CENTRAL NEW MEXICO COMMUNITY COLLEGE

ALBUQUERQUE, NEW MEXICO

CAMPUS AS A LIVING LAB:

PARTNERSHIPS FOR THE TRANSFORMATION OF SPACE AND LEARNING THROUGH SUSTAINABILITY

JUNE 2014

UNM CENTER for EDUCATION POLICY RESEARCH

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Summary

The National Science Foundation (NSF) funded the planning phase of the Mobilizing STEM for Sustainability initiative in 2012. Mobilizing STEM for Sustainability is aimed at integrating real-world, environmental sustainability problems into STEM education. The initiative includes five states: California, Colorado, Maine, Maryland, and New Mexico; each with distinct localized approaches and strategies for transforming post-secondary STEM education. All states involved have public higher education institutions that have signed the Presidents' Climate Commitment.

In New Mexico, Central New Mexico Community College (CNM) developed a president's climate task force to address the commitments outlined in the President's Climate Commitment. CNM is building on the work of this task force and the existing strengths of CNM's career and technical programs related to sustainability. The intent is to develop an emphasis on sustainability across a variety of disciplines and in conservation efforts being made through campus facilities. This document focuses on the internal collaboration of administration, faculty, staff, and students to advance sustainability initiatives within an institutional, political, and historical context.

Background

Environmental sustainability and conservation efforts are on the rise nationally. In 2006, college and university presidents joined forces under the American College & University Presidents' Climate Commitment to address the moral and social role of higher education to reverse global warming. Through this process, college and university presidents committed to prioritizing climate neutrality by empowering higher education institutions to engage and educate students, produce innovative solutions, and serve as a role model for the rest of the community in creating a thriving, sustainable society (www.presidentsclimatecommitment.org).

CNM Profile

Largest Post-secondary Institution in New Mexico with 28,263 Students

56.4% Women

59.3% Minority

Average student age 28

7 CNM Campus Facilities

CNM's Campus Facilities

Main Campus

Joseph M Montoya Campus

Westside Campus

Rio Rancho Campus

South Valley Campus

Advanced Technology Center

Workforce Trainng Center

A growing community interest in sustainability and the support of government officials and agencies have been the drivers of the expanding initiatives in New Mexico. Schools across New Mexico have led the way with a number of public facilities designed to obtain LEED Certification. This is particularly true for schools in the urban centers of the state. Central New Mexico Community College (CNM) is located in Albuquerque, home to growing sustainable industries.

CNM has a strong history of sustainability efforts in the areas of facilities and curriculum. In 2008, CNM signed the Presidents' Climate Commitment; with the largest post-secondary student population in the state, CNM has seven campus facilities with varying energy-efficiency and sustainable modification needs. The most recent effort is the creation of the Sustainability Curriculum Committee. The CNM faculty are passionate about sustainable education, energy, technology, and construction that will meet the changing environmental needs of New Mexico. The Committee established the Campus as a Living Lab Initiative as a means to expand sustainability efforts by intentionally linking faculty with facilities.

Vision of the CNM Campus as a Living Lab

The Sustainability Curriculum Committee had a vision to assemble a team of people committed to expanding sustainability at CNM. The team consists of faculty and staff from facilities, academic affairs, workforce training, the Office of Institutional Effectiveness, and the President's Office. The team is focused on the following objectives:

- Create a CNM community committed to sustainability;
- Support CNM's integration of sustainability into curriculum in an effort to contribute to a more sustainable environment;
- Teach sustainability with real-world applications and problem solving;
- Increase faculty and staff engagement in sustainability curriculum;
- Increase student engagement in sustainability studies;
- Track sustainability efforts in the classroom; and
- Provide faculty with opportunities to share information.

How it was Done

Prior to the establishment of the Sustainability Curriculum Committee (SCC), CNM had made progress on sustainability efforts in facilities on its seven campuses. However, integrating sustainability into the broader curriculum proved to be a challenge. CNM's sustainability efforts were primarily driven by administrators and focused on cost-savings through facility changes across the institution. Faculty involvement was limited, hence very few changes were made to the curriculum of the institution.

