



Recruitment of Diverse Students: Goals, Strategies, and Plans



Education and Diversity Retreat
August 2011



CMMAP Diversity Goal:

Increase the number of diverse students pursuing graduate degrees in atmospheric science

Strategy:

Recruit, retain, and mentor students from underrepresented groups.

What are we doing?

Targeted recruitment at minority serving institutions

Network with programs with like interests and goals

Focus on multiple academic disciplines

Attend national conferences meetings

Where do we come from?



Summer Internship Program

Watch us grow!

Find out more about us here:
www.cmmmap.org/scienceEd/internships.html



2007

CMMAP welcomed three interns in our first year.



One of our first summer interns, Beth Beckel explored cloud and precipitation chemistry. She learned the basics of gas-phase atmospheric chemical sampling techniques and spent most of the summer learning about the mist chamber.

Parker Kraus investigated land-atmosphere interactions in the West African country of Mali, looking at evaporation and photosynthesis rates.



Claudette Ojo worked on the Tropical Ozone Sonde Dataset for Satellite Validation Processing and Modeling looking at spatial and temporal relationships between ozone and temperature as a function of height.

2008

CMMAP enjoyed six interns in 2008.

Claudette Ojo, a business major, interviewed companies for the organization Climate Wise to learn the progress they were making in reducing greenhouse gas emissions.



Alice Duvivier and Jette Petersen worked together on a numerical approximation for mathematical operators used in climate modeling.



Tyler Ruggles, interested in environmental science and policy, helped a city become part of the Mayors for Climate Change organization.



Zoe Keve has a strong interest in helping people and improving our world. She worked at the National Conference of State Legislators constructing a booklet on biofuels.



David Sullivan studied carbon pricing and taxation for the National Conference of State Legislators finding advantages and disadvantages of different methods and creating a booklet.

2009

Ten interns spent a summer at CMMAP in 2009.

Laura Witte worked with the Ft Collins Sustainability Group estimating how much CO₂ would be conserved by implementation of policies.



Lance Vanden Boogart worked with the land-surface modeling group comparing a chemistry transport model with observed CO₂ concentrations in the midwest.



Liz Huddle spent the summer determining parameters for a mist chamber to try to increase its efficiency.



Having a strong passion for disaster research, Heather Morgan tried to find a connection between the MJO and Atlantic hurricanes.



Terreka Hart focused her research on how concentric eyewalls and mesovortices influence the intensity of hurricanes in the Atlantic basin.



JoBeth Minniear came to CMMAP to research how water vapor, temperature, and vertical velocity relate to one another in a very high resolution simulation of a tropical convection system.



Carla Tabor performed research with a spin tank to compare mathematical models of a balanced vortex and what she observed in ice-generated vortices in the spin tank.



Samantha McGraw conducted interviews and researched New Jersey city climate action plans.



Katherine Heal learned to use an aerosol mass spectrometer to analyze aerosol emissions from types of biodiesel and later, perform sampling in Rocky Mountain Nat'l Park.

2010

Watch us grow, indeed! We hosted 12 interns this year!



Idamis Del Valle came from Puerto Rico to study the effects of enhanced moisture triggers on precipitation and winds.



Nick Geyer used the Vector Vorticity Model to simulate the Tropical Western Pacific-ICE case.



Erin Kashawic compared data assimilation schemes used by operational forecast centers.



Kyle Hemes researched the spatiotemporal influence of vegetation on global surface-atmosphere exchange.



Jackie Gushue looked at electrical rate structures and their impact on demand response decision making with a company in Fort Collins.



Stormy Stevens looked at the impact of tropical cyclone rainfall on drought in Alabama.



Tina Laboy spent her summer researching the propagation of the Madden-Julian Oscillation.



Marie-Christine Razaire examined the responses of the ocean carbon cycle to climate change.

Daniel Rothenberg got into the nuts and bolts of a climate model dynamical core.



Ariana Marrero, from Puerto Rico, studied the variability of the seasonal cycle in the Tropical Eastern Pacific and Caribbean.



Christina McCluskey researched nitrogen samples collected from Rocky Mountain National Park.

5 summers - 41 interns



research | mentoring | community
SOARS



In 2006, Zizi Searles came to us from San Francisco State University. She worked with CMMAP Faculty, Dr. A. Scott Denning studying emission CO2 scenarios.



Alex Gonzalez worked with CMMAP Faculty Dr. Wayne Schubert studying tropical dynamics. His research was entitled an “Analytical study of tropical flows using an improvement of the longwave model. He has participated in the program for 3 years and is now a M.S. student under Wayne Schubert at Colorado State University.



Kimberley Trent worked with Dr. Warren Washington at NCAR during 2006 and 2007. Her research focused on hurricane modeling looking at different climate change scenarios.

During Summer 2010, Diamilet Perez-Betancourt worked with science mentors Jonathan Vigh (an NCAR postdoctoral fellow, and CSU and SOARS alum) and Shuyi Chen (University of Miami) she studied Environmental factors influencing hurricane eye formation in the North Atlantic basin.



