

Report of the CSM Sustainability Committee Academic Year 2007-08

Executive Summary

Much has been accomplished during the past year. The Sustainability Committee (SC) bylaws were modified to accommodate the recent administrator title changes. Several new courses, that include the word sustainability in the title were developed and taught this past academic year. We have taken a step toward enhancing the relationship between CSM and the City of Golden by welcoming Mr. Chuck Baroch as a liaison representing the City of Golden Sustainability Committee. The students have been busy through their involvement in the planning of Climate Action Days. Additionally, they have worked with Environmental Health and Safety to take campus recycling to the next level. The students have also been busy maintaining the student commitment to RTD Collegepass (the bus pass for students) while working to enhance student transportation service. Sustainability elements have been an ongoing feature of Facilities Management activities. We are now in a position to make the general campus more aware of these activities. Mr. Chris Cocallas was hired as the new Campus Architect and Director of Capital Construction and will begin his tenure in September 2008. Efforts are also underway to fill the Associate Director of Facilities Management. Both of these positions are considered critical to the energy and materials components of sustainability efforts on the campus.

The CSM Sustainability Committee spent a good portion of the year listening to various campus constituencies and developing a plan of action for the coming year. As previously mentioned, it is important that we become more aware of sustainability related activities already occurring on the campus and share this information with the campus as a whole. Therefore, we will focus on educating the campus through a cross cutting poster session, enhanced signage for recycling a waste management and developing a campus sustainability map to highlight activities already in place. Also, it is imperative that we understand our consumption rates and set reasonable goals for reduction. This will be accomplished through a campus audit. With the recent increased cost of fuel, we also want to reestablish the discussion of the RTD bus EcoPass for faculty and staff. Lastly, we remain convinced that the school is in need of a Sustainability Coordinator. Though we have benefitted from a motivated team of volunteers, because of the large scope and challenges of achieving campus sustainability, progress will necessarily be slow until such a coordinator is an integral part of the CSM staff.

Committee Establishment and Membership

Academic Year 2007-2008 was the first year that the Sustainability Committee operated as an approved formal University Committee. This was the outcome of a new committee approval process that was successfully concluded with the CSM Board of Trustee's approval of Handbook modifications at its meeting of 7 June 2007. This is the second annual report; the first report was written for the 2006-07 academic year.

Through nominations made by campus bodies (the Faculty Senate, the DHDD group, the Administrative Faculty Council, ACE, ACSM, and GSA), in conjunction with *ex officio* membership as designated in the Committee's operating bylaws, the following

Committee members were appointed by President Scoggins to serve during the 2007-08 Academic Year:

Gary Bowersock (Director of Facilities Management)
Dan Fox (Director of Student Life)
Laura Pang (DHDD representative) - Term ends May 2008
Emily Przekwas (Undergraduate student representative) - Term ends May 2008
Jonathan Meuser (Graduate student representative) - Term ends May 2008
David Muñoz (ENG, Senate representative) - Term ends May 2009
Tom McKinnon (Vice Chair) *on a leave of absence*.
Jennifer Schneider (LAIS, Senate representative) - Term ends May 2008;
replacing Tom McKinnon who is on leave of absence
Robert Siegrist (ESE, DHDD representative) - Term ends May 2009
John Skok (GE, ACE representative) - Term ends May 2010
John Spear (ESE, Senate Representative) - Term ends May 2010
Tim Sweitzer (EHS, Admin. Faculty Council Rep.) - Term ends May 2010

Dr. David Muñoz was elected Interim-Vice Chair for 2007-08 per Committee bylaws. Ms. Rebecca Flintoft was a frequent stand-in for Dr. Dan Fox. Other active participants include Dr. Masami Nakagawa, Dr. Carrie Sonneborn and Mr. Chuck Baroch, liaison from the City of Golden Sustainability Committee.

Meeting Schedule—Subcommittees

The Committee conducted open meetings monthly, conducted additional special activities and also held occasional meetings of its subcommittees (1) Sustainability Across the Curriculum (Drs. J. McNeil and M. Nakagawa, Co-Chairs) and (2) Student Sustainability Activities (Doctoral Candidate, J. Meuser, Chairs).

Committee Activities during Academic Year 2007-2008

The Committee conducted open meetings monthly, conducted additional special activities and also held occasional meetings of ad hoc and affiliated groups (e.g., CSM Student Sustainability Committee).