The funding provided by Mobilizing STEM for Sustainability was the catalyst for the newly formed SCC. With the establishment of several sustainability initiatives, facilities was prepared to engage fully in the SCC and the faculty viewed the money as a key investment by administrators to support the enhancements in the classrooms.

The SCC used funding to visit other college campuses engaged in living lab initiatives, to convene the SCC on a regular basis, and to support strategic communication efforts for the SCC. The campus visits were key activities for the SCC, providing the opportunity for the facilities director, a teacher of English technical writing, an academic administrator, GED faculty and an applied technologies faculty member to travel, network, and brainstorm. For the first time at CNM, sustainability became a bridge between silos: 1) administration, faculty, and staff and facilities; and 2) humanities education and career technical education. Additionally, partners expanded to include 2-year to 4-year transfer articulations for sustainability focused education.

Collective Impact

To accomplish the objectives of the Campus as a Living Lab initiative, the SCC used a collective impact framework to guide the work. Collective Impact (CI) is an approach widely used by organizations to create large-scale social and environmental change. To embrace the CI approach, the CLL organized around the following five conditions:

- Create the SCC and a **backbone organization** to support the collaboration among partners;
- Develop and refine a **common agenda** aligned to the shared vision for a sustainability-focused college;
- Develop a system of **continuous communication** to build trust and public will for the initiative;
- Design a plan for **shared metrics** and regular reporting of progress to the partners;
- Develop and implement **mutually reinforcing activities** that enhance campus sustainability initiatives.

Implementing Collective Impact

Backbone Organization

The Sustainability Curriculum Administrative Team functions as the backbone organization for the SCC. The Administrative team is comprised of several administrators from across the campus: Dean of Workforce and Economic Development, Executive Director of Applied Technologies, Program Coordinator of Workforce Training Center, Director of Experiential Learning, Chief Communications Officer, Executive Director for the Office of Planning Institutional Effectiveness, and Executive Director of Facilities participate in the larger work of the SCC, serve as advocates for sustainability efforts, seek financial and human resources to support the efforts, and provide administrative and coordination support.

Common Agenda

Although partners from across the institutions have varying interests and approaches to the work, all agree on the shared vision for a more sustainable campus created through the Campus as a Living Lab Initiative. The common agenda has three areas of focus:

- Integration of sustainability concepts and theories into the curriculum across disciplines, especially those in the STEM fields;
- Support of faculty, facilities staff, and student partnerships that use the campus as a forum for the exploration of sustainability concepts and theories; and
- Implementation of active learning projects that contribute to both student learning and a sustainable campus.

Shared Metrics

Campus as a Living Lab is in the process of developing shared metrics, and the SCC has developed an extensive list of performance targets for activities across the seven campuses. Although the performance targets are centered on what activities — and the outputs of the activities — the partners will engage in as part of the work, the group is making progress in the development of impact measures of Campus a Living Lab. For example: Campus facilities partnered with faculty to expand the campus Request for Proposals (RFP) process. The RFP's are now required to include student learning outcomes and classroom collaboration ideas to be successful.

Continuous Communication

The SCC provides a structure for ongoing communication among the partners. The group shares documents through an institutional SharePoint site. The team meets regularly, has a high attendance rate, and is growing in size. Strategically selecting a cross-section of people and groups to travel together has built relationships that no longer require facilitation. The establishment of trust and friendships has made way for organic, ongoing communication to occur.

Mutually Reinforcing Activities

Mutually reinforcing activities have been central to the collective work of the initiative. The partners in the SCC are action oriented and motivated by their passion for sustainability. Curricular and co-curricular sustainability activities aimed at transforming the physical campus and learning environment quickly became vehicles for establishing trust across the silos, refining a common agenda, and enhancing the support for sustainability efforts. The activities focus in the following areas:

- Further collaboration between faculty and facilities;
- Tracking and documenting sustainability projects and their campus impact;
- Developing administrative processes aimed at further integrating sustainability into the curriculum;
- Establishing interdisciplinary course options that actively engage students in addressing sustainability problems in general education and trades programs;
- Developing a sustainability concentration that transfers to 4-year institutions; and
- Establishing visibility for sustainability efforts through high-profile campus activities and marketing.

