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**CHANGING STUDENTS,  
EVOLVING CURRICULA,  
AND  
EXPANDING OPPORTUNITIES  
FOR PUBLIC SERVICE**

February 23, 2009

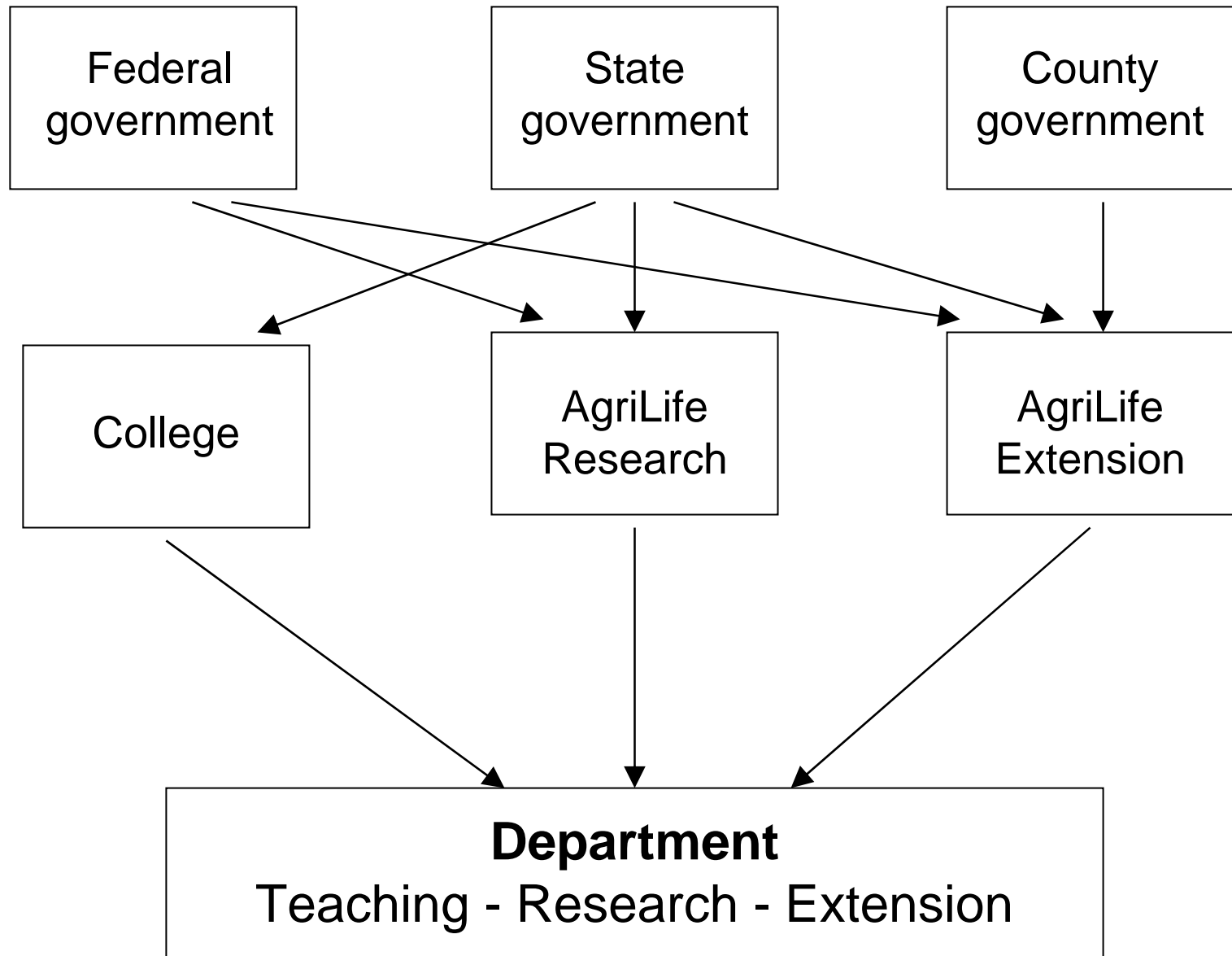
A. Gene Nelson

Professor

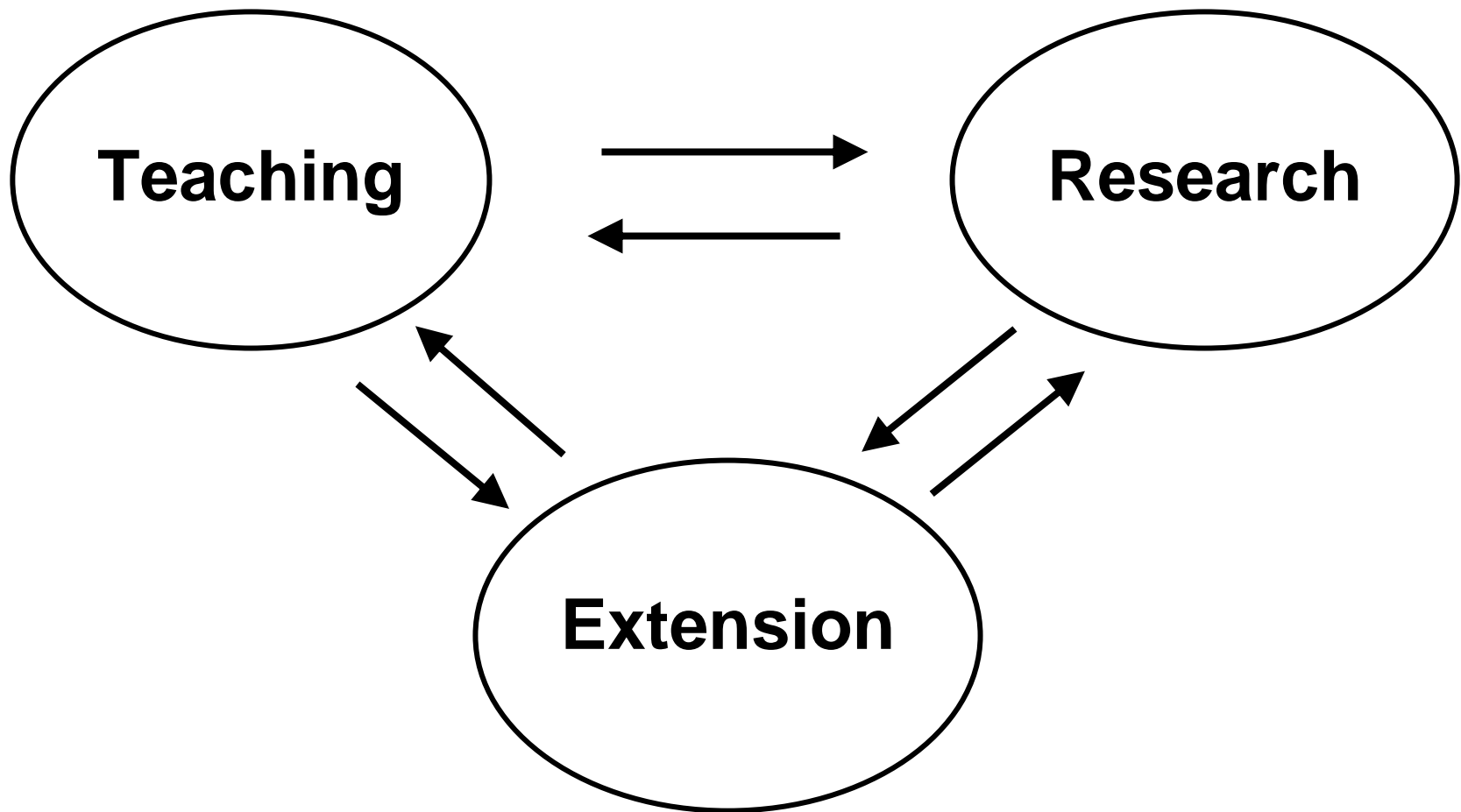
Department of Agricultural Economics



# Inter-relationships in the Land Grant System



# Land Grant Synergies

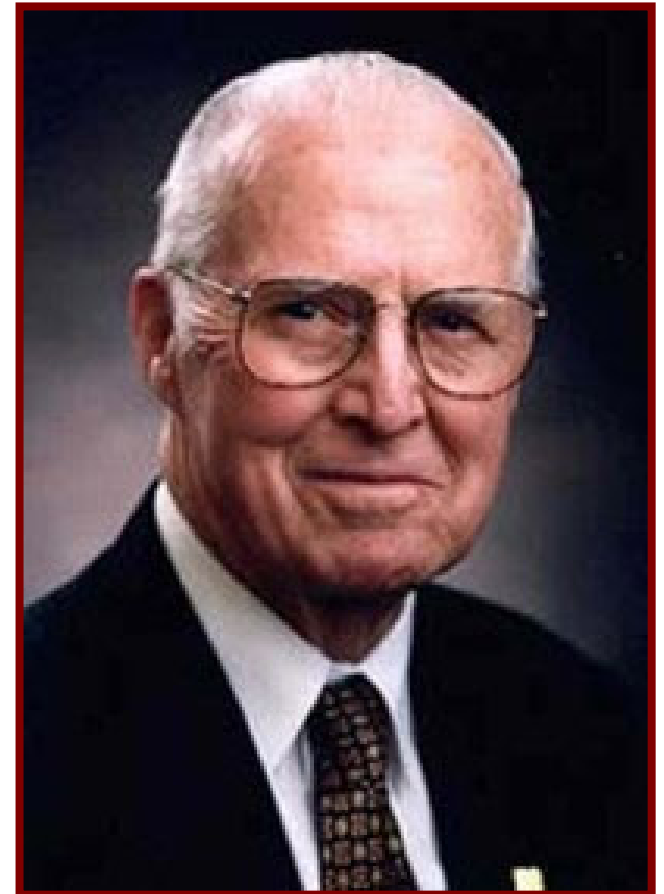


# College of Agriculture and Life Sciences



TEXAS A&M  
UNIVERSITY

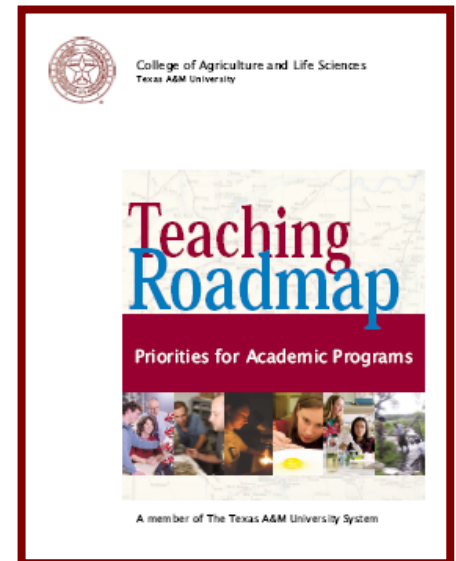
Our Purpose: “To conduct teaching, research, and extension programs in agriculture, the life sciences, and natural resources that impact the quality of life, equity, and economic growth of Texas and beyond.”



# Teaching Roadmap



- Offer academic programs that are relevant and effective in developing students' lifelong learning skills.
- Improve teaching effectiveness and learning excellence.
- Attract and retain students with high potential who represent diverse backgrounds and experiences.



Designing Curricula for  
Professional Education:

To Produce Market-Ready  
Graduates

# About the College

- Is the third-largest college at Texas A&M University.
- Has one of the largest enrollments of any college of agriculture in the United States
- Consistently ranks as one of the top colleges of agriculture and life sciences in the nation.



