

Facilitating interdisciplinary learning experiences through strategic interdisciplinary faculty hires

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Interdisciplinary Hiring Initiative

- Interdisciplinary collaboration and experiences are advantageous to:
 - Students
 - Faculty
 - The university
- Universities are by nature and necessity segmented into silos of expertise
- Identifying and implementing interdisciplinary opportunities between silos is often very difficult

Interdisciplinary Hiring Initiative

Hypothesis: Interdisciplinary faculty can form permanent links between colleges/departments that will help fertilize relationships and opportunities for interdisciplinary learning over the long term

UGA Presidential Hiring Initiative – 16 interdisciplinary faculty positions created for 2014

- Focused on areas of emerging statewide and global significant
- Capitalize on areas of strength, create new collaborative opportunities for existing faculty
- Reach across traditional academic boundaries
- 70% funded by Office of the Senior Vice President for Academic Affairs and the Provost,
- 30% split between participating departments
- Schools and colleges invited to submit proposals
- Reviewed by a committee selected by Provost's office

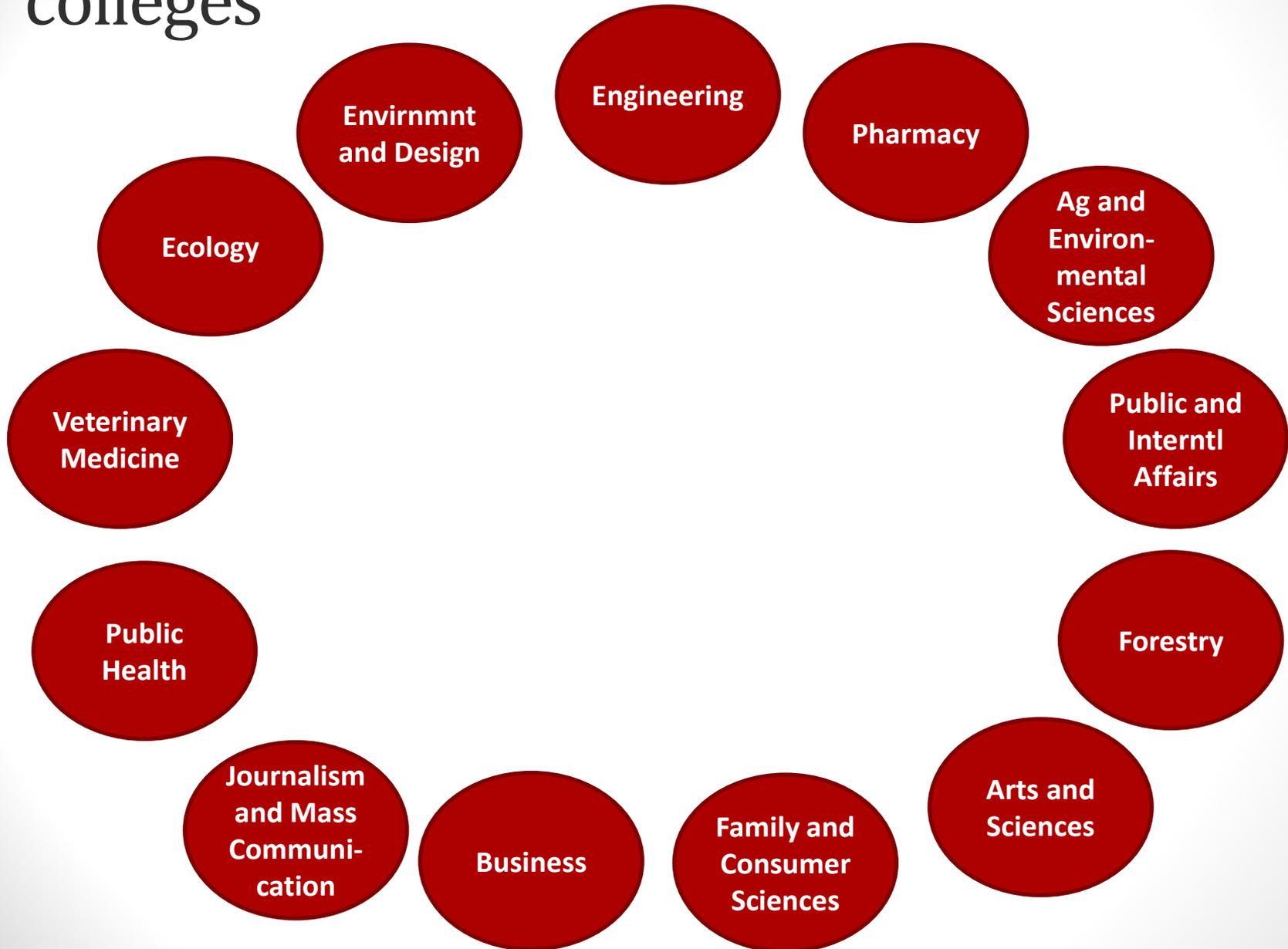
Interdisciplinary Faculty Positions

- Biological imaging and brain mapping: **Computer Science + Cellular Biology**
- Classical rhetoric: **Classics + Communication Studies** (Arts and Sciences)
- Digital arts: **Telecommunications** (Journalism and Mass Communication) + **Theatre and Film Studies** (Arts and Sciences);
- Digital humanities: College of **Environment and Design + History** (College of Arts and Sciences)
- Emerging infectious diseases and vector ecology: **Infectious diseases and pathology** (Veterinary Medicine) + School of **Ecology**
- Fiber and polymer science: College of **Engineering + Textiles, Merchandising and Interiors** (Family and Consumer Sciences)
- Food for public health and wellness: **Food science and technology** (Ag and Environmental Sciences) + **Environmental Health Science** (Public Health)
- Health policy: **Public administration and policy** (Public and International Affairs) + **Health Policy and Management** (Public Health)