The list below provides a summary of the activities of the Committee during the academic year but is *not* intended to represent activities in order of importance/significance:

1. Institutional Membership in the Association for the Advancement of Sustainability in Higher Education (AASHE, see <http://aashe.org>), \$1000, covered in 2006-07 by Student Activities. This has become an important publication for us as we work to compare our campus sustainability activities with those of our peer institutions.

2. Institutional Membership in the National Wildlife Federation's (NWF) Campus Ecology program. \$150 was provided by the Student Council on Sustainability. The NWF provides scholarships for campus sustainability projects, assessment instruction, campus case-studies, and opportunities to publicize sustainability-related campus activities.
3. The Sustainability Bylaws were updated to accommodate the changes made in campus titles (from Associate Vice President for Academic Affairs to Associate Provost and from Director of Plant Facilities to Director of Facilities Management). The updated set of Bylaws can be found in Appendix A.
4. Several new courses with sustainability in the title were developed and delivered. For example, Dr. David Munoz developed a new course, *Sustainable Engineering Design* that was offered for the first time during the fall 2007 and will be offered again in fall 2008. Dr. Masami Nakagawa developed a new course entitled "*Introduction to Sustainability*", that was offered for the first time in spring 2008. In addition, the course entitled "*Engineering and Sustainable Community Development*" was led by Dr. Juan Lucena and co-taught with several faculty from the Liberal Arts and International Studies (LAIS) Division. Course descriptions are provided in Appendix B.
5. During the spring of 2008, Mr. Chuck Baroch, CSM alumnus and former Golden Councilman and Mayor, attended many meetings of the CSM Sustainability Committee. He is also currently Vice Chair of the Sustainability Committee for the City of Golden. He was encouraged by President Scoggins to attend the CSM Sustainability Committee meetings as a liaison from the city to advise the committee about activity planning of common interest. Mr. Baroch will serve as a nonvoting liaison between the CSM and City sustainability programs. We will seek opportunities in which the two organizations work together on mutually beneficial projects. So far the Golden city committee has identified six different elements on which to focus: Buildings, Economic Health, Education, Energy Efficiency, Solid Waste, Transportation, and Water. Each of these major elements was divided into four to ten sub-elements, leading to about 50 possible activities. Early examples of mutually beneficial efforts include:
 - a. Establishing a composting facility,
 - b. Developing alternate energy generation projects such as solar thermal, solar electric, wind or water turbines and
 - c. Establishing a shuttle bus service to reduce vehicle miles traveled by students and residents in Golden.

We look forward to a long a fruitful relationship with the City of Golden.

6. Under the leadership of the graduate student representative, Jonathan Meuser, and Dr. Masami Nakagawa, the Sustainability Committee supported the 2nd Annual CSM Climate Action Days (April 12th-20th, 2008) activities. A Climate Action Days subcommittee comprised of members of the Student Council on Sustainability and Masami Nakagawa collaborated heavily with the student

clubs Earthworks and Engineers for a Better World (to be changed to Engineers Without Borders in AY 2008/09) to engage members of the campus and community, stimulating campus dialogue about sustainability and global climate change. All speakers were volunteers and expenses were covered by student club budgets. A more detailed summary of the events can be found in Appendix C.

7. There were several student-involved, SC-related initiatives that are worthy of note. These include:

Recycling: Although not directly related to the work of the Committee, a number of improvements emerged in the CSM recycling program during 2007-2008. The Administration turned over campus wide recycling responsibilities to the Environmental Health and Safety (EHS) Department. EHS has completed a number of tasks to fully implement a comprehensive campus program including:

- a. Competitive bid process to select recycling vendors to support a campus wide recycling program.
- b. Eliminate five trash roll-off boxes in Student Housing areas and provide same size accumulation boxes for single stream recycling.
- c. Sponsor several Epics projects designed to enhance recycling awareness and identify recycling opportunities available at CSM.
- d. Establish an electronics recycling program for students.
- e. Increase the number of recycling accumulation areas.
- f. Establish a student FaceBook group to improve campus recycling awareness.
- g. A number of student organizations/committees approached EHS to change the recycling program. EHS has rebutted these changes citing a lack of student participation rather than insufficient recycling opportunities or infrastructure.
- h. One EPICS team project included a survey of CSM students to determine utilization of campus recycling services. Over 90 percent of the students surveyed believed recycling was important and approximately 70 percent were aware that the School offers recycling services. In addition, over 95 percent of the students surveyed were aware that paper can be recycled on campus. Despite these numbers, less than half of the students surveyed actually use campus recycling services.