Rosimar Rios-Berrias came to us from the University of Puerto Rico at Mayaguez.



In 2008, Nicole Ngo came to us from Irvine, CA. She worked with science mentors Chin-Hoh Moeng and Jeff Weil (NCAR) on “The effects of convective clouds on vertical scalar transport using a numerically simulated flow field”



During Summer 2010, Maxino Menchaca worked with Dr. Bill Skamarock on Building a New Weather Model: Testing a Nonhydrostatic Dynamical Core on Unstructured Variable Resolution Hexagonal C-Grids. Maximo has a peer reviewed publication based on this work in Monthly Weather Review.



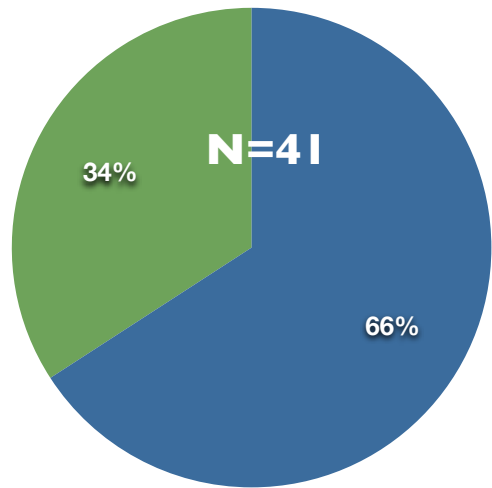
In 2008, Karen Diaz’ research focused on the “Effects of transport and meteorology on the particles measured at the Storm Peak Laboratory (SPL)” under the guidance of CMMAP Faculty Dr. Sonia Kreidenweis and Science Mentor Christine Wiedinmyer at NCAR.



Vanessa Vincente came to us from Valparaiso University. Her Summer 2011 research focused on analyzing hurricane data . Vanessa is now a M.S. student under Dr. Russ Schumacher at Colorado State University.

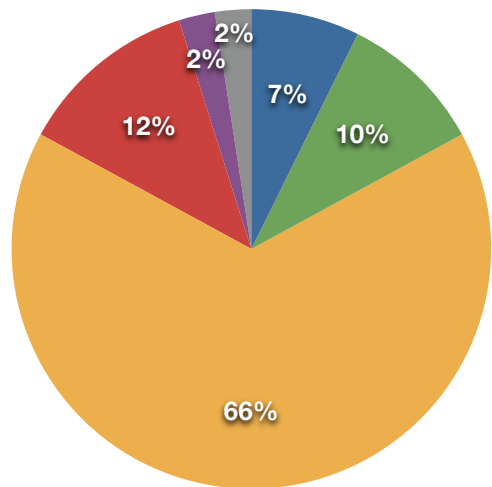
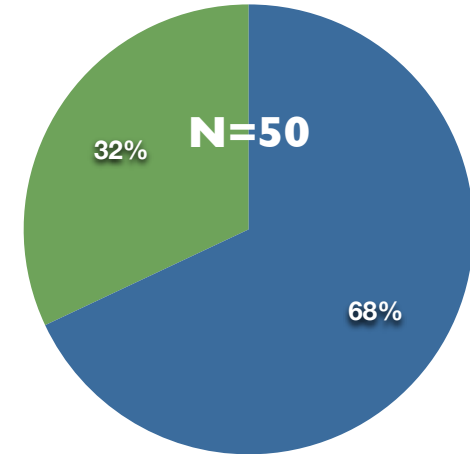
6 summers - 9 proteges

