global warming.

A decent-sized school can combine the environmental footprint of a myriad of operations: **office buildings, hotels, food service, laundry, retail, vehicle repair and maintenance, energy production, waste hauling, construction, health care, even road building and small manufacturing.** And if there is scientific research going on, it may involve a witch's brew of **hazardous chemicals and materials, from urethane to uranium.**

To make all that activity safe for people and the planet, someone's got to take the lead. At

some schools that leadership comes from the administration and faculty and at others, from the students themselves.

Historically, students have been the major drivers, says Julian Dautremont-Smith, associate director of the Association for the Advancement of Sustainability in Higher Education. "They can make things happen in a way that staff or faculty haven't. That said, **there is increasingly leadership from school presidents that are committed to these issues.** It's developed into a more high-level activity. Schools are trying to compete -- be the leader in environmental studies or sustainability."

At the University of California campuses, students have proposed dozens of policies that have been embraced by administrators, from green building designs to organic produce in the dining halls. Student representatives from throughout the UC system created the California Student Sustainability Coalition "to fight for a sustainable University of California," according to the group's website. Activist groups have played a role. A campaign sponsored by Greenpeace targeted system-wide policy changes to bring green buildings and renewable energy to all UC campuses. (Full disclosure: My firm, Clean Edge, authored a report funded by Greenpeace as part of that campaign.)

The university system's governing body, the UC Regents, approved a Green Building Policy and Clean Energy Standard in 2003, which mandates that new buildings outperform state energy-efficiency requirements by at least 20 percent. And in the UC's Office of the President, there sits a "sustainability specialist."

Sustaining and broadening campus greening initiatives over time has proven to be **very difficult for most students**, who typically cycle in and out of the campus every two to four years, says Julian Keniry, who heads the **National Wildlife Federation's Campus Ecology Program**. "We've encouraged addressing this in three ways: cultivating **administrative champions** who can adopt and build programs over time, hiring **sustainability directors** to lead and facilitate these initiatives, and developing alumni networks to serve as fiscal sponsors and watchdogs," she says, adding that there has been good progress on the first two: "Administrative champions are emerging who are networking through their planning, business, and physical-plant associations, and dozens of colleges and universities have created a sustainability director or similar positions."

Cash-strapped school administrators may balk at spending extra money for green things, even if the investments will yield savings within a few years. Students inevitably end up paying the extra costs, either through tuition hikes or voluntary fees. For example, in July, the Tennessee Board of Regents approved increases in student fees to fund renewable energy at Middle Tennessee State University and Tennessee Technological University. The \$8-per-semester fee hikes had previously been approved by almost 90 percent of students at both institutions. Students at Central Oregon Community College voted last spring to increase their \$1.75-per-credit hour student fee by 25 cents in order to purchase renewable energy.

It can be money well spent, and not just for the environment. The process of greening campuses can provide a learning opportunity for students that will be directly transferable to

greening their future employers, says Liz Maw, executive director of **Net Impact, the 10,000-member association of MBA students and recent grads, which runs a Campus Greening Initiative**. "Students build project-management skills, cost-benefit analytical skills, change-management skills, and communication skills," she says.

There is no certification program or generally accepted definition of a "green campus," leaving each campus to define its own goals. As with companies, this leads to some schools hyping what amounts to a so-so greening effort. "There are some schools not doing as much as they could do and claiming to be leaders," acknowledges Dautremont-Smith. "But some are putting sustainability into their guiding documents -- their mission statement, master plan, and **strategic plan**." That, he says, is the sign of a true leader.

Several tools can assess sustainability on campus. The most comprehensive is the **Campus Sustainability Assessment Framework**, the result of more than two years of intensive work by a master's student at Royal Roads University in British Columbia. It covers 170 social, environmental, cultural, political, and economic **indicators** to assess campus sustainability, including short-term and long-term **goals** for many indicators. Schools all over Canada are using it to support sustainability progress, says Dautremont-Smith.

Others have come up with simpler **checklists** -- see

<http://www.njheps.org/assessment/guide.htm> and

[http://www.c2e2.org/ems\\_assessment/questionnaire/scorecard.htm](http://www.c2e2.org/ems_assessment/questionnaire/scorecard.htm), for example.

However "simpler," they still describe the full range of potential activities in which a comprehensive sustainability effort needs to engage.

Green Campus 101: Worldwatch Institute offers several case studies [<http://www.worldwatch.org/taxonomy/term/458>] on campus greening initiatives.

Good resources can also be found on the websites of NWF's Campus Ecology Program [<http://www.nwf.org/campusecology/>] and the Association of University Leaders for a Sustainable Future [<http://www.ulsf.org/>].

The American College & University Presidents Climate Commitment

<http://www.presidentsclimatecommitment.org/index.php> has 103 presidents signed up. About:

"The American College & University Presidents Climate Commitment is a high-visibility effort to address global warming by garnering institutional commitments to neutralize greenhouse gas emissions, and to accelerate the research and educational efforts of higher education to equip society to re-stabilize the earth's climate.

Building on the growing momentum for leadership and action on climate change, the Presidents Climate Commitment provides a framework and support for America's colleges and universities to go climate neutral. The Commitment recognizes the unique responsibility that

institutions of higher education have as role models for their communities and in training the people who will develop the social, economic and technological solutions to reverse global warming.

Presidents signing the Commitment are pledging to eliminate their campuses' greenhouse gas emissions over time. This involves:

- \* Completing an emissions inventory
- \* Within two years, setting a target date and interim milestones for becoming climate neutral.
- \* Taking immediate steps to reduce greenhouse gas emissions by choosing from a list of short-term actions.
- \* Integrating sustainability into the curriculum and making it part of the educational experience.
- \* Making the action plan, inventory and progress reports publicly available.

The college and university presidents and chancellors who are joining and leading the Commitment believe that exerting leadership in addressing climate change will stabilize and reduce their long-term energy costs, attract excellent students and faculty, attract new sources of funding, and increase the support of alumni and local communities.

Under the guidance and direction of the Leadership Circle, The American College & University Presidents Climate Commitment is being supported and implemented by the Association for the Advancement of Sustainability in Higher Education (AASHE), Second Nature, and ecoAmerica.

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Financial Times Report - Business Education: Global warming has become a hot topic By Rebecca Knight in Boston, Financial Times. Published: Jan 29, 2007

<http://search.ft.com/ftArticle?queryText=Many+universities+are+teaching+the+importance+of+climate+change&y=8&aje=true&x=19&id=070129000812>