# Diverse Needs – Diverse Programs

- Food and Fiber Production Systems
  - Animal Science
  - Biological and Agricultural Engineering
  - Horticultural Sciences
  - Nutrition and Food Sciences
  - Poultry Science
  - Soil and Crop Sciences
- Social Sciences and Business
  - Agricultural Economics
  - Agricultural Leadership, Education and Communications

# Diverse Needs – Diverse Programs

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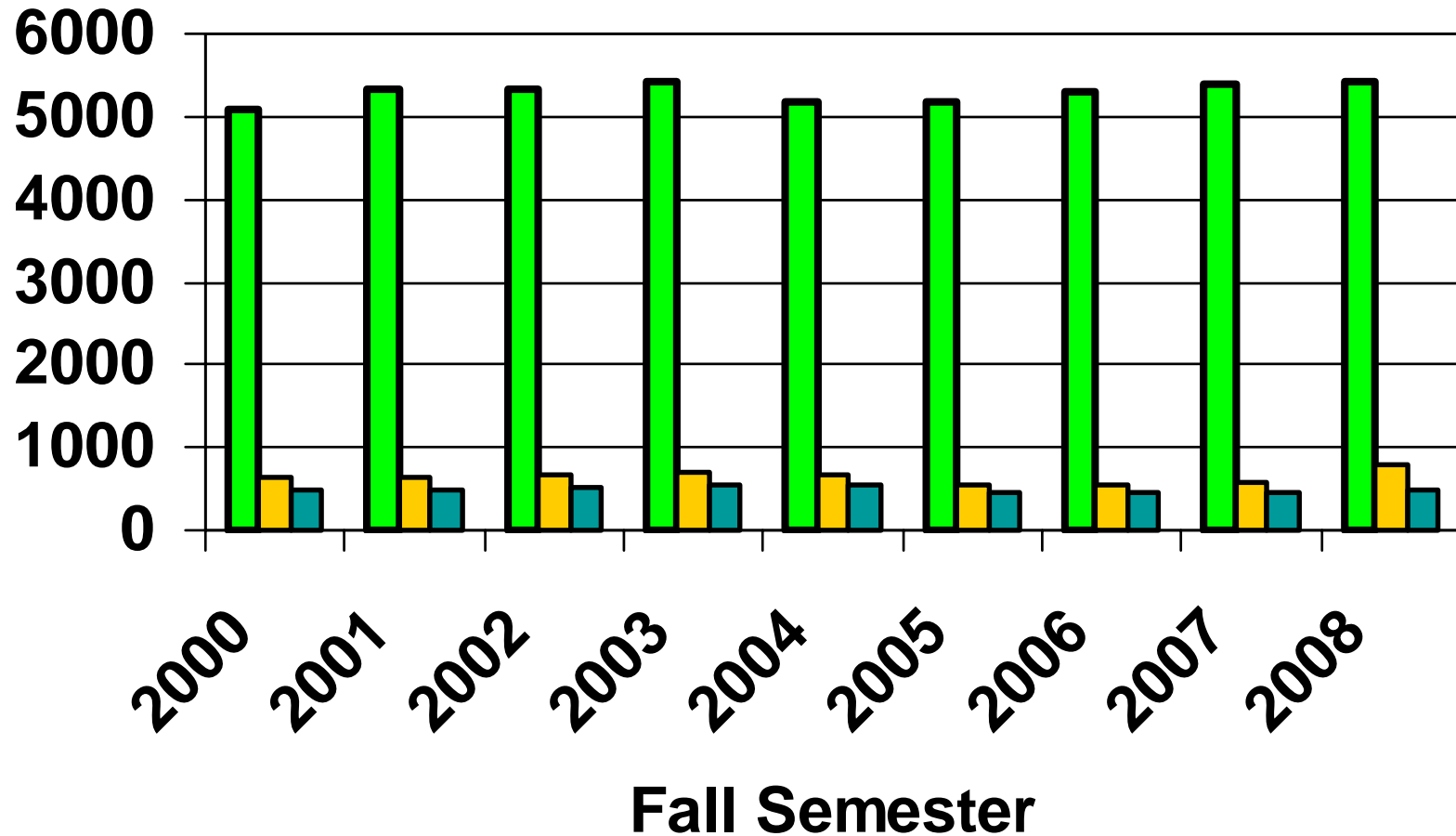
- Natural Resources and Environment
  - Ecosystem Science and Management
  - Recreation, Park and Tourism Sciences
  - Wildlife and Fisheries Sciences
- Biological and Life Sciences
  - Biochemistry and Biophysics
  - Entomology
  - Plant Pathology and Microbiology

# Diversity of Degrees



	Bachelors	Masters	Doctoral
Interdisciplinary	3	8	5
Interdepartment	2	8	2
Departmental	25	35	19
Total	30	51	26

# Total Enrollment



■ Undergraduate ■ Masters ■ Doctoral

Millennials, AKA, Generation Y (born 1980 – 2000)

- Expect instant feedback and convenience (24/7).
- Proficient in use of modern technology.
- Variety of learning styles and level of skills.
- Thrive on variety, change, and stimulation - easily bored.
- Relate to real-world tasks and examples - education must be meaningful and relevant.
- Want to hear truth - instructors must be "real," credible.
- Holistic - seeking balance between school and life, work and life.
- Interested in service - volunteerism is of interest.

# Self-Entitled Students

- Research by Greenberger, Lessard, Chen, and Farruggia in J Youth Adolescence in 2008
- Study at University of California-Irvine assessed “academic entitlement” (AE)
- Expectations of high grades for modest effort and demanding attitudes towards teachers.
- Caused by their parents exerting achievement pressure marked by social comparison with other youth and rewards for good grades.
- AE was not significantly associated with GPA.

# Academic Motivation in Ag Economics

- Study by Siebert, Litzenberg, Gallagher, Wilson, Dooley, and Wysocki in AJAE.
- A study of undergraduates at Texas A&M University, Purdue University, and the University of Florida.
- Motivation was measured as class attendance.