CMMAP Internship at CSU



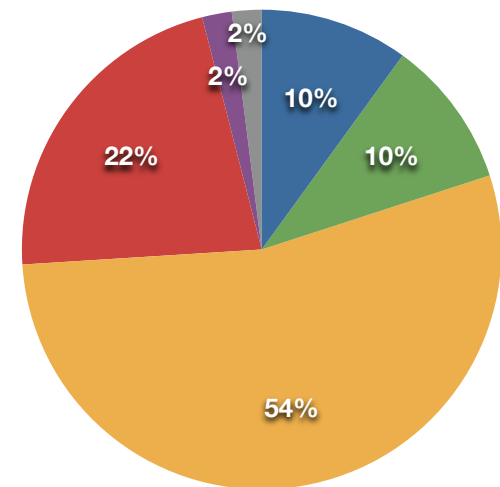
- Female
- Male

CMMAP Interns

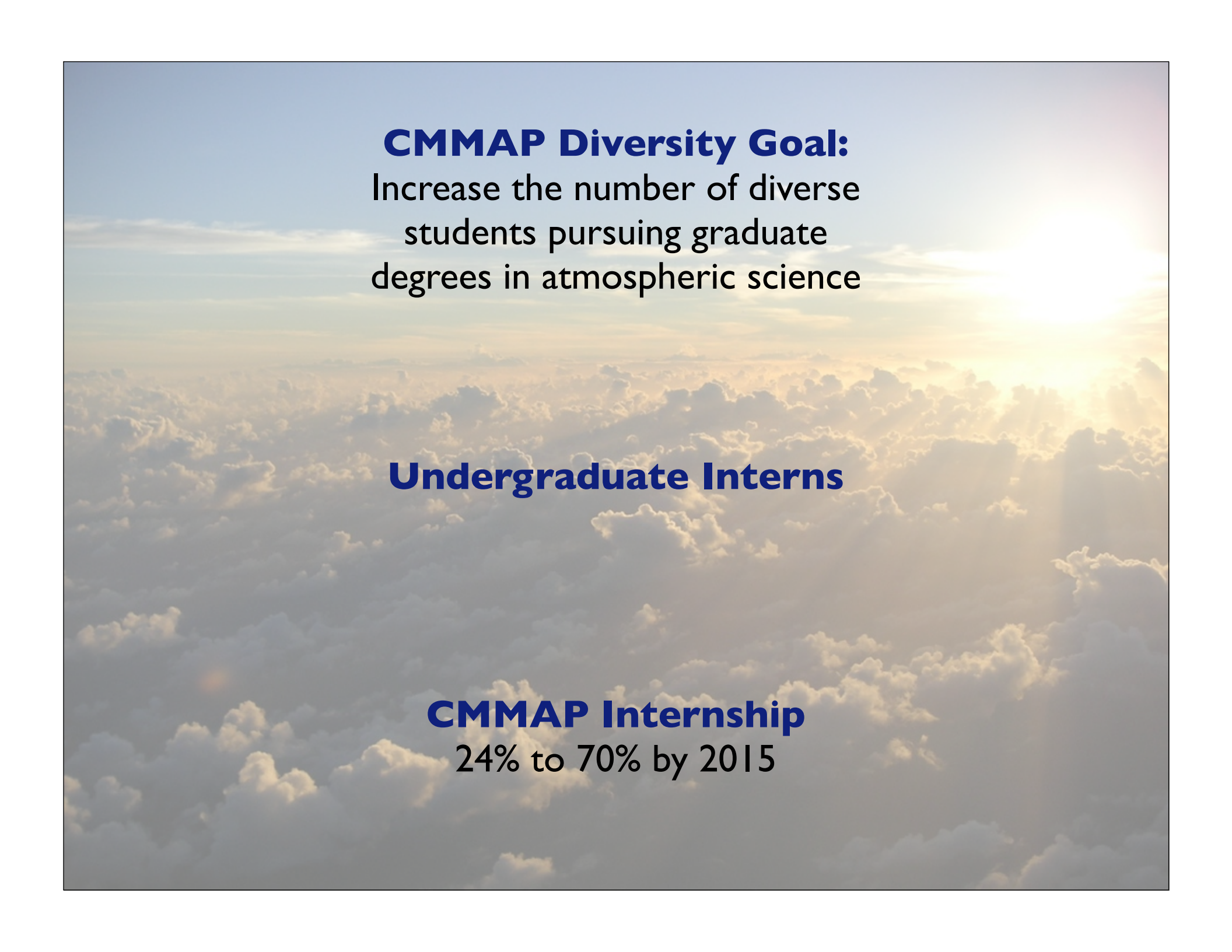


- African American
- Asian
- Caucasian
- Latino
- Native American
- Other

24% diverse



36% diverse



CMMAP Diversity Goal:
Increase the number of diverse
students pursuing graduate
degrees in atmospheric science

Undergraduate Interns

CMMAP Internship
24% to 70% by 2015

To meet our goal...

**Targeted
recruitment at
Minority Serving
Institutions**

**Target a small number
of geographic areas**

Florida A&M University
Howard University
Texas Southern University

NM Highlands University
UMET
UPR at Mayaguez
UPR at Rio Piedras
UT Pan American

Navaho Technical College
Haskell Indian Nations University

NOVA Community College
Pima Community College

Arizona
California
Colorado
New Mexico
Texas

To meet our goal...

Identify and enlist participation of alumni of various summer programs

CMMAP Alumni Network
Institute for Broadening Participation
SMART Alumni Network
SOARS Alumni Network

Network with programs with like interests, goals, and successful histories

Carnegie Mellon University
CUNY LSAMP
CMMAP Partner Institutions
CSU LSAMP
CSU SACNAS
CU SMART
CU Bold Center
EnvironMentors
NSF CREST
NSF LSAMP
NSF HBCU-UP
NSF TCUP
UCAR SOARS

To meet our goal...

**Meet with NSF
representatives to
enlist support**

NSF Office of the Director
NSF Education and Human Resources
NSF Geosciences Directorate

**Attend
National
Conferences**

2011 AGU
2011 UMET
2012 AMS
2012 NSF Joint Annual Meeting