Building Communities of Scholars in the STEM Disciplines

Peter K. Dorhout
Kansas State University
Framing the Challenges

• NRC Study on PhD showed CSU student completion was at/below average

• Underrepresented Minority Students (URM) were struggling in grad school at CSU

• CSU leadership was committed to growing graduate programs, PhDs
Understanding where we are...

• What is our baseline of activity?
• What is/are the biggest challenge(s)?
• Where is/are the problem(s)?
• Is the challenge recruiting or retention?
PhD Student Trends 1996-2003

- % Advancing to Candidacy = 60%
- % Leaving w/o Degree = 28%
- % Leaving w/ Masters = 12%
- % Completing PhD (7 yrs) = 76%
- % PhD (in 7 yrs) from Entry = 47%
- % PhD (in 10 yrs) from Entry = 57%

Student Numbers

- Entered
- Advanced (in 3 yrs)
- Left CSU
- Left w/ Masters
PhD Trends 1996-2003 - URM Students

- % Advancing to Candidacy: 40%
- % Leaving w/o Degree: 51%
- % Leaving w/ Masters: 12%
- % Completing PhD (7 yrs): 55%
- % PhD (in 7 yrs) from Entry: 27%
Our starting point...

• Small numbers of incoming PhD students.
  – Getting the word out about CSU
• Leaky pipeline prior to candidacy.
  – Are these advising or student life issues?
• Students who stay still finish more slowly.
  – Professional development opportunity
• CSU wants to grow its graduate students... but how, if there’s a leak?
Underrepresented Minority Graduate Students

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Student Population</th>
<th>URM PhD</th>
<th>URM Masters</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>187</td>
<td>65</td>
<td>122</td>
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<td>2000</td>
<td>212</td>
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<td>2001</td>
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<td>67</td>
<td>166</td>
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<tr>
<td>2003</td>
<td>207</td>
<td>75</td>
<td>132</td>
</tr>
</tbody>
</table>

Academic Year
Graduate Student Population by Degree

3452 Total

- Master's Students
- PhD Students

Year

Stagnation in Students

• Our baselines showed that we needed to change how we recruited and retained students of color
• Connecting students and creating communities was our goal
• Coordinate our student diversity programs – these were unfocused, silo-ed projects
Welcome to the Graduate Center for Diversity & Access!

The Graduate Center for Diversity and Access is committed to providing an environment that supports all forms of diversity. We invite you to explore our website and to contact us with your questions (Debbie Sheaffer, 970-491-8818).

We are pleased to provide:

- recruitment and retention activities and programs with an emphasis on graduate students from diverse populations.
- activities and programs that prepare diverse students as strong candidates for graduate school.
- consultative services to departments and colleges regarding graduate recruitment and retention activities, diversity data and graduate school diversity initiatives.
Connecting Students Across Campus

Links to Other Diversity Resources on the CSU campus

- Asian/Pacific American Cultural Center
- Black/African American Cultural Center
- CSU Student Diversity/International Organizations
- El Centro Student Services
- Gay, Lesbian, Bisexual & Transgender Resource Center
- Graduate Students of Color
- Native American Cultural Center
- Office of Equal Opportunity and Diversity Student Involvement
- Resources for Disabled Students
- Society for Advancement of Chicanos and Native Americans in Science (SACNAS)

P. Dorhout at NDEW 2013
CSU Student Programs - STEM

• McNair
  – Focused on STEM students in Colorado, pipelines to UG students
  – Large first-generation student population at CSU
• LS-AMP
  – 15 years in Colorado, 15 partner institutions, 4 Tribal partners
  – 35 Bridges PhD students
• AGEP
  – 10+ years of programs at CSU, CU-Boulder, CU-Denver
  – 61 faculty mentors, 20% underrepresented
• Needed to build a community of scholars
  – Focus on student life and professional development
  – Engage graduate students, undergraduates in mentoring - SACNAS
SACNAS

“Advancing Hispanics/Chicanos & Native Americans in Science”

• Founded in 1973 by a group of minority scientists
  – 501(c)3 nonprofit corporation under the name Society for Advancement of Chicanos and Native Americans in Science

• SACNAS Mission
  – Fosters the success of Hispanic/Chicano and Native American scientists—from college students to professionals—to attain advanced degrees, careers, and positions of leadership in science.
SACNAS CSU Chapter