- Motivators
  - Agreed that grades are a good predictor of career success.
  - Women tended to be more motivated students.
  - Those who expected to attend graduate school within a year following graduation.
- Negatives were work, TV and video games, social time, sleep, and sports.



# Team Borlaug in Iraq

- Texas A&M University graduates Blaze Currie (left) and Jonathon Glueck (right)
- Spent summer and fall 2008 developing 4-H clubs in central Iraq.
- Seven clubs with 350 Iraqi youth.



Holding soil samples.

# "Conquering Fear - 8 Legs at a Time"



- Kristie Reddick and Jessica Honaker, Entomology graduate students, traveled to Kenya in 2007.
- Studied the elusive Solpugid, a fuzzy cousin of the spiders and scorpions.
- Working with youth to reduce fear and prejudices.



# Updating the Curricula

- Emphasize our interdisciplinary and application strengths
- Update traditional degree programs
- Provide more flexibility
- Develop the soft skills that are hard to teach
- Experiential learning – study abroad, internships

# Responding to New Needs and Opportunities



- BS in Forensic & Investigative Sciences
- Bachelors Degree in Spatial Sciences
- University Studies degree
- Master of Biotechnology
- Master of Agribusiness
- Graduate Programs in Water Management



*discover*  
**forensic and  
investigative sciences**

Texas A&M University

[CONTACT](#) [SEARCH](#)



### About FIVS

About the degree program, forensics, and frequently asked questions.



### Faculty & Staff

Faculty and staff contacts, profiles, and research information



### Professional Links

Interesting and useful links about forensic and investigative sciences around the world.



### Career Opportunities

Forensics careers, tips and advice for students, information for internships and other career information



### Students

Prospective and current students, course descriptions, forms and calendars

2475 TAMU • College Station, Texas 77843-2475 • [forensics@tamu.edu](mailto:forensics@tamu.edu)  
College of Agriculture and Life Sciences • [Webmaster](#) • Maintained by the [Department of Entomology](#)

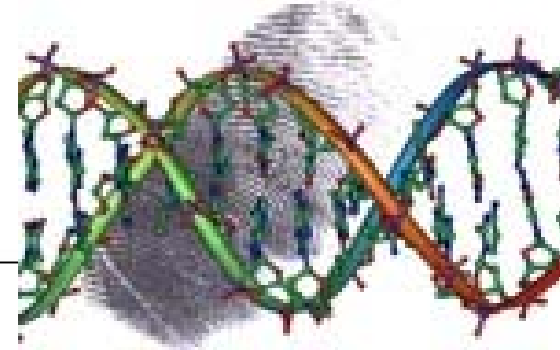
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# Forensic & Investigative Sciences Degree

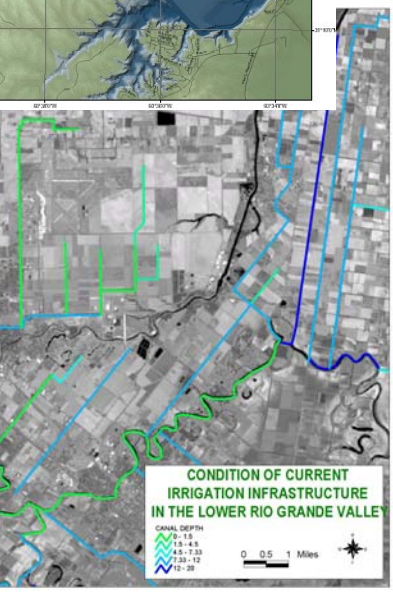
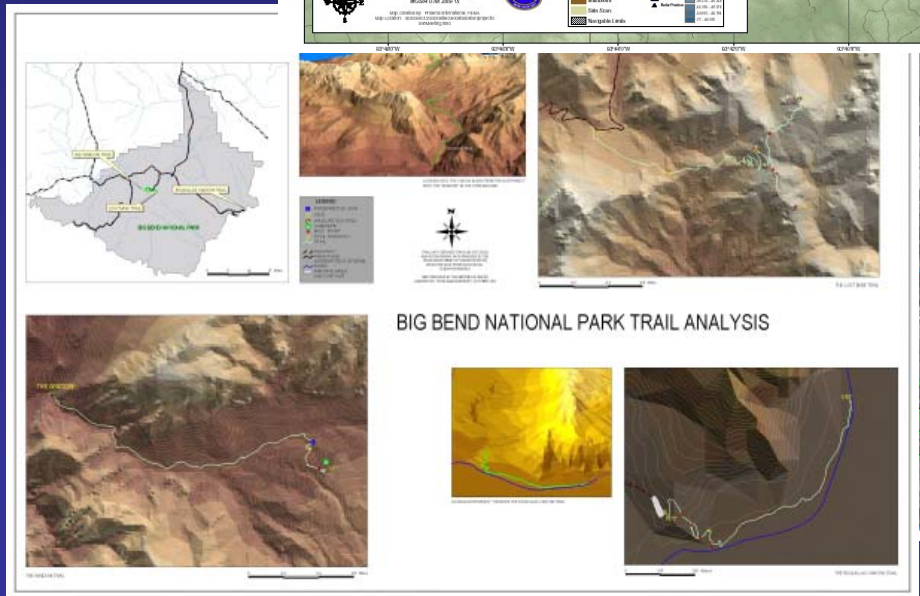
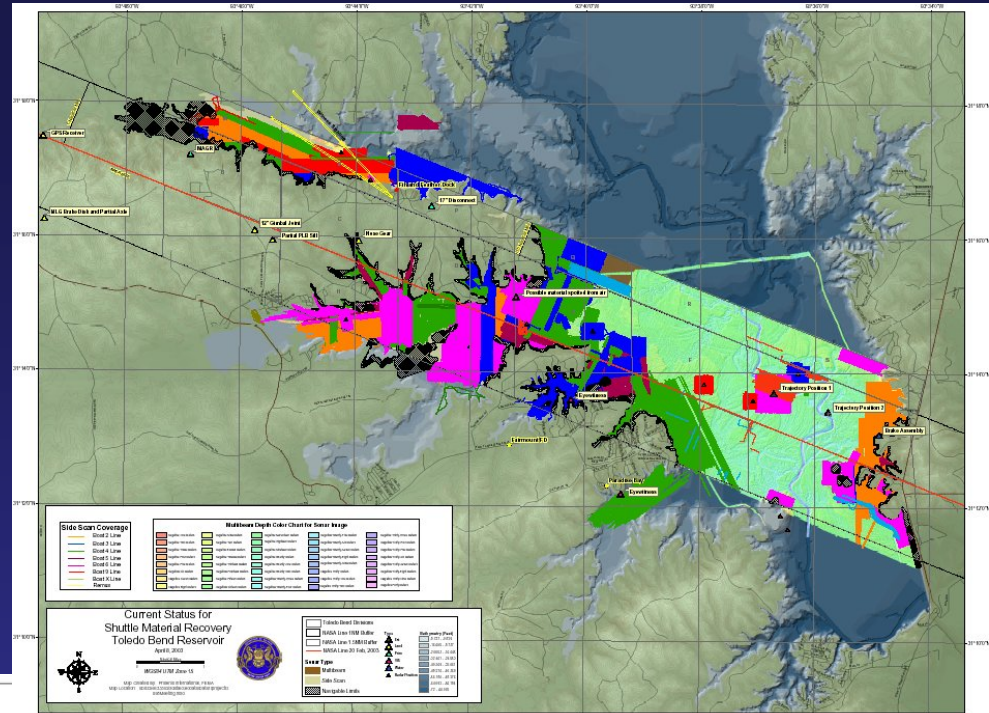
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- Prepares students for more than a career as a crime scene investigator like CSI.
- The curriculum emphasizes the use of evidentiary information to solve problems.
- Students apply state-of-the-art science and technology as tools to help answer critical questions.
- Career opportunities include law, medicine, homeland security, public safety, environmental quality, and public health.

