

EDUCATING PLANT SCIENTISTS AT 1890 LAND GRANT UNIVERSITIES AND COLLEGES: CHALLENGES AND SUCCESSES

By

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Disciplines

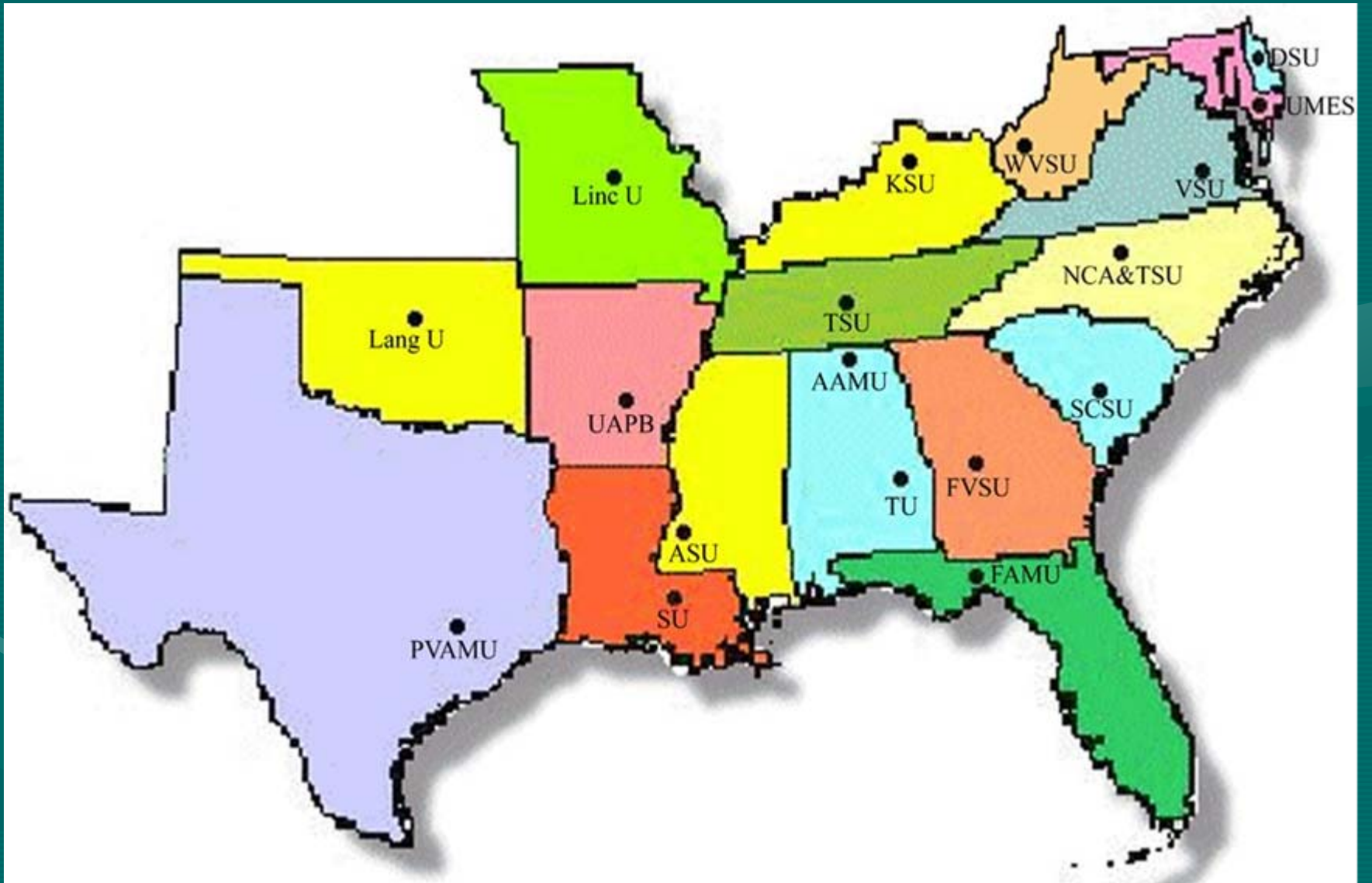
American Phytopathological Society

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1890 Land Grant Universities and Colleges