One of the Sustainability Committee goals for 2008-2009 will be increasing recycling awareness and participation to complement the EHS improvements listed above. See the Waste/Recycle Signage work group activities described in Appendix D.

Transportation: During 2007-08, Mines students were provided an RTD Collegepass allowing unlimited use on all regional transportation district routes paid for by a \$35/ semester Intermodal Transportation Fee. The fee was

approved by an overwhelmingly positive student vote (77%) in the 2006-07 school year. Student Activities managed the distribution of the pass because it was an ASCSM initiative, and members of student environmental clubs assisted Student Activities in distributing the pass at the Celebration of Mines on August 31, 2007. During the 2007-08 academic year approximately 2,000 CSM students received the bus pass each semester, while all members of the Mines community using personal vehicles benefited from parking made available by those riding the bus. In an effort to improve bus pass distribution in the coming year, representatives from the Sustainability Committee, Student Activities, and the BlasterCard Office will meet to discuss the potential for positive change.

In response to concern within the student government over the effective use of the Intermodal Transportation Fee for an RTD Collegepass, Dean Chevront appointed an *ad hoc* committee to assess other potential options during the Fall 2007 semester. After some initial meetings, the Chevront *group favored assessing the* use the Intermodal Transportation Fee for a Mines campus-operated circulator bus. An advocate of sustainable transportation and an author of the Intermodal Transportation Fee, Jonathan Meuser requested to meet with this group. The group was informed of the collaborative CSM and the City of Golden Transit Demand Management (TDM) plan currently in development. Eventually, it is expected that the TDM will lead to the development of a Golden circulator bus funded by multiple partners, including RTD. The CSM/City of Golden TDM proposal was co-submitted in 2006-07 by ex-campus architect and committee member, Paul Leef, and partly inspired by the “CSM Parking Report: An Analysis of Options”, an analysis prepared as a collaboration between Leef, Meuser, and CU-Boulder Environmental Design graduate, Ms. Alexandra Harker. Thus, the Denver Regional Council of Governments (DRCOG) choice to fund the CSM/City of Golden TDM represents an early success of the CSM Sustainability Committee. The parking report was also provided to the Chevront group this year. The report includes an appendix detailing the operating budget of a previous City of Golden circulator bus (GUS bus). Despite additional revenue from fare collection, annual operating costs to run the circulator significantly exceeded the current CSM Intermodal Transportation Fee. The Chevront *group* concluded that while a circulator bus may better serve CSM students than the RTD college pass; the Intermodal Transportation Fee alone is insufficient to fund an adequate circulator bus. Collaboration with the Chevront *group* provides an example of how the Sustainability Committee can function to provide useful analysis to inform the campus community.

To clarify the rationale for the Intermodal Transportation Fee to the student body, Meuser authored a feature article in the Oredigger in December 2007. The ASCSM thereafter agreed to include an Intermodal Transportation Fee increase in the 08' vote. The fee increase was proposed to meet the increased cost of the RTD Collegepass in 2008-09. Student environmental clubs re-launched an educational campaign to inform the student body about intermodal transportation demand and specifically the benefits of a college bus pass. The fee increase passed. In the successive year a significant majority

(>60% approval) of CSM students voted in favor of a bus pass, evidence of both student support for intermodal transportation and the positive effect of educational outreach.

8. Facilities Management (FM) made several maintenance improvements that will yield savings in both energy and water usage. These are briefly summarized below.

Plumbing Shop

- a. Repaired insulation and painted 3000 feet of high pressure steam pipe and 3000 feet of condensate return pipe in steam tunnels.
- b. Installed thermal blankets on all exposed high pressure steam expansion joints and valves in steam tunnels.
- c. Installed water pressure regulators on Meyer Hall and Berthoud Hall and United States Geological Survey (USGS) building; dropping the water pressure from 110 psig to 65 psig.
- d. Installed new sinks, low flow faucets and flush valves in USGS.

Heating Ventilating and Air-Conditioning (HVAC) Shop

- a. Replacement of hot water pumps at BB, motors are more energy efficient.
- b. Tube cleaning of condensers on water cooled equipment, Green center (GC), USGS Chiller Plant (5C), General Research Lab (GRL), Hill Hall (HH), Library Chiller Plant (4C), Coolbaugh Hall (CO), Berthoud Hall (BE).
- c. Coil cleaning of HVAC equipment Campus wide.

