



A Draft Summary of the Denver Listening Conference

“Meeting the Challenge of Metro Denver’s Future: Preparing a diverse next generation of weather and climate professionals”

2 March, 2009: Tivoli Center, Auraria Campus, Denver

Sponsors and Partners



University of Colorado Denver
School of Public Affairs



Conference Mission

To increase Latino involvement in weather and climate science in order to enhance the diversity of the STEM workforce, broaden participation in the green economy, and ensure equity in adapting to and mitigating climate change.

Conference Goals & Objectives

- Better understand unique aspects of working with and in Latino Communities
- Identify the current strengths and the future opportunities
- Identify key/priority opportunities and partners needed
- Develop strategies and action plans to develop the identified opportunities
- Outline next steps

Conference Format

The meeting opened with an Executive Breakfast to build high-level support for the institutional collaborations that underscore successful approaches. The rest of the day was broken into two working sessions in which small groups identified opportunities and outlined strategies to meet the long term mission.

Key Points from Discussions

- The K-12 enterprise is an essential partner in the long-term goal of increasing Latino participation in Science, Technology, Engineering and Mathematics as well as in weather and climate.
- Especially in K-12, the focus should be on STEM literacy rather than a single discipline.
- Families are important, and efforts to engage Latino students should include outreach to families.
- Students and their families want information about careers, including salaries and necessary preparation. Career decision making begins as early as middle school.
- Internships are great ways to build student awareness of and interest in STEM and weather and climate careers.
- Efforts need to be coordinated and sustained over time. No one program, approach, or intervention can work for every student; nor can a single intervention result in long-lasting change for single students.
- Research laboratories, including NCAR and NOAA, need to make a serious commitment to engaging Latino students that moves beyond the occasional outreach to classrooms
- Education should be viewed comprehensively, with a “Pre-K to 20” view.
- Career training for the green economy should be accompanied by industry and government investments that can grow these fields.
- Instead of participating in debates about climate change, we should invest in good ideas that make sense for multiple reasons.
- Scientists have an opportunity to shape public sentiment about the nature of science and the role of science in contributing to public decisions.
- Students may justifiably prioritize careers that provide a proven pathway to a better life, as opposed to new and risky careers in the green economy.

Working Groups Overviews

1. **Next-generation Workforce Curriculum:** Developing a culturally-accepted, multi-disciplinary, project-based, environmental curriculum that can be effectively integrated into diverse classrooms, and will help prepare the next generation workforce with weather and climate relevant skills to supplement their other expertise.
2. **UCAR @ 50:** Adding a bilingual and multi-agency component to UCAR’s 50th anniversary open house.
3. **Colorado ADSC/Community College:** Partnering with the Colorado Academy for the Development of STEM-related Careers (Colorado ADSC) which seeks to position the state as a leader in scientific and technology education and to ensure that Colorado’s students – from kindergarten to the graduate level – are informed and connected to

STEM careers. While the initial focus of ADSC is on aerospace education, we would explore adding a weather, climate and sustainability piece.

4. **Targeted Messengers and Messages:** A long-term campaign of targeted, bilingual messages about careers in STEM, complete with Latino role-models, career planning information, and activities to engage the whole family.
5. **High School Internships:** A multi-agency internship program that would allow middle and high-school students to do meaningful work in area laboratories and explore STEM careers through a hands-on approach.

Next Generation Workforce Curriculum

Participants: Stephanie Rivale, CUB-BOLD; Laura Moin, CU-Boulder; Jack Fellows, UCAR; Larry Johnson, Metro State; Rusty Low, IGES

Current Situation:

- Curriculum doesn't exist
- Classroom integration challenge very real (teach to tests, time, etc.)

Target/Goal:

- A culturally accepted, multi-disciplinary, project-based, community-based environmental curriculum that is effectively integrated into diverse classrooms

Strategies:

- Must bring teacher and content providers together
 - College: UCAR community conversation (Res and Edu Depts.)
 - K-12: District/State community conversation and needed professional development
- Pilot: Latino teachers and scientists (multi-disciplinary) develop and pilot curriculum with:
 - Parent advisory group
 - A strong argument about why this is an improvement

Information, Partners, Resources:

- E&O groups at research organizations
- Informal educational groups

UCAR @ 50

Participants: Andy Pattison, UCD; Eduardo Araujo, CU/NOAA; Christina Howe, Bluff Lake; Tracy V-----, Front Range Earth Force; Matt Kaspari, Kaspo; Lauren Coyne, Namaste Solar; Jean Paul Glaser, Launching Space Program; Wendy Hanophy, Retired CDOW; Ann Thorne, NOAA; Brian Heckman, MCSD; Vidal Salazar, NCAR; Susan Beckett, Bluff Lake Natur Center; James Mejía, Denver Preschool Program; Rick Anthes, UCAR; Tony Tafoya, NOAA; Rusty Low, Institute for Global Environmental Strategies; Mario Carerra, Univision; Stephanie Dixon, Goodwill; Shane Wright, Groundwork Denver