Established through the second Morrill Act of 1890

	Year Established	Name of Institution
1	1866	Lincoln University
2	1871	Alcorn State University
3	1872	South Carolina State University
4	1873	University of Arkansas at Pine Bluff
5	1875	Alabama A&M University
6	1876	Prairie View A&M University
7	1880	Southern University and A&M College
8	1881	Tuskegee University
9	1882	Virginia State University
10	1886	Kentucky State University
11	1886	University of Maryland, Eastern Shore
12	1887	Florida A&M University
13	1891	Delaware State University
14	1891	West Virginia State University
15	1891	North Carolina A&T State University
16	1895	Fort Valley State University
17	1897	Langston University
18	1912	Tennessee State University



1890 Land Grant Colleges with M.S. and Ph.D. Degrees

1. Alabama A&M University
2. Alcorn State
3. Delaware State
4. Florida A&M University
5. Fort Valley State
6. Langston University
7. North Carolina A&T State University
8. Southern University
9. Tennessee States
10. Tuskegee University
11. University of Arkansas at Pine Bluff
12. University of Maryland Eastern Shore
13. Virginia State University

Ph.D. in Plant Science and Related Sciences

- **Alabama A&M University**
All disciplines in Plant Science
- **Southern University**
Urban Forestry

CHALLENGES

- Limited offerings at M.S. and Ph.D. levels as can be seen from the previous slide. Most M.S. and Ph.D. programs are relatively young – 5 to 25 years old.
- Impact of undergraduate enrollment
- Financial support for tuition waivers,, assistantships and fellowships
- Employment opportunities after graduation.
- Doctoral programs for those completing their M.S. degrees are few and far between.

Impact of Undergraduate Enrollment

- Very few minorities enrolling in Agricultural Sciences, much less Plant Sciences
- Tendency for students to spend more than four years to earn a B.S. degree, hence academic fatigue sets in, thereby a lack of interest in Graduate School even when the funding is available
- Public perception of agriculture including plant sciences, which is carried over to graduate school

Other Challenges

- Financial support for graduate students, unstable and show declines
- Small faculty base in Plant Science, at 1890s. For example, at DSU there are only six faculty who are SACs qualified to teach graduate level courses in Plant and Soil Science
- Limited participation in the activities of professional organizations
- The all but dissertation or thesis (ABD/ABT) syndrome

Financial Analysis Last Five Years

- Two main sources of funding for graduate students:
 1. School of Graduate Studies.
 - a. In-state tuition waivers
 - b. Out-of state tuition waivers
 - c. Graduate Assistantships
 2. Research Assistantships
(Stipends) through major professors

Financial Analysis Cont'd

- Funding the past five years has remained steady until the 2008/2009 academic year.

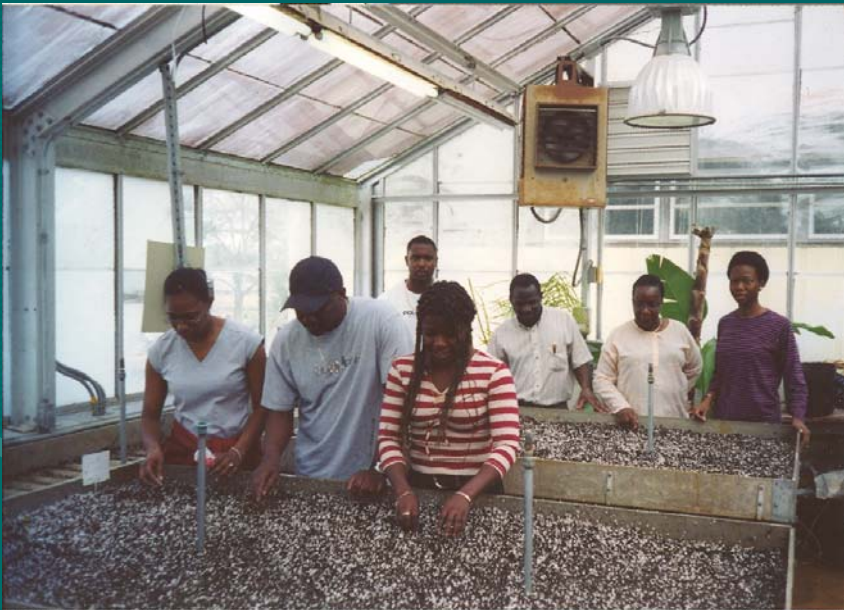
	2004/2005	2005/2006	2006/2007	2007/2008	08/09
In- State	\$20,000	\$21,000	25,000	25,000	21,000
Out-State	\$20,000	\$21,000	25,000	25,000	21,000
Grad. Asst	\$81,000	\$83,000	89,000	89,000	80,000

Please see one page handout for expenditure on per student basis for 2005/2006, 2006/2007 and 2007/2008

SUCCESSSES

- 1890s have achieved successes in producing Masters and Ph.D.s in Plant Science and Related Sciences.
- Alabama A&M University: 70 M.S. and 40 doctorates since about 1988.
- Florida A&M University: 35 M.S. since 1993
- Delaware State University: 3 M.S. since 2005

Graduate Students in the Greenhouse and in the Laboratory



Evaluating soilless medium in
Greenhouse benches for Seed
Science and Technology
laboratory.