- **Founded in the College of Natural Sciences**
  - Applied for Chapter status, Fall, 2005
  - Advisor, Arlene Nededog, Director of Undergraduate Retention Programs

- **Faculty and Graduate Student Mentors**
  - 12 Faculty & Advisory Board Members
    - Colleges of Agriculture, Engineering, Natural Sciences, Veterinary Medicine and Biomedical Sciences, Graduate School
    - Mentoring the mentors program
  - 6 graduate student SACNAS Mentors

- **Chapter Programs**
  - Networking Workshops
  - Volunteering Fundraising
  - Professional Development Workshops

P. Dorhout at NDEW 2013  www.oxide.gatech.edu
Chapter Outreach

Colorado Science & Engineering Fair

Triunfo/Triumph Tutoring Program

CSU Student Involvement Fair

CSU-Connect

Little Shop of Physics

Stemapolooza

P. Dorhout at NDEW 2013

www.oxide.gatech.edu
SACNAS National Chapter Recognition

- **2006-2007**
  - Outstanding Leadership as a First Year Chapter

- **2007-2008**
  - Outstanding Faculty & University Support of a SACNAS Chapter

- **2008-2009**
  - Outstanding Leadership & Governance

- **2009-2010**
  - National Chapter of the Year (Medium)

- **2010-2011**
  - Role Model of the Year – Regional leadership

- **2011-2012**
  - Role Model of the Year – Native American Outreach
Orientation for New Graduate Teaching Assistants

In recognition of the important contributions our Graduate Teaching Assistants make to instructional excellence at Colorado State University, the Provost Office, the Graduate School, and the Institute for Learning and Teaching are pleased to sponsor and host an annual Orientation for incoming GTAs.

The Goal

In the ongoing effort to enhance the effectiveness of undergraduate teaching and learning at Colorado State University, the goal of the annual GTA Orientation is to equip every incoming GTA with basic institutional knowledge about CSU, review current learning and teaching Best Practices, and introduce a wide variety of resources that will help further their career as a CSU graduate teaching assistant.

On the Agenda

Experienced teaching assistants, faculty, and staff will address key issues related to
Student Enrollment at CSU

% URM Graduate Student

% of Total Student Population

Academic Year


Total URM 7.3%

Total URM 12%

% URM Masters

% URM PhD
Total student growth – 11%
URM student growth – 68%
More than half growth!
40% growth of PhD students
Underrepresented Minority Graduate Students

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<td>2010-2011</td>
<td>152-166</td>
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- **URM PhD**
- **URM Masters**
URM Masters by Year

% Masters Awarded

% Total URM

Year

00-01 01-02 02-03 03-04 04-05 05-06 06-07 07-08 08-09 09-10 10-11 11-12

Asian  Hispanic  Black  Native Amer.  % URM Masters

13.6%  13.4%  10.3%  8.7%  9.6%  8.0%  9.0%  10.7%  9.6%  9.7%  8.0%  7.6%

P. Dorhout at NDEW 2013  www.oxide.gatech.edu
URM PhDs by Year

% PhD Awarded

Asian
Hispanic
Black
Native Amer.
% URM PhDs

% Total URM

Year

00-01 01-02 02-03 03-04 04-05 05-06 06-07 07-08 08-09 09-10 10-11 11-12

6.7% 5.1% 6.8% 6.1% 10.0% 7.0% 7.5% 7.1% 10.7% 10.6% 9.9% 12.3%

P. Dorhout at NDEW 2013
www.oxide.gatech.edu
What about Kansas State – what’s next?

• Understand the baseline for undergraduates
• Kansas State has a recognized completion gap
  • Change the undergraduate experience
  • Collaborate across campus – build a SACNAS chapter
• Promote UG research
  – Initiated a student fee to support UG research and study abroad
  – Developing Scholars Program
KSU URM Undergraduate Retention – A&S Cohorts

![Bar chart showing 1 yr retention and 6 yr graduation rates for different cohorts from 2002 to 2011. The chart indicates that the 1 yr retention rate varies between 12% and 19% across the cohorts, while the 6 yr graduation rate shows a trend of increasing from 2002 to 2011.]

P. Dorhout at NDEW 2013
What about Kansas State – what’s next?

- Understand the baseline for undergraduates
- Kansas State has a recognized completion gap
- Change the undergraduate experience
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Welcome, GTAs!