It's up to you...

Air and Water Quality Management  
Bioenvironmental Science  
Business  
Consulting  
Forestry  
Homeland Security  
Local, State and Federal Agencies  
Natural Resource Management  
Oil and Gas Industry  
Public Health  
Rangeland Ecology  
Soil and Crop Science  
Transportation  
Urban Planning  
Watershed Management  
Wildlife Management



# Spatial Sciences Degree

- University-level bachelors degree administered by College of Agriculture and Life Sciences and College of Geosciences (Department of Geography).
- Uses cutting edge computing technology to address issues in sociology, economics, environmental, and natural resources.
- Expect to enroll 75-100 students.



# University Studies Degree



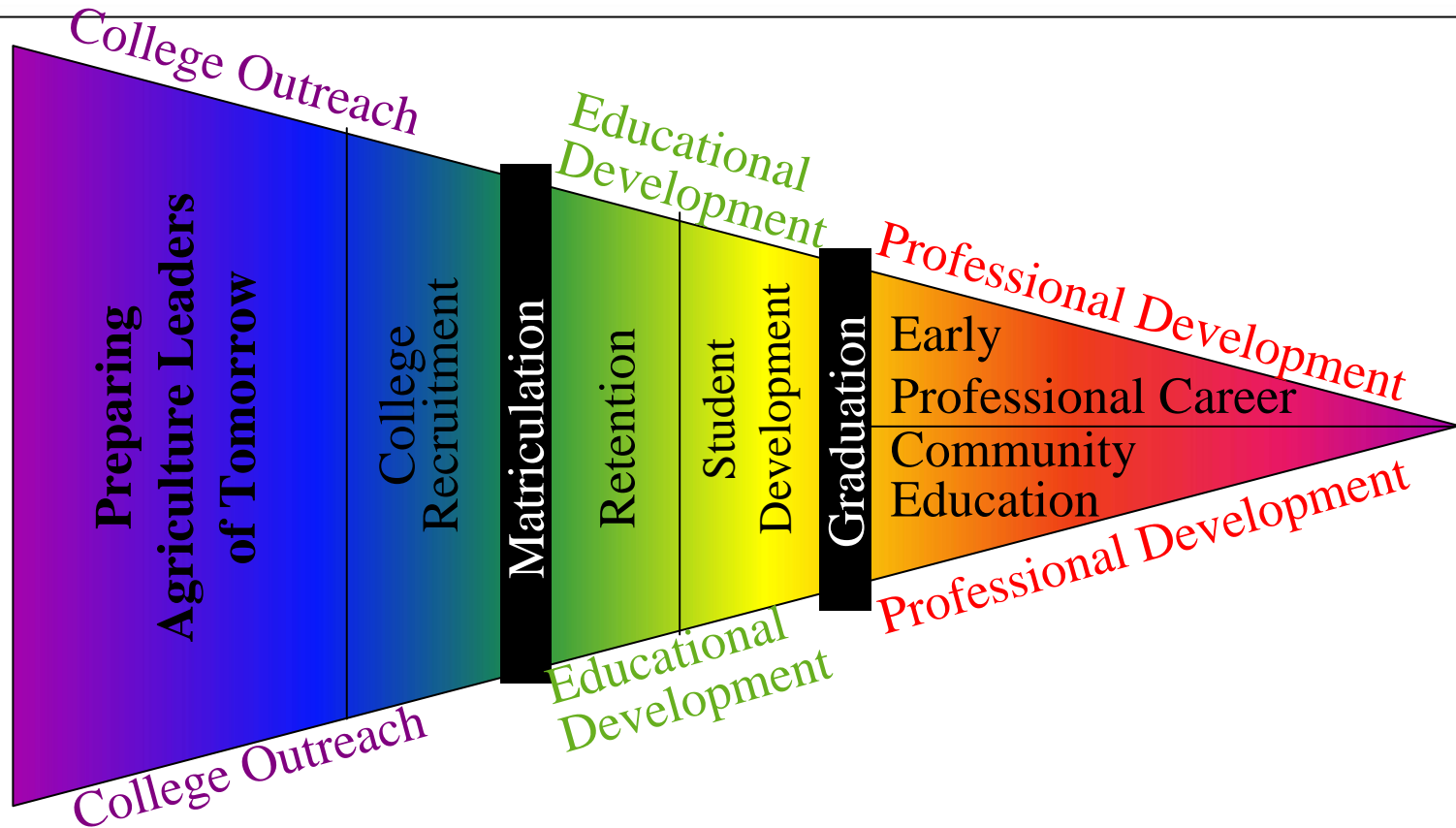
- One area of concentration and two minors.
- Existing area of concentration:
  - Leadership Studies
- Pending area of concentration:
  - Global Agr. & Environmental Studies