Inspecting seeds for
Plant Biosecurity.

Top Producers of M.S. and Ph.Ds 2003-2007

	Agriculture, General		Forestry		Natural Resources Conservation and Research		Natural Resources Management and Policy		Plant Sciences		Total All	
	All	Black	All	Black	All	Black	All	Black	All	Black	All	Black
Florida Agricultural and Mechanical University	24	12			26	17					50	29
Southern University and A & M College			35	23							35	23
Alabama A & M University									36	15	36	15
Tennessee State University	19	14									19	14
Tuskegee University					21	14					21	14
Alcorn State University	15	10									15	10
North Carolina A & T State University									20	7	20	7
Delaware State University							8	3	1	0	9	3
Grand Total	58	36	35	23	47	31	8	3	57	22	205	115

Financial Assistance from Grants

- Modest funding available for research assistantships from 1890 Capacity Building Grants Program
- Evans-Allen Formula Funds for research which benefits graduate students
- Attendance at Professional meetings like the upcoming 1890 Association of Research Directors' Inc. Symposium in Atlanta, Georgia
- More collaborative efforts

Enrollment Last Five Years from the College of Engineering Sciences, Technology and Agriculture (CESTA), FAMU

-
- 2003/2004 22
- 2004/2005 22
- 2005/2006* 17
- 2006/2007 23
- 2007/2008 24
- 2008/2009 19**
- Enrollment is similar for other 1890 Land Grant institutions

Retention and Graduation Rate, CESTA, FAMU

- Over the past five years produced 20 M.S. degrees giving an average of 4 grad. per year.

Incomplete: 5 – Failure to produce final thesis.

Drop-outs: 3 - Personal and family reasons

There is need for improvements.

Plant Breeding and Genetics Class



Graduate students conducting cross pollination in the greenhouse.

Career Placement

- Our graduates have been gainfully employed or have moved on to the professional Schools or doctoral programs
- A few examples in the last five years:

Desiree Abrams, M.S. 2006: USDA, APHIS, Washington, D.C.

Leroy Whilby, M.S. 2004: Doctor of Plant Medicine; Ph.D.
Plant Pathology, University of
Florida.

Lelan Parker, M.S. 2007: Extension Specialist, Univ. of
Florida, Orlando, FL

Tarisha Griffith, M.S. 2008: Publix Processing Center,
Lakeland, FL

Alfred Mbele, M.S. 2006: Miller Brewery, Milwaukee,
Wisconsin

Career Placement Cont'd

- Dyranna Russell, M.S. 2006. Doctor of Plant Medicine,
University of Florida
- Kirphton Fray, M.S. 2007: Professional Family Business,
Fort Lauderdale, Florida
- Tajudeen Salaudeen M.S. 2006: Instructor, Houston
Community College, Houston, TX
- Nadine Bradley, M.S. 2008: Ph.D. program, Environmental
Sciences Inst. FAMU
- Janice Peters, M.S. 2008: Curator, Entomology, CESTA,
FAMU.

How can HBCUs do a better job in producing more MS and Ph.Ds in the future?

- Diversify Plant Science disciplines with the infusion of new technologies
- Actively recruit for interested and capable students that excel in K-12 and college
- Develop/design courses with new technology flavor
- Make visibility in the media to attract public attention and needed support

HBCU Efforts Cont'd

- Enhance financial assistance base for graduate students to attract and retain more capable candidates
- Improved infrastructure for high potency research that will make graduate school more interesting
- Encourage multidisciplinary approaches to graduate level work.

Graduate Students Visiting the Florida State Seed Lab



FAMU Graduate Students Outside the Seed Science and Technology Building at Iowa State University



CONCLUSION

- Tremendous room for growth
- Many challenges
- Full engagement of entire 1890s required
- Some successes already achieved
- May need more partnerships between 1890s and 1862s
- Funds must be obtained and targeted for research assistantships and fellowships.
- Producing minority M.S. and Ph.D.s is critical to the future of the Food and Agricultural Sciences

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Thank You For Listening. Questions?