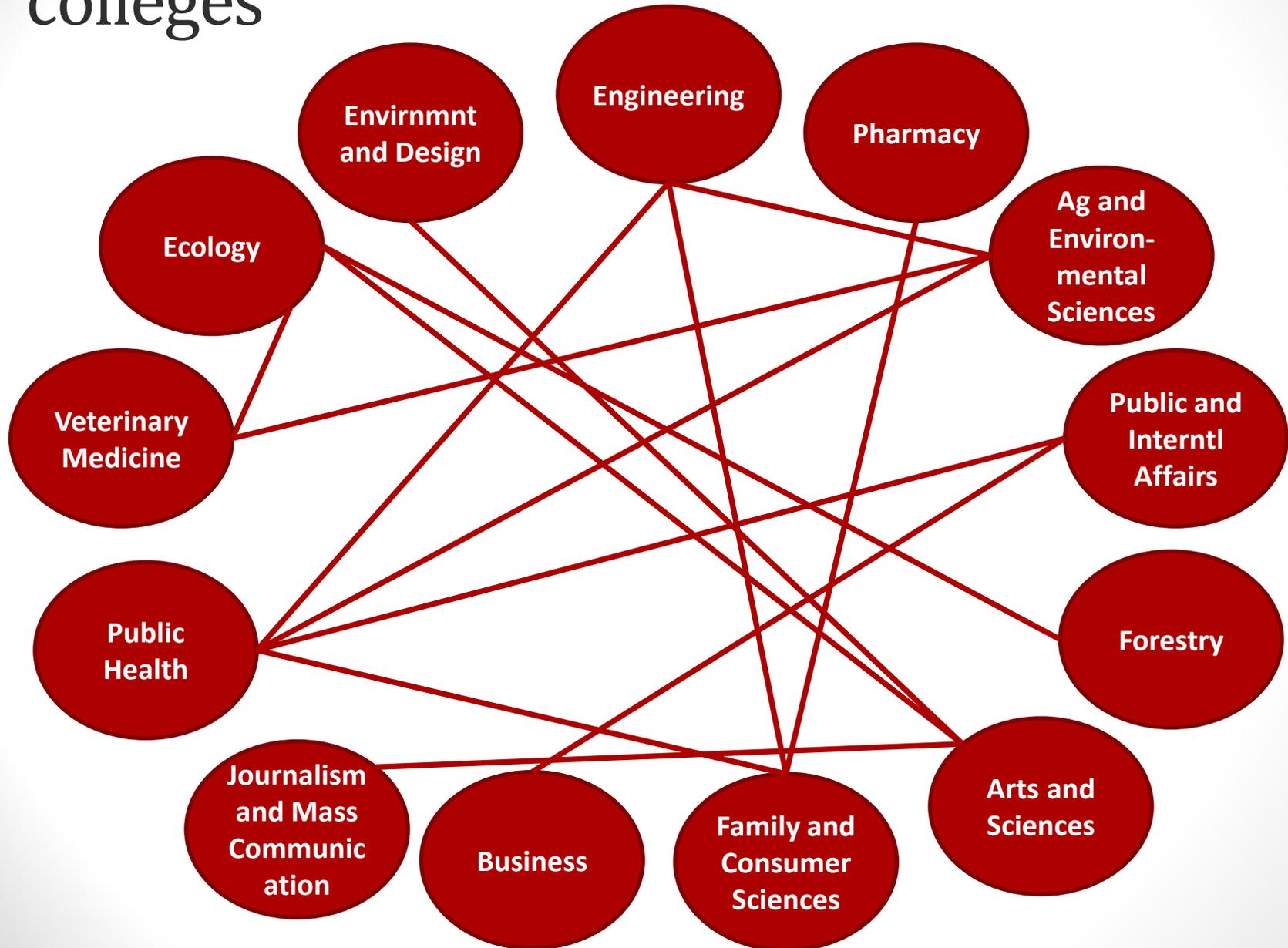
UGA Interdisciplinary Faculty Positions

- Housing for older adults: Institute of **Gerontology** (Public Health) + **Housing and Consumer Economics** (Family and Consumer Sciences)
- International political economy: **Economics** (Business) + **International Affairs** (Public and International Affairs)
- Mobile health computing technology: College of **Engineering** + **Epidemiology and Biostatistics** (College of Public Health)
- Molecular ecology and global change: School of **Ecology** + **Genetics** (Arts and Sciences)
- Multidisciplinary patient health education: **Clinical and Administrative Pharmacy** (Pharmacy) + **Foods and Nutrition** (Family and Consumer Sciences)
- Paleoenvironmental reconstruction: **Anthropology** (Arts and Sciences) + **Geography** (Arts and Sciences)
- Poultry health and production: **Poultry Science** (Agricultural and Environmental Sciences) + **Population Health** (Veterinary Medicine)
- Sustainability science and renewable energy: School of **Forestry and Natural Resources** + **Savannah River Ecology Lab**.

Building links between departments and colleges



Building links between departments and colleges



THIS IS AN INTERDISCIPLINARY PROGRAM
IN WHICH PHYSICS STUDENTS TRY TO HIT
PSYCHOLOGY STUDENTS WITH PENDULUMS.



Anthropology + Geography

Dr. Suzanne Pilaar Birch



Studies human adaptation and resilience to climate change and natural resource unpredictability in prehistory

- How understanding past human response to environmental change informs current thinking about these issues
- Combines archeology with biogeochemistry to investigate changes in diet, mobility, and settlement systems in the period spanning the end of the last ice age to the arrival of farming

Contributions of interdisciplinary position:

- Able to blend longer term perspectives (thanks to the archaeology) into geography courses
- Able to discuss spatial variation in more depth in anthropology courses.
- Access to resources of both departments:
 - E.g. masters student interested in linking ancient environmental/landscape change with the archaeological record