# Innovative Teaching Methods



- Team teaching
- Recognize different learning styles
- Diverse students learn differently
- Focus on outcomes
- Engage the students
- Why do you need to learn this?

# A Total System Approach



## Undergraduate Educational Initiative Model

# The Abriendo Puertas Parental Communication Initiative

Texas A&M University  
College of Agriculture and Life Sciences



# Abriendo Puertas

The “Abriendo Puertas” (Opening Doors) Parental Communication Initiative is a 501(c)3 entity that was developed by and is supported by **Texas A&M University’s College of Agriculture and Life Sciences** to provide a parental support system that assists Hispanic students in high school completion and college graduation.



# Cornerstones

Abriendo Puertas is a grass-root, community-based initiative, built on the foundation that:

- (1) every parent desires a better life for their children, and
- (2) educating our future leaders is a familial and community responsibility.



# Accomplishments

Abriendo Puertas has trained over 2,000 volunteers and has provided outreach to over 25,000 families in its short five year existence.



# Abriendo Puertas

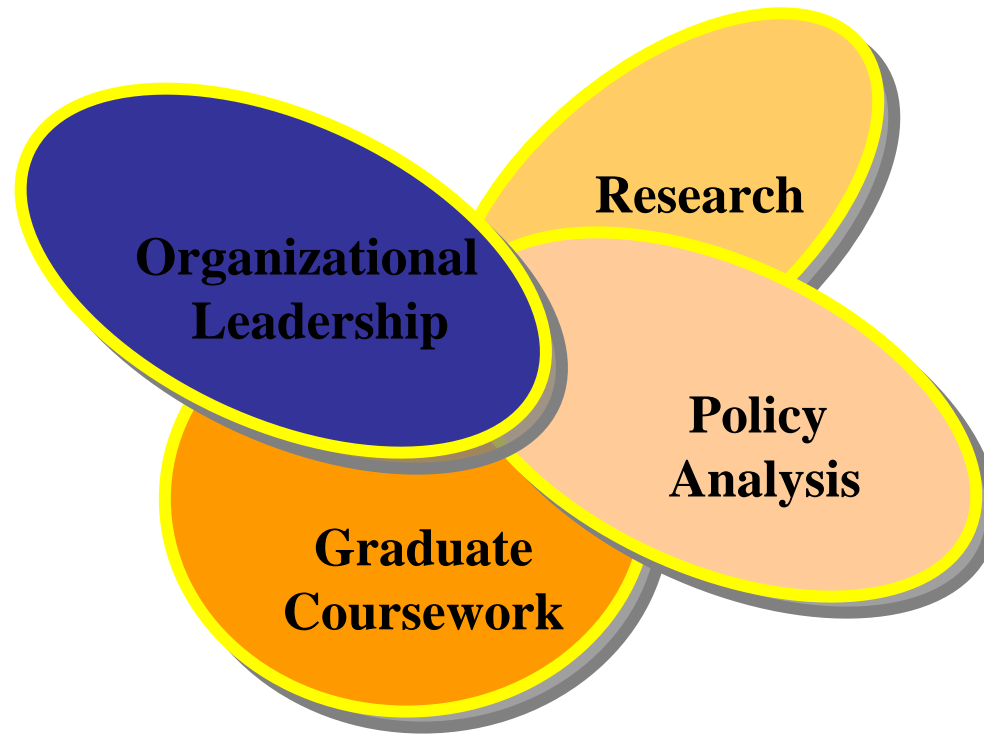
## Abriendo Puertas:

- Is built on a replicable, and sustainable research-based, model which utilizes trained “volunteer” parent-to-parents to accomplish its objective;
- Works in conjunction with community agencies, educational entities, municipalities, and industry;
- Has trained over 2,000 volunteers and has provided outreach to approximately 30,000 families in its short five year existence, and
- Has received local, state, and national accolades.





# Hispanic Leaders in Agriculture and the Environment



Recruiting and training graduate students.

