

Texas A&M University



Dr. Karen Butler-Purry
Associate Provost for Graduate Studies

Council of Graduate Schools Annual Meeting
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Perceptions about Careers

Academia

- *Working in academia presents good opportunities to mentor and shape future generations in a positive way; Can teach students and interact with students*¹
- *Free to choose my research topics; Can do the research that I like*²
- *Free to pick who I work with (my students)*²
- *Relatively free on my working time, vacations, etc; Be flexible in schedule*²
- *Job safety after getting tenure*²
- *Can share my knowledge with other people around the world*²
- *Being paid to learn something new*²
- *Can go to conferences around the world and meet people*²

- *I have been going to school continuously since undergrad and am sort of burnt out from the academic environment. I would like to get experience in a different environment.*¹
- *I plan to start my own business, and a career in academia is not in line with this goal.*
- *I don't have the desire to teach on the collegiate level.*¹
- *Very demanding (Not sure if I am smart enough or not); Very competitive*²
- *Pressure to publish and get tenured*²
- *Cannot make lots of money*²

¹Domestic PhD engineering students

²International PhD engineering students

Perceptions about Careers

Industry or National Lab

- *I am looking for an R&D position or a consultant position in industry or at a national lab¹*
- *Make money²*
- *Less stressful²*

- *My job may become uninteresting and boring after a couple of years²*
- *I do not get to pick my research topics²*
- *There are very strict rules on working time, vacations, etc; more liability and more stress, as a consequence²*
- *Can't share my knowledge with people around the world²*

¹Domestic PhD engineering students

²International PhD engineering students

National Issues/Challenges

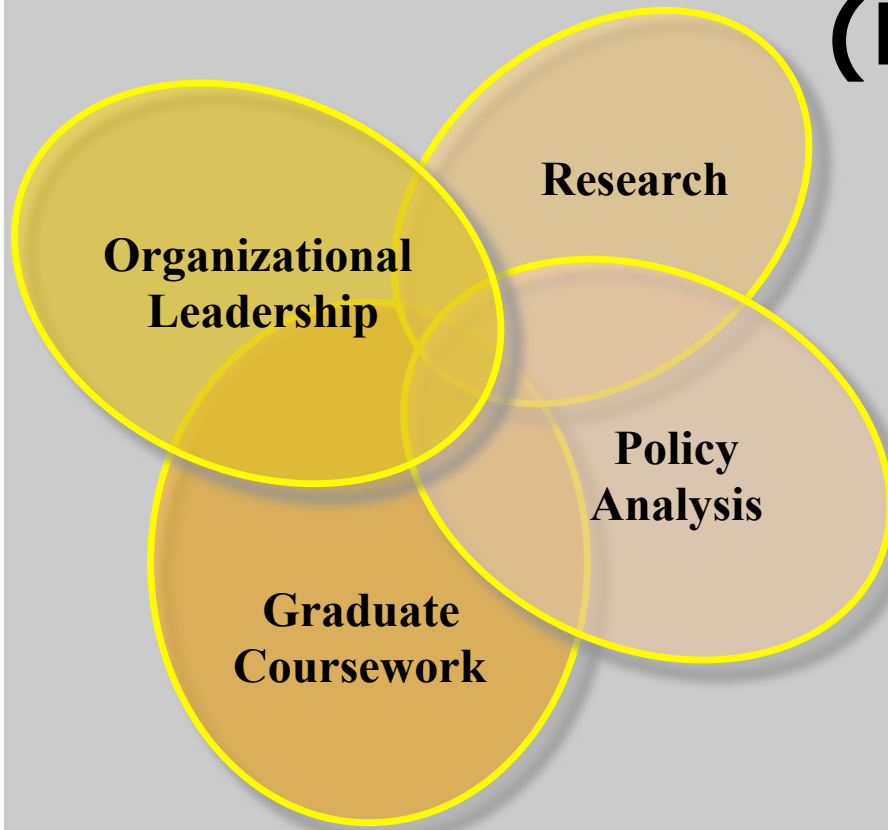
- **Motivate more domestic students to pursue STEM master's and PhD degrees.**
- **Find more effective ways to get Community college transfers into pipeline to graduate school.**
- **Develop skills of PhD graduates in engineering for successful careers outside of academia**
- **Develop stronger communication skills in English for International STEM graduate students**
- **Expand broadening participation goals/accountability for graduate students on NSF funded research and ERCs.**



Sample Texas A&M University Faculty-led Graduate Student Cohort Programs

- **Biodiversity IGERT**
- **TAMUS LSAMP Bridge to Doctorate**
- **HLEAE and Sloan Minority PhD Programs in Science and Engineering**
- **Political Science Group**

Hispanic Leaders in Agriculture and the Environment (HLAE)



Goal:
Increase number of Hispanic leaders in governmental and non-governmental organizations, colleges and universities, and private industries related to “agriculture and the environment”

Note: Program inclusive of all students with experience and interest in reaching U.S. Hispanic populations.