On the CATL site you will find helpful and valuable resources for your career growth and professional development. Resources are available to you in the Teaching and Learning Knowledge Base. Check out our new Teaching and Learning Resources section or our new Teaching Resources section. You can also access the CATL blog and website. Link: http://catl.ind.opalsinfo.net

Visit the links to your left to find more information about the GTA Program and the Advancement of Teaching and Learning. If you ever have any questions about the GTA Program, contact us at catl@k-state.edu or 755-532-7828.

GTA Recognition of Achievement in Professional Development

All events take place from 3:30–4:30 pm in the Hale Library Hemisphere Room (5th floor). We’d like to extend a big THANK YOU to Hale Library for hosting these events!

January 24, 2013
“Avoiding Powerpointlessness in your Lectures and Other Tips on Teaching Styles”
David Fallin, Instructor of Marketing, will share some ideas on the use of PowerPoint, discussion, and demonstrations in large vs. small classroom settings.

February 6, 2013
“OMGI! My prof just tweeted me!” Using Technology in the Classroom
Dr. Rebecca Gould, Director of the Information Technology Assistance Center, will talk about technology use in the classroom, including K-State Online. This session will be a lively, interaction discussion about the use of technology in the classroom with instructional designers, technology trainers and faculty.

March 5, 2013
“Diversity in Your Teaching: Today’s Global World and Multicultural Competencies in Teaching”
Gabriela Diaz de Sabates, Instructor of Women’s Studies, will discuss diversity, international GTAs, and international students in the classroom.
Developing Scholars Program (DSP)

The Developing Scholars Program is an Excelencia in Education Honorable Mention

What is DSP?

DSP offers underrepresented students research projects with faculty mentors. Students will receive academic, social, and financial support while participating in the discovery and creation of new knowledge at Kansas State University.

The program provides structured, faculty-supported opportunities for selected students who typically have not been well-represented in higher education in Kansas. If you are a student who has been historically underrepresented and are interested in doing research with faculty, you are strongly encouraged to apply.

Students will be involved in a seminar course for each semester of their first year. During subsequent semesters, students will be required to attend lectures and follow-up discussions at monthly meetings.
Activities at K-State

- Developing Scholars Program
- K-State Advancement of Women in Science and Engineering (KAWSE)
- McNair Scholars
- NIH Bridges
- LS-AMP (new)
- MANNRS (Agricultural Sciences)
- SUROP, REU programs
- Kaufman Scholars/IMPACT
## Resources for Recruiting Faculty

<table>
<thead>
<tr>
<th>Organization</th>
<th>Address Details</th>
<th>Website</th>
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<tbody>
<tr>
<td>Indian Country Today</td>
<td>579 Main Street, Oneida, NY 13421, 888.550.1311</td>
<td><a href="http://indiancountrytodaymenedianetwork.com">http://indiancountrytodaymenedianetwork.com</a></td>
</tr>
<tr>
<td>Minority Health Professions Foundation</td>
<td>3 Executive Park Drive N.E, Suite 100, Atlanta, GA 30329, 404.634.1193</td>
<td><a href="www.minorityhealth.org">www.minorityhealth.org</a></td>
</tr>
<tr>
<td>Minority &amp; Women Doctoral Directory</td>
<td>5908 Featherlight Place, Santa Rosa, CA 95409, 707.539.7944, 707.539.7916</td>
<td><a href="www.mwdd.com">www.mwdd.com</a></td>
</tr>
</tbody>
</table>
| National Association of African American Studies & Affiliates (NAAAS) | NAAAS, P.O. Box 325, Biddeford, ME 04005, 207.839.8004, 207.839.3776 (Fax)  
naaasgrp@webcom.com | [www.naaas.org](www.naaas.org)                                                     |
People made this possible...

- Chardie Baird
- Bonnie Beer
- Margi Cech
- Anita Cortez
- Omnia El Hakim
- Val Gallegos
- Larry Goodrich
- Jodie Hanzlik
- Beth Montelone
- Arlene Nededog
- Mark Rodriguez
- Farrell Webb
Resources made this possible:

• DoEd
  – McNair Scholars programs – KSU, CSU
  – TRIO – KSU, CSU

• NSF
  – ADVANCE, KAWSE - KSU
  – AGEP – CSU
  – Louis Stokes AMP – KSU, CSU

• NIH
  – Bridges to the Doctorate, Bridges to Bachelors

• CSU and KSU for base support for personnel