# Initial contact, 1998

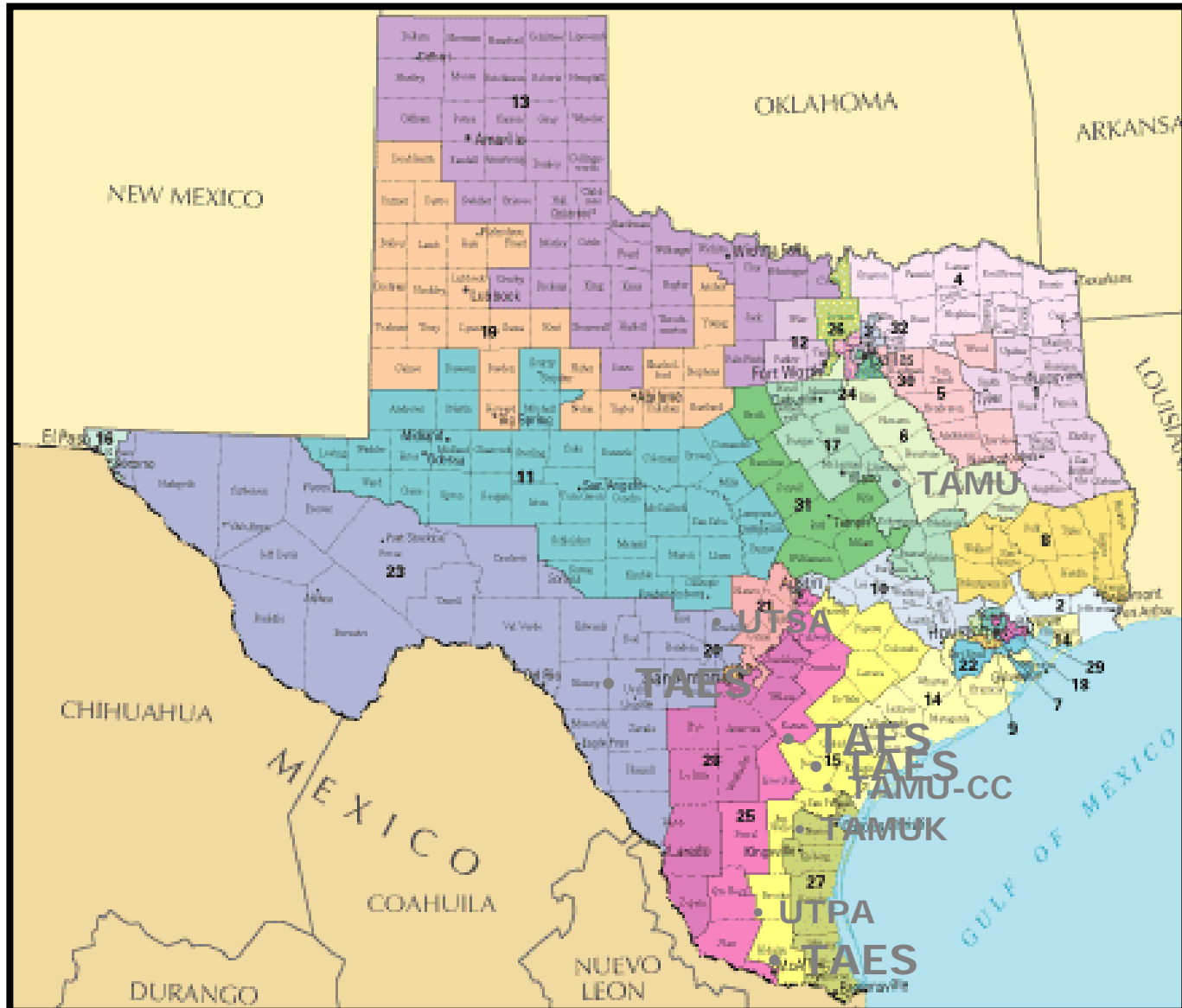


**Jose Salinas**  
Special Assistant to the Deputy Chief (Retired)  
USDA-Forest Service

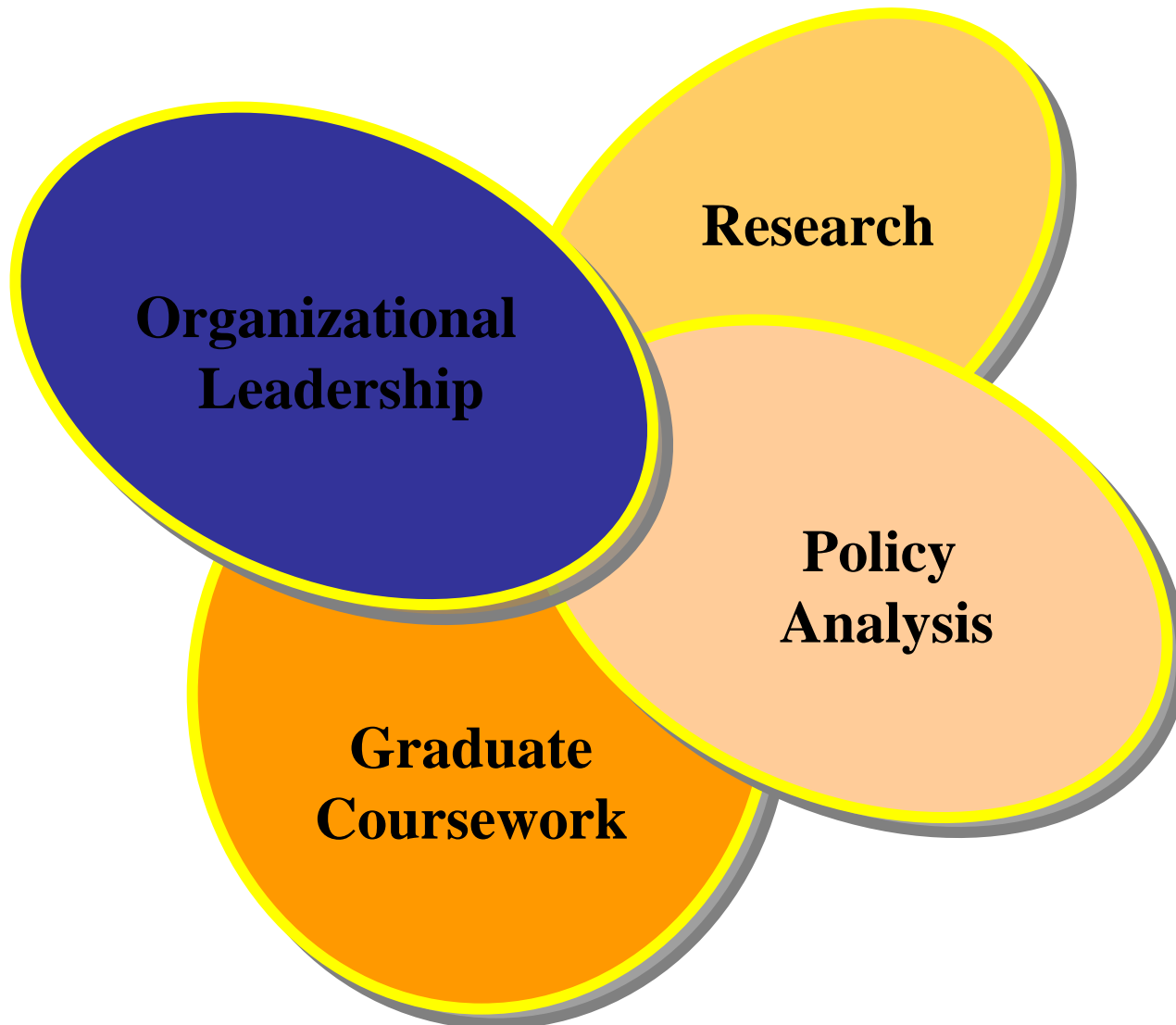
**Goal: Increase number of Hispanic leaders in governmental and non-governmental organizations, colleges and universities, and private industries related to “agriculture and the environment”**