(courtesy of Dr. Manuel Pina)

University	Total	Gender		Degree		Ethnicity		
		Male	Female	M.S.	Ph.D.	Hispanic	African-American	White
Texas A&M University	88	43	45	49	39	70	12	6
Texas A&M-Kingville	7	1	6	1	6	3	0	4
Texas A&M-Corpus Christi	6	5	1	4	2	6	0	0
University of Texas at San Antonio	37	13	24	14	13	27	4	6
Jackson State University	1		1		1		1	
George Mason University	1		1		1			1
Kansas State University	2		2		2			2
Totals	142	62	80	68	64	106	17	19
Number of Students Graduated	M.S.		Ph.D.					
	#	%	#	%				
	49	34.5	28	19.7				
Examples of Employment	Wildland Urban Specialist, Lincoln National Forest Supervisor, Rangeland Management Specialist, Assistant Professor							
Examples of Awards/Recognitions	Academic Excellence Award; Chief's Scholar, U.S. Forest Service; NSF East Asia Institutes, MANRRS Service Award							

Note: Recent responses from 63 former and current HLAE scholars shows: 9 courses taught, 16 laboratories taught, 12 classroom lectures delivered, 24 workshops conducted, 18 seminars presented, 9 internships completed, 45 poster presentations presented, 35 oral Presentations made, 8 journal articles published, 2 book chapters written, 18 community service activities performed, 23 professional association activities conducted.

HLAE Ph.D. Students



Martia Ross
Poultry Science
Pre-harvest Food Safety



Maura Palacios
Wildlife and Fisheries Science
*Ecology and Evolution
of Mollies in Middle America*



Eli Borrego
Plant Pathology and Microbiology
*Jasmonic Acid during
Maize Interaction
with *Aspergillus flavus**

Overview: Project for Equity, Representation, and Governance

- Encompasses two fields in the Department of Political Science focused on questions of equity
 - Public administration and public policy
 - Racial and ethnic politics
- Events include
 - Fall and Spring recruitment events (2 days, 2 nights)
 - Participation in national level minority student recruitment program in the discipline
 - A&M research paper contests
 - Undergraduate research assistants

Program Success

- URM students currently enrolled: 6/13
- Previous URM students: 9 graduate, 15 undergraduate
- Recognition
 - Undergraduates going on to graduate school at Harvard University, Stanford University, University of Kansas, University of North Carolina, Georgetown University, Texas A&M
 - Graduate placements: University of Iowa, Michigan State University, University of North Carolina-Charlotte, University of Connecticut, American University, University of Houston

(courtesy of Dr. Ken Meier)

Former and Current Student Profiles



Rene Rocha graduated in 2006 and recently earned tenure at the University of Iowa. Rene has received multiple best article and best reviewer awards, and he continues to serve on dissertation committees for his students.



Erin Melton graduated in 2011 and has since served as an assistant professor at the University of Connecticut. Erin also received a Senator Phil Gramm Doctoral Fellowship award for excellence in research and teaching.



K. Jurée Capers is a current student at Texas A&M. Jurée has a dissertation fellowship from the American Educational Research Association and has received three job interviews from five applications to date.

(courtesy of Dr. Ken Meier)

Program Overview

- Biomedical Engineering program established at TAMU in 1972 and accredited since 1977
- Member of the Alfred P. Sloan Foundation Graduate Scholarship Program
 - Three URM students each year are awarded over \$20,000 for use over the course of their graduate program
 - Scholarship can be used for rent, tuition, research needs, etc.
 - Scholarship utilized as a recruitment and retention tool for URM students
- Other recruitment tools for URM outreach include:
 - GRE Search Service database
 - Graduate Invitational
 - Individual campus visits

(courtesy of Dr. Gerald Cote)



BIOMEDICAL ENGINEERING
TEXAS A & M UNIVERSITY

Program Statistics

- Current enrollment: 113 graduate students
 - 87 Ph.D. students
 - 17 URM students
- Estimated Ph.D. graduates: 16 URM (105 total)
- Total of 15 Sloan scholars, 11 since 2008
- Former URM Ph.D. students received positions in industry and academia, working as post-doctoral students for both domestic and international universities as well as researchers & lecturers
- Multiple students have received recognition from the National Science Foundation as GRFP Fellows and Honorable Mention winners
- Students have been leaders of organizations including Society of Photo-optical Instrumentation Engineers (SPIE) and Graduate Student Council

(courtesy of Dr. Gerald Cote)



BIOMEDICAL ENGINEERING
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Student Highlights



Melodie Benford

- Sixth year Ph.D. student
- BS from Louisiana Tech University
- NSF-GRFP winner
- Interested in bench-to-bedside, point-of-care medical device development
- Leads a multidisciplinary team with multiple departments

Michael Moreno, Ph.D.

- TAMU graduate
- TEES Assistant Research Prof
- Specialty in Orthopedic Biomechanics
- Consultant for two start-up companies
- 15 publications & 2 patents



Meagan Saldua, M.S.

- Fourth year Ph.D. student
- BS from Angelo State University
- 4 publications, 1 national presentation
- Research involves the design & construction of a microscope for large area imaging of epithelial tissues for pre-clinical studies



(courtesy of Dr. Gerald Cote)



BIOMEDICAL ENGINEERING
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How do we Scale Up these efforts to the Institution-level to Impact more Students?

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