Current Situation:

- We are not working with Latino/a families
- Bad state of education and employment of Latino/a population
- Low participation of sci/tech community in K-12 education
- Bad state of science education

Target/Goal:

- Reduce drop out rates (family focus)
- Better communication (media)
- Increase family involvement
- Mentoring and internship
- First time families at UCAR @ 50
- Increase volunteers in MESA

Strategies:

- Train community families to want to improve their own communities (service projects)
- Train teachers
- Use the UCAR @ 50 event to connect
- Boy scouts
- Positive relationships with students and families through mentorships through the CO labs, colleges and universities
- Create and share a list of organizations that can provide mentors and people who can volunteer for MESA programs, etc.
- Recognize and engage the correct leaders in your community (not Latino/a only, but a Latino/a especially)
- Recognition and training around your own community

Information, Partners, Resources:

- Earth Force

- Bluff Lake
- UCAR/NCAR
- CU professors and researchers
- Groups of Latino/a professionals
- Radio and TV consultants that can help shape the message
- Translators

Colorado ADSC/Community College

Participants: Rich Wagner, Metro State; Troy Wanek, Redrocks Community College; Gudryn Doherty, Community College Denver; Myron Anderson, Metro State; Janet Lopez, UC Denver; Christine Johnson, UC Denver

Current Situation:

- Colorado Alliance for the Development of STEM-related Careers
- Partners: Metro State, CCD, School of Mines, Cherry Creek Schools, (Industry)
- Limited funding

Target/Goal:

- Expansion of Program
- Industry/research lab internships/cooperative education
- Survey of careers (at high school)
- Expand to community colleges in southern Colorado

Strategies:

- Pilot project (grant or industry) of survey of careers
- Recruit more industries/labs to participate
- Grant opportunities

Information, Partners, Resources:

- Resources: Grant or industry funds
 - Development and implementation
- Information: Draft proposal, curriculum development, incorporate into degree or certificate programs
- Partners: Industry, Research labs, Government agencies, Community colleges in southern Colorado

Targeted Messages and Messengers

Participants: Lydia Hooper, UC Denver; Matt Herbert, Denver Zoo; Jonathan Daugherty, Bluff Lake Nature Center; Alejandra Spray, AMI Mechanical/HCC; Johana Mendoza, Pinnacol Assurance; Melissa Burt, Colorado State University/CMMAP; Ronald Morales, SVS; Mateo A de Valenzuela, Organization for Environmental Education and Protection; Christopher Pacheco, CU Boulder; Raj Pandya, UCAR; Brian Heckman, MSCD; Lindsey Sexton, Our Task; Stephanie Rivale, CU Boulder; Jame Mejín, Denver Preschool Program

Current Situation:

- Not a specific, coherent message to Latino families
- Green
- Building the future
- Practiced use/demonstrations
- Lifelong learning
- Economic stability
- Role models
- Opportunity and diversity in STEM
- “I do _____ and I’m a scientist,” (the say how someone can get involved, link partners)

Target/Goal:

- Create message → First message to get them interested/excited
- How do we get it out? Partnerships/organizations/channels
 - Denver Chamber of Commerce
 - Hispanic Chamber of Science
 - Family science night
 - Involve teachers and schools, but distribute outside of school
- How do we know if the message succeeds?
- Call to action in our newsletter for each month

Strategies:

- Tangible examples of practical/everyday STEM opportunities
- Fun facts/glamour/sexy/media
- “I do _____ and I’m a scientist”
 - Work with professional athletes
 - Write for CSI
 - Michael Jordan wears my shoes
- Go where the family as a unit goes to pass out fliers – Azteca Supermarket, etc.
- Science newsletter sent to home – bilingual
- Newsletter template with different organizations able to take it on each month and financial support provided by area businesses

- Featured scientist/engineer in every issue
- Salaries of jobs in STEM
- Connecting to sustainability, green, deeper meaning
- Internships

Information, Partners, Resources:

- Funding
- Volunteers
- Windows to the Universe
- Sponsors like market, radio shows, flea market, churches, TV
- Mailers
- Schools
- Media public service
- Grass roots efforts
- Interns
- Advertising students from Metro State (majoring in marketing)
- CSU science week
- Information about university programs that are related and scholarships

High School Internships

This idea wasn't taken up as a specific working group, but was discussed in many contexts throughout the day. The advantages of internships include opportunities for hands-on work, exposure to careers and role-models, career advice and mentoring, and opportunities to teach job-relevant skills (including time-management, computer skills, etc). There was support for exploring organizing this as a Colorado labs program, with UCAR, NOAA and CU participating from Boulder, as well as Namaste Solar and other regional industries.

NCAR will pilot a small internship program this summer, welcoming around eight interns to work at NCAR and neighboring labs. The four week program will occur in August, and include contact with scientists and professors to learn about careers and career options, skill training, research experience, and an opportunity to communicate about research.