# Research-Based Bridges



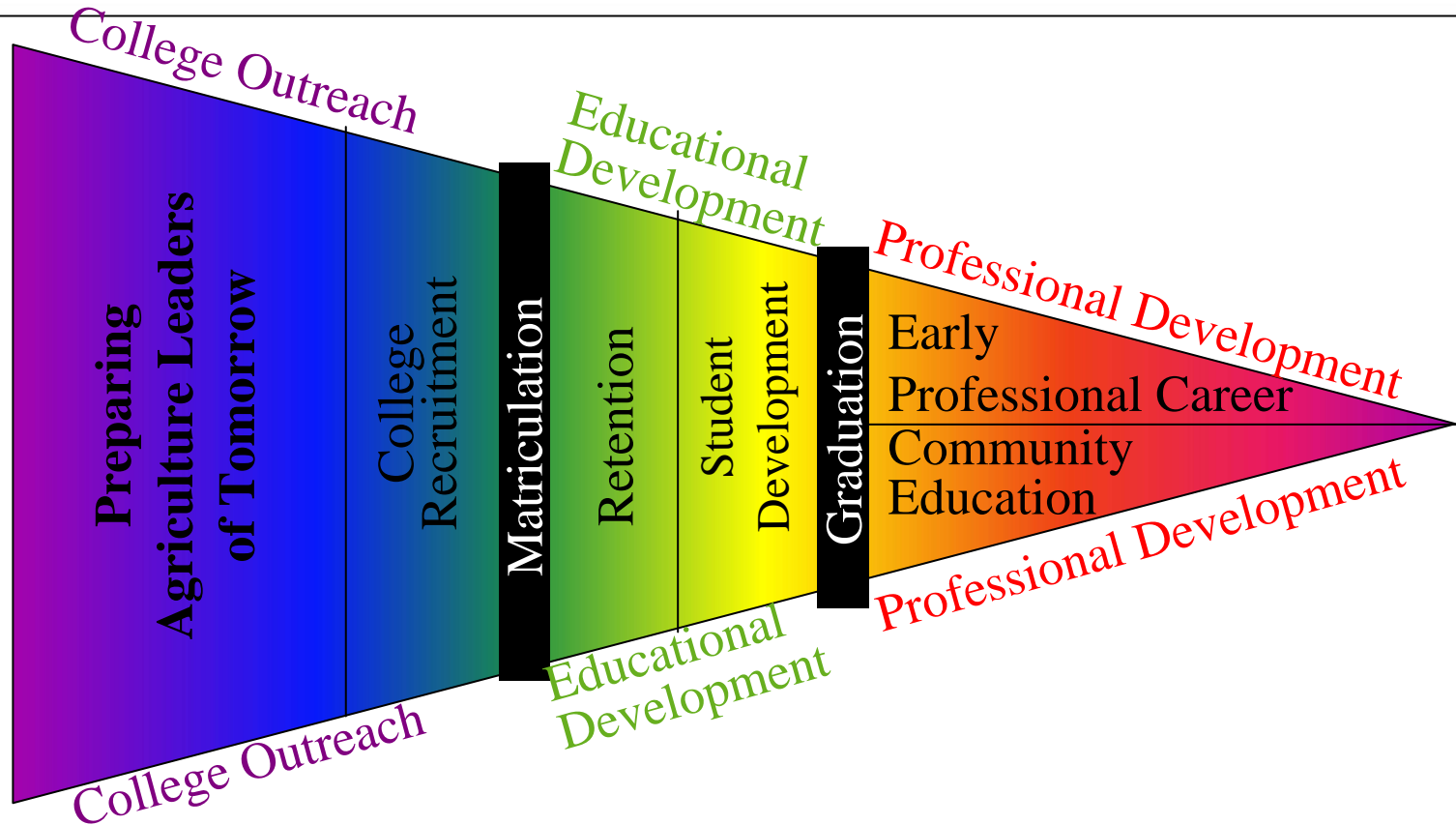
# Hispanic Leaders in Agriculture and the Environment



# Major Outcomes!

- **73 students enrolled to date**
- **TAMU (48), UTSA (18), TAMUK (4), TAMU-CC (3)**
- **M.S. (39), Ph.D. (35)**
- **Hispanic (60), White (10), African-American (3)**
- **Male (36), Females (37)**
- **Graduated (27) (38%) [M.S. (20), Ph.D (7)]**
- **Currently enrolled (30) [TAMU (23), TAMUK (4), TAMU-CC (3), UTSA (1), UTPA (pending)]**

# A Total System Approach



## Undergraduate Educational Initiative Model

# Future Challenges

- How to make the connections between academia and federal employment opportunities?
- How to structure internships?
- What about short term experiences as a substitute for internships?
- Can we offer more academic credit to make these experiences more appealing to students?
- How do we develop collaborations between academics and federal employers?