Building Automation and Control (BA&C) Shop

- a. Lighting project Phase 4 occupancy sensors and T12 to more efficient T8 lamps.
- b. New outside air dampers at Meyer Hall and Green Center.

Electrical Shop

- a. Replacement of 3 Variable frequency drives with more energy efficient models.
- b. Replace T12 lamps and magnetic ballasts missed by the lighting project with more efficient T8 lamps and electronic ballasts.
- c. Worked with Blue Key to develop a specification for energy efficient lamps on the "M".

Grounds Shop

- a. Taken over all outside irrigation reducing water consumption.

Fleet Management

- a. Opting out of fleet management and reducing CSM fleet working toward the Governors Energy Office 20% fuel reduction by 2012.

9. President Scoggins has requested that the Committee undertake a review of campus conditions to determine whether it is prudent for Mines to commit to the “President’s Climate Commitment” <http://www.presidentsclimatecommitment.org/>, or whether we should design our own strategies to accomplish sustainability goals concerning carbon reductions and similar efforts. The university Presidents that sign this commitment agree to eliminate their campuses’ greenhouse gas emissions over time. This involves:
 - a. Completing an emissions inventory
 - b. Within two years, setting a target date and interim milestones for becoming climate neutral.
 - c. Taking immediate steps to reduce greenhouse gas emissions by choosing from a list of short-term actions.
 - d. Integrating sustainability into the curriculum and making it part of the educational experience.
 - e. Making the action plan, inventory and progress reports publicly available.

This requires a substantial effort, even in completing the emissions inventory. At the urging of Mr. Chuck Baroch, we invited Mr. Reggie Ingram of Johnson Controls this past summer who talked about a service that their company provides to help universities meet the requirements outlined in the President’s Climate Commitment. For a fee related to future energy savings to the institution, Johnson Controls will assess and identify ways to achieve carbon neutrality. According to Mr. Ingram this will typically require hardware changes and the purchase of carbon credits. However, as indicated above, this is not a simple question to answer and we have yet to do the first assessment step. One of the Committee goals for 2008-09 will be to begin the assessment step which will include the emissions inventory, but which also is much broader in scope.

10. Although not directly the result of the work of the Committee, Dr. Masami Nakagawa worked to establish a Memorandum of Understanding (MOU) between CSM and the School for Renewable Energy Science (RES) in Iceland. Under this MOU, RES provided two full scholarship opportunities for CSM graduate students. Currently, one graduate students from CSM is attending this one year renewable energy program.
http://www.res.is/graduateschool/page/students_2008_-_2009
11. In 2007-08 there were two winners of the Arthur B. Sacks Award for Excellence in Sustainability (the first award was given last year to Jonathan Meuser), an award for a graduating undergraduate student or a graduate student announced at Commencement (fall and/or spring). The Award recognizes unusual academic and service achievements and is presented through LAIS to any student nominated to and successfully reviewed by a faculty committee. It provides for a cash award, a plaque, and a reception. The second such award was made in fall 2007 to doctoral candidate of Chemical Engineering Birgit Braun. The third award was made in spring 2008 to Jason S. Fish, a senior level student who has

been active in the sustainability efforts on campus through his leadership in the student club *Engineers for a Better World*.

12. The search committee for the Campus Architect and Director of Capital Construction was successful in hiring of Mr. Chris Cocallas. Chris will begin in that capacity in September 2008. He comes to us after a serving for the past five years as the University of California at San Diego Principal Architect and, for fifteen years prior to that, as a Principal in his own Denver based firm. The committee, chaired by Gary Bowersock and also including David Muñoz, who served as a representative from the Sustainability Committee, is thrilled to find Chris. It is clearly good news for the sustainable future of the campus and community of the Golden.
13. The Committee is pleased by the level of 2007-08 student activity. However, we remain concerned that the scope of work related to promoting institutional education, research and operational improvements for sustainability demands the full-time effort of a staff person assigned to these tasks. The review of Colorado-based colleges and universities and scores of others across the U.S. with dedicated sustainability “coordinators” or “officers” prompted the Committee to recommend (14 March 2007) that such a full-time sustainability position be budgeted at Mines. Given budget austerity, however, this position was not approved for the FY 08 budget cycle. We remain convinced that the school is in need of such a coordinator if the sustainability activities are to continue to grow at an appropriate rate. Additionally, we were also disappointed to lose the administrative support of Jennie Kenney. Jennie had done an excellent job in taking and organizing meeting minutes and keeping track of the Sustainability listserve. This work will now have to be borne by the Committee volunteer membership. The Committee remains hopeful that either there will be some budget flexibility in the coming year or some creative approach may be devised to carve out support for a much needed CSM sustainability coordinator position. The budget estimate included within the AY 06-07 report is copied for the reader’s convenience in Appendix E of this report. We plan to adopt this as an on-going budget request for AY 09-10.
14. During the spring semester of 2008, the campus Sustainability Committee, impressed by the efforts and accomplishments of the Student Environmental Groups and eager to set its own goals, decided it needed to schedule a mini-retreat. The goals of the mini-retreat would be to determine a mission and vision for the committee that was tied to concrete goals and deliverables for the following academic year. The committee met for three hours on May 15, 2008. What resulted are a brief summary of the draft mission and vision statements, as well as the action items of the committee to be accomplished through work groups in AY 08-09. A summary of the retreat activities can be found in Appendix D.

The Committee stands ready to respond to any questions about its 2007-08 activities and this Report.

Appendix A – Sustainability Committee Bylaws

12.10 Sustainability Committee

12.10.1 Function

The purpose of the Sustainability Committee is to help guide the Colorado School of Mines' educational, research and service activities and provide advice on campus operations related to matters of sustainability in accordance with the School's interpreted mission statement approved by the Board of Trustees (2000):

"Colorado School of Mines is dedicated to educating students and professionals in the applied sciences, engineering, and associate fields related to:

- the discovery and recovery of the Earth's resources,
- their conversion to materials and energy,
- their utilization in advanced processes and products, and
- the economic and social systems necessary to ensure their prudent and provident use *in a sustainable global society.*

This mission will be achieved by the creation, integration, and exchange of knowledge in engineering, the natural sciences, the social sciences, the humanities, business and their union to create processes and products *to enhance the quality of life of the world's inhabitants.*

The Colorado School of Mines is consequently committed to serving the people of Colorado, the nation, and the global community *by promoting stewardship of the Earth upon which all life and development depend."*

In providing this guidance and advice the Sustainability Committee shall propose educational, research and outreach programs and directions, collect and analyze relevant data, prepare studies and make recommendations, provide information, coordination and dissemination, and shall advise the President, the Vice Presidents, academic department heads and division directors, the faculty, and the CSM community on sustainability matters.

The Sustainability Committee shall coordinate its activities with the existing councils and committees of the School, and each year by July 1 shall provide an annual written report to the President on these activities, with appropriate analyses of relevant issues and best practices for sustainability, and a prioritization of proposals that may from time to time emerge from the Committee with an indication of the level of community support for them.

12.10.2 Membership

The appointed voting members shall consist of two academic department heads/division directors, three full-time academic faculty members, one full-time administrative faculty member, one member of the classified staff, one full-time undergraduate student, and one full-time graduate student. Additionally, the Associate Provost, the Director of Facilities Management (or equivalent) and the Director of Student Life (or equivalent) shall serve as *ex officio* voting members.

12.10.3 Method of Operation

The Chairperson of the Sustainability Committee shall be the Associate Provost (or their designee). There shall be an elected Vice-Chairperson, from the Committee, who may serve renewable two-year terms, who will serve in the Chairperson's absence. The Committee shall meet at least once during the fall and spring semesters, and as needed in the summer. The Chairperson may call special meetings at any time with one week notice. Six of the voting members shall constitute a quorum. A majority vote of the quorum shall be required for any official action of the committee. Subject to the above, the meetings shall be conducted according to the latest edition of *Robert's Rules of Order*.

12.10.4 Method of Appointment

The academic department head/division director committee members shall be nominated by the Provost and appointed by the President. The academic faculty committee members shall be nominated by the Faculty Senate and appointed by the President. The administrative faculty committee member shall be nominated by the Administrative Faculty Council and appointed by the President. The classified staff committee member shall be nominated by the Association of Classified Employees and appointed by the President. The student committee members shall be nominated by the Associated Students of CSM and appointed by the President.

12.10.5 Terms of Appointment

The academic department head committee members shall serve staggered two- year terms. The academic faculty committee members shall serve staggered three-year terms. The administrative faculty committee member shall serve a three-year term. The classified staff committee member shall serve a three-year term. The student committee members shall serve a one-year term. All terms of appointment shall be based on an academic year.

Appendix B – Course Development

EGGN498 – Sustainable Engineering Design - Fall 2007

Course Description: A comprehensive introduction to concept of sustainability and sustainable design, from an engineering point of view, will be presented and discussed. This course will involve the integration of engineering and statistical analysis through a Life Cycle Assessment (LCA) tool called SimaPro. LCA is a tool for decision making that will allow quantitative consideration of the impacts of process and product design on the environment, human health and the resource base. Social implications are also of paramount importance and will be included in the discussions and project work.

.....

MNGN 498/598A - Introduction to Sustainability – Spring 2008

Course Description:

- 1 credit hour seminar class with critical discussions for undergraduate students.
 - 2 credit hour seminar-debate class for graduate students
 - 3 credit hour seminar-debate-project for graduate students
 - Students will be exposed to global/local issues associated with sustainability
 - Students will be exposed to sustainability issues on campus
 - Students will be exposed to industry needs
 - Students will be exposed to government involvement
-

LAIS 498 – Engineering & Sustainable Community Development – Spring 2008

Course Description: This course is an introduction to the relationship between engineering and sustainable community development (SCD) from historical, political, ethical, cultural, and practical perspectives. Students will study and analyze different dimensions of sustainability and the role that engineering might play in them. Also students will critically explore strengths and limitations of dominant methods in engineering problem solving and design for working in SCD. Through case-studies, students will learn to analyze and evaluate projects in SCD and develop criteria for their evaluation.

Appendix C – Climate Action Days Activities

Chill Out: Campus Solutions to Global Warming: an interactive teleconference on the topic of climate action sponsored by the National Wildlife Federation.

ESE/AQWATEC Special Seminar: Presentation by Yoram Bronichi, President of ORMAT Technologies, Inc. on “The Organic Rankine Cycle – Zero Emission Clean Power from Geothermal and Industrial Low-Grade Heat”.

Climate Action Days Symposium, April 22, 2008, 1-8PM featuring invited talks.

- Student presentation on “Sustainability in the CSM Curriculum”.
- EPICS Presentation on CSM Bikeshare Program by Bob Knecht.
- Climate Action Days Address by President Bill Scoggins.
- “Mines Leads the World in Humanitarian Engineering” by Dave Muñoz
- “Climate Change and the Next Challenges” by Caspar Amman, NCAR
- “Everything’s Cool” Movie
- Moderated panel discussion on Sustainability including:
 - Chuck Baroch, CSM and Golden Sustainability Committees
 - Nancy Carlisle, Energy Management, NREL
 - Jill Cooper, Attorney, Specialist in Environmental Law
 - Christian Shorey, Professor in Geology and Geological Engineering, CSM
 - Jacob Smith, Mayor of Golden
 - Carrie Sonneborn, Adjunct Professor, LAIS, CSM
 - Jim Spaanstra, CSM Board of Trustees
 - Elizabeth Stengl, District Environmental Manager, Allied Waste Ind.
 - Natalie Wagner, CSM Undergraduate student, Sustainability Advocate
 - Masami Nakagawa, Moderator, Professor CSM Mining Dept.

“Calculate Your Carbon Footprint” Workshop, Carrie Sonneborn, Sandy Woodson, Tina Gianquitto

Recycling at CSM: An Open Forum for Questions and Comments, Engineers for a better World in Conjunction with the CSM Environmental Health and Safety Department (EHS) hosted the forum on coming campus recycling improvements.

Earthworks Earthday Celebration

Festival featuring: EPA, EHS Recycling, Golden Solar, All Things Renewable, H₂ Hummer, Biomass Energy Foundation and more.

Live music by: Runnin’ Late, A Future Loss, Los Cheesies, and Flying Dinosaur

Movie: Soylent Green (1973) hosted by the CSM Democrats and CSM Republicans

Climate Action Days also created a campus conversation about climate change and sustainability through many articles covering the event in the Oredigger and an upcoming article in Mines Magazine.

Appendix D - Notes from the Mini-retreat (May 15, 2008)

We spent approximately one hour brainstorming various ideas about an action plan for the coming year. It became clear that at this point in time we need to learn what others were already doing both on our campus and among our peers and educate the campus about the need and ongoing activities in campus sustainability. We then began to flush out Mission and Vision Statements, and develop a list of work groups that would provide a means for involving other interested members of the campus to become engaged in the sustainability activities for the coming academic year.

DRAFT Mission Statement

The committee feels that what is presently needed most on the CSM campus is a strong educational emphasis in which all stakeholders are well informed and have access to information that they need regarding sustainability issues at CSM. As educators, administrators, and staff members, the committee spoke of creating a climate at CSM wherein sustainability is well ingrained in the daily campus activities. As a result, our mission, simply stated, is

To improve the education, understanding and awareness of campus sustainability efforts and to build a sustainability ethic among all campus stakeholders.

All of the action items listed below are related toward improving sustainability awareness and education in AY 08-09.

DRAFT Vision Statement

We believe that by embracing the concepts of sustainability and promoting the integration of these concepts in all aspects of CSM culture, we will enjoy new leadership opportunities in earth, energy, environment, and materials education and research. Our vision, therefore, is

To create a CSM that has a sustainable campus infrastructure with sustainability principles integrated throughout the coursework, research and operations.

To this end, we strongly encourage CSM's administration to support the hiring of a full-time sustainability coordinator who can work with the campus in coordinating sustainability efforts and realizing this vision across campus.

Action Items

We have created a number of work groups devoted to each action item below. Each work group is expected to complete planning over the summer for implementation during AY 08-09.

Poster Session: The goal of this session will be to increase awareness across campus regarding ongoing sustainability research, education, and facilities efforts. We want our students, faculty, staff, and administrators to be aware of all of the things CSM is already doing to achieve a more sustainable world.

Project Coordinators: Bob Siegrist, John Spear
Project Goal: Awareness of campus efforts
Groups Involved: Facilities, Faculty, Students, Student Groups
Summer deliverables: To determine
 What are the bounds (who should be represented?)
 Template
 Outlet
 What is the budget?
Completion Time: Fall 2008

Waste/Recycle Signage: Also related to our campus awareness efforts, we would like to dramatically improve signs across campus both encouraging campus community members to recycle, and educating them about how to do so. We want to increase the visibility and “ethic” of sustainability.

Project Coordinators: John Skok and Jon Meuser
Group involved: Student Sustainability Committee
Goals: To canvas campus w/ signs, educating about recycling
Summer deliverables: To determine
 Who are the stakeholders?
 What format works best?
 What is the message?
 How do we get the information out?
Completion Time: Fall 2008

Sustainability Map: The idea for this project is to create a “campus sustainability map” that will educate the campus community quickly and easily about sustainability efforts already under way. The map may also highlight areas where CSM needs to put more resources toward achieving sustainability. Jen Schneider’s Environmental Rhetoric and Media class will be working on this project in the fall semester.

Project coordinator: Jen Schneider
Groups involved: Environmental Rhetoric and Media students, Campus Sustainability Committee
Goal: Map
Summer deliverable: Assignment for completing the map
Completion Time: Fall Semester

Ecopass: Given rising gas prices and concerns about climate change, the campus sustainability committee would like to revisit adopting the Ecopass program for faculty and staff.

Project coordinators: Rebecca Flintoft, Jen Schneider, Chuck Baroch
Groups involved: Faculty, staff
Goal: To obtain Faculty/staff approval

Summer deliverable: To determine
Who pays?
How much?
What is the mechanism for approval?
How do we advertise the benefits?
How can we involve the city of Golden?

Campus Audit: It is clear to the committee that we need to collect and analyze data about the input/outputs into the campus system, as it relates to *energy and materials (including water)*, but also including *business and management, culture and community, education, land use, purchasing, research and transportation*. We have adopted the Campus Sustainability Assessment Project (CSAP) auditing measure and will be involving various student groups in completing this lengthy project. It should be noted that many other campuses hire sustainability coordinators or contract professional firms to complete audits such as this one.

Project coordinators: Carrie Sonneborn, David Muñoz, Gary Bowersock
Groups involved: EPICS II, student groups, Senior Design
Goals: Complete CSAP
Summer deliverables: To determine
Who is campus contact?
How many teams are needed?
Which area will each address?
What is the timeline for each?
What is the design component?

Sustainability Coordinator: Though the committee feels optimistic about these plans of action, it is clear that a significant commitment is required to achieve a sustainable campus. This includes but is not limited to making changes in the curriculum, reducing our carbon footprint, or in retrofitting buildings across campus. This effort is too large for a small committee to accomplish. The trend across the nation is for universities to hire sustainability coordinators. In addition to setting and achieving core sustainability policy on campus, the presence of a coordinator on campus also sends the message to all stakeholders that CSM values the concepts of sustainability.

Project coordinators: Members of the Campus Sustainability Committee
Group: Campus Sustainability Committee
Goal: Work with administration to hire a campus sustainability coordinator
Deliverables: To determine
Budget request (January 2009)
Job Description (Pay Structure)
How to pay
Cost savings
Benchmarks at other university programs

Appendix E – CSM Sustainability Committee Budget Request, FY 08

In priority order, the CSM Sustainability Committee makes the following budget requests for FY 08:

- (1) **The establishment of a full-time Sustainability Coordinator position**—an administrative faculty position—during FY 08.

Estimated annual base salary: \$60,000 to \$70,000, depending upon level of responsibility and qualifications. **With fringe benefits:** \$75,240 to \$87,780.

Proposed Start Date: 1 January 2008.

Compensation Budget Needed for FY 08: \$37,620 to \$43,890

Reporting Structure: To be determined upon ratification of a complete position description; however, initial thoughts are that the position could either report to the President or to the Associate Vice President for Academic & Faculty Affairs who chairs the campus Sustainability Committee.

- (2) **The establishment of an annual operations budget of \$15,000** to support Committee activities to include but are not limited to the following: annual membership in AASHE (\$1000); a Sustainability Lecture series; the support for student sustainability projects; conference sponsorships/attendance; website development and maintenance; brochure/newsletter production.

Total FY 08 Budget Request, (1) + (2): \$52,620 - \$58,890

This request has been prompted by the following:

- (1) on going discussions and activities conducted since 2005 among a group of interested CSM faculty, administrative faculty and graduate and undergraduate students concerning existing sustainability efforts and the need for and potential of additional operational, educational and research activities and programs which led to the establishment of the Sustainability Committee in 2006-07;
- (2) discussions within the established (pending approval of *Faculty Handbook* language) Sustainability Committee this year which recognized the scope of important sustainability activities and initiatives at CSM, a scope that requires both the dedicated time of an environmental professional with the skills to work with CSM senior administrators, the Sustainability Committee, and the broad CSM community and some modest operational funds to promote sustainability at CSM;

- (3) President Scoggins' recent request for the Sustainability Committee to conduct a thorough survey and analysis of the state of CSM's activities and operations as they relate to sustainability broadly, and more specifically as they relate to the implications of the American Association for Sustainability in Higher Education (AASHE) call for climate leadership referred to as the "Presidents Climate Commitment" should CSM join with the rapidly growing list of colleges and universities (currently approximately 100) that have already made the commitment [see **Appendix A**]; and,
- (4) the development of sustainability initiatives across all levels of higher educational institutions in Colorado, and across the U.S. and Canada to establish Offices of Sustainability and Coordinators/Directors of Sustainability to advance broadly shared global goals for sustainability.

Appended to this request are a set of descriptions of Sustainability Coordinator/Director /Manager such positions for the following 20 universities:

American University, Bowdoin College, California State-Chico, Concordia University, Cornell University, Dartmouth College, Emory University, Harvard University, MIT, Oregon State University, Princeton University, Rice University, Santa Clara University, Seattle University, Sterling College, The University of British Columbia, University of Calgary, University of Oregon, University of Toronto, and the University of Victoria). [see **Appendix B**]

Further, institutions who have invested in practices to promote sustainability have shown substantial savings. Georgetown University realized annual savings of \$45,000 by installing photovoltaic panels on its Intercultural Center; Dartmouth College conducted a windrow composting pilot study yield a savings of \$10,000 by avoiding the purchase of fertilizer and landfill tipping fees; and, the University of Illinois saves \$3,500 annually by using re-refined oil for fleet and engine maintenance. The Sustainability Committee believes that similar savings will be achieved on the operational side of CSM alone through concerted efforts under a Coordinator whose skill set is geared for sustainability and whose career is built upon success in this arena. Beyond the operational savings, the right Coordinator can assist in research development and educational activities (e.g., continuing education efforts), which, in the long run, will help CSM attract and retain students as well as faculty to an institution with such forward looking and responsible vision.

The Sustainability Committee is prepared to develop the specific details of job description for a Sustainability Coordinator that would enable CSM to take the next step in its efforts to promote sustainability in keeping with CSM's Strategic Plan and its commitment "*...to serving the people of Colorado, the nation, and the global community by promoting stewardship of the Earth upon which all life and development depend*" [Colorado School of Mines Board of Trustees, 2000].