- Working on large joint NSF proposals in both departments – not likely without joint appointment

Historical Preservation (Environment and Design) + History



Dr. Scott Nesbitt

Explores the intersection between digital tools and humanistic questions, particularly questions touching on the history and spaces of the American South.

Contributions of interdisciplinary position:

- In historic preservation, has been able to carve out a niche that expands the offerings of the historic preservation program:
 - interpretation of southern historical sites and cultural landscapes.
 - how changing technologies affect historic preservation practice.
- In history, has built a program that bolsters an emerging strength of the History department--digital & computational methods.
- Historical Preservation: Work in historical data and interpretation is a draw for students coming from a background in history
- Has opened opportunities for interdisciplinary design solutions by partnering with landscape architects and planners.

Population Health (Vet Med) + Poultry Sciences (Ag and Environmental Sciences)

Dr. Brian Jordan



- Interested in understanding the outcome of vaccination against respiratory diseases in poultry
- Investigating areas where current vaccination programs can be altered to make the process more efficient and effective

Contributions of interdisciplinary position:

- Background in agriculture, biotechnology and poultry science has provided a wider range of experiences to pass along to students.
- Field of avian disease biotechnology is desperately looking for qualified and trained undergrad/master's students to fill positions.
 - Animal health companies – Merial, Merck, Pfizer, etc. want candidates with animal science backgrounds but who also have an understanding of molecular techniques
- Fills a gap in understanding of the interaction between poultry science (production) and poultry disease
 - Background in both fields provides experience to design proper experiments to address this interaction
 - E.g. relationship between air quality in