COMMITMENT TO SUSTAINABILITY

The SCC successfully collaborated to identify and create new active learning projects to engage CNM students in Campus as a Living Lab. Projects like: Mount Trashmore, Photovoltaic Project, RecycleMania, RFP Process, Adopt-A-Bin, and various Earth Day activities. These projects aimed to:

- Provide sustainability service learning opportunities to students;
- Increase faculty and staff participation in integrating sustainability into course curriculum;
- Increase the number of courses that included sustainability learning objectives; and
- Identify opportunities for student involvement in extracurricular sustainability activities.

MOUNT TRASHMORE

This project raised awareness among CNM students and aimed to change behavior. Participants collected a day's worth of trash from the CNM Main Campus and piled it high in a parking lot to create "Mount Trashmore." Here participants sorted through the trash, separating recyclables from waste while wearing protective clothing, to demonstrate the amount of recyclables that end up in landfills instead of recycling plants. This exercise actively engaged students in service learning.

PHOTOVOLTAIC PROJECT

CNM installed a 60kW Solar Photovoltaic system at four of CNM's campuses, aiming to generate clean energy and demonstrate CNM's commitment to sustainability. This project served as an inspirational tool for the community and included working student groups to publicize the systems. This project allowed students to learn about technology, economics, and sustainability through personal experience. Students applied social, technical, business, and math skills and influenced CNM's implementation of solar energy. Students analyzed the cost effectiveness of the solar project over the projected life cycle of the system, and learned about career options in the STEM field.

Data provided by CNM.

See prezi.com/f24uxexbglsq/cnm-journey-to-sustainability.

Commitment to Sustainability

CNM reviewed its use of campus space, and identified facilities that were under– and over-utilized. This evaluation helped the Facilities Department ensure spaces at CNM were being used efficiently. This assessment allowed facilities staff to determine what spaces should be capitalized on due to their efficiency, what functions should be moved to a different location, and what spaces should be renovated to increase efficiency. This analysis will assist the college in avoiding new construction by using current buildings as effectively as possible, with the goal of significantly reducing CNM's carbon footprint.

Request For Proposals Process

The modification of the campus Request for Proposals (RFP) process engaged students by bringing renewable materials and sustainability into all possible aspects of the curriculum. Students practiced sustainable approaches in business, science, English, math, and graphic art.

Recycle Mania Tournament

In Spring 2014, CNM offered the Recycle Mania Tournament as a service learning opportunity. Recycle Mania is a friendly competition and benchmarking tool for campus recycling programs to promote waste reduction activities in their campus communities over an 8-week period (http://recyclemaniacs.org). In order to ensure their success, CNM students:

a) were provided with sufficient background on sustainability relevant to their course objective;

b) were required to provide a minimum of 15 service hours to obtain hands-on experience applicable to their course; and

c) were required to reflect on their experience in a way that they could apply their knowledge and skills in a professional setting.

See http://recyclemaniacs.org.

- Adopt A Bin: Built excitement around Recycle Mania by engaging student service learning classrooms, student organizations, and CNM Departments to adopt a recycling bin and compete in personalizing and decorating these containers.
- Earth Day Events: Earth Skills Series, Book Swap, Clothes Swap, Crafts Made from Waste Competition, Clean Up the Campus, E-Waste Drop Off, Sustainability Film Series, Ride Bike/Bus to Campus Day, Plant Trees/Wear Green to School Day
- Classroom Events: Learning from a PNM Bill

ACCOMPLISHMENTS

Campus as a Living Lab has been in place for less than a year but the accomplishments have been remarkable.

- Successful collaboration between facilities staff and faculty in the creation and execution of Campus as a Living Lab;
- SCC facilitators traveled to observe the California State University Campus as a Living Lab: Connecting Facilities and Curriculum for Sustainability Symposia;
- Established the Sustainability Curriculum Committee (SCC) with 20 regularly attending members, which include staff and administrators from Facilities, Academic Affairs, the Office of Planning and Institutional Effectiveness, and the Workforce Training Center, as well as faculty representing every school in the college;
- Held a video conference with the Campus as a Living Lab California team to discuss the RFP system;
- SCC facilitators attended SEED workshop at St. Claire County Community College in Michigan;
- SEED Campus as a Living Lab Workshop: Using the Built Environment to Revitalize College Education with great attendance;
- Partnered with the UNM Center for Education Policy Research (CEPR) to develop a case study that documents the ongoing progress and analyzes the local CNM and statewide level policy impacts;
- Informed CNM faculty/staff about ways of integrating sustainability into the curriculum;
- Identified funds to support course release for a selected faculty member to partner with facilities staff to develop sustainability and campus as a living lab innovations;
- Supported a sustainability concentration offered by the School of Communications, Humanities, and Social Sciences that can be transferred to a sustainability minor at the University of New Mexico;
- Created team SharePoint site that provides a central point of communication for all things Sustainable;
- The SCC toured and learned about hands-on classroom activities at WTC's Sustainable Technology Lab;
- Coordinated with Applied Technologies on campus projects;
- Created a brand;
- Consultants from the Sustainability Tracking, Assessment and Rating System (STARS) project visited the campus, and met with facilities staff and faculty to measure CNM's sustainability benchmarks' in order to track future progress; achieved STARS Bronze status;
- Presented Campus as a Living Lab with California and Mobilizing STEM Team at AAAS 2014 Conference in Chicago; and
- SCC members invited to present at local and national conferences; include the Smart Sustain 2014 Conference, the CNM Cooperative for Teaching and Learning Conference, and the CNM Assistance Centers for Education Staff Conference. Additional spring presentations to College Curriculum Committee and the Academic Affairs Council.

FUTURE PLANS

Campus as a Living Lab is a large-scale, long-term initiative that is changing the CNM physical and learning environment, and there is much work ahead. The group plans to ramp up service learning opportunities and increase student engagement.

- Continue working to promote Campus as a Living Lab by presenting at national conferences and presenting to various colleagues across the institution.
- Continue to provide service learning opportunities to students.
- Develop a college-wide process for supporting faculty in integrating sustainability into the curriculum.
- Document a process model for Campus as a Living Lab, using PV project as a pilot.
- Develop a CNM Governing Board policy that addresses sustainability.
- Host a state-wide sustainability conference and invite the two-year colleges.
- Increase the number of programs that include sustainability learning objectives.
- Add a required field to CurricUNET for percentage of sustainability content with drop-down key words.
- Increase student engagement.

Elements for Success

CNM's commitment to sustainability efforts existed prior to the SCC and Campus as a Living Lab. The college's welcoming climate was the foundation for the SCC to institute several key changes that made Campus as a Living Lab come to life.

Planning and Administration—The financial support from the five-state Mobilizing STEM for Sustainability grant was the catalyst to create the SCC and Campus as a Living Lab. Although the grant funding was minimal, the resources sent a message to the campus that this work has administrative support.

Leadership in Facilities—The campus facilities department had several pre-existing campus sustainability initiatives. The facilities leadership had the will to contribute to a larger vision of a living lab and integration of sustainability across the curriculum. A sustainability consultant plays the role of a liaison between the facilities changes and the classroom. The consultant plans and tracks sustainability efforts, as well as works with faculty to integrate efforts into the classroom.

Faculty Commitment—Prior to this initiative, there were several faculty members integrating sustainability into their classes across various disciplines. It was not difficult to get many of these faculty members to invest time and energy into this project. A faculty member from the English department will serve as a Sustainability Liaison in the facilities department. This position will be central to strengthening the bridge between facilities and faculty.

Campus Incentives—Higher education accrediting and certifying bodies that incentivize sustainability in the curriculum also played an important role in creating Campus as a Living Lab. Examples include: Composting requirements in the accreditation of the Culinary Arts, the Presidents' Climate Commitment, Sustainability Tracking and Rating System (STARS), and Leadership in Energy and Environmental Design (LEED) certification.

Special Thanks To:

Diane Burke, Dean Workforce and Economic Development

Lis Turkheimer, Executive Director, Academic Affairs

Lisa Aldon, Program Coordinator

Luis Campos, Executive Director Physical Plant

M.J. Zimmerman, Humanities Instructor

Richard Polk, Applied Technologies Instructor

Dai Nguyen, Paralegal Studies Instructor

Steve House, Triple H Solar Sustainability Consultant

The CNM Sustainability Curriculum Committee

Acknowledgements

Material documents from the SCC SharePoint site, meeting observations and interviews were used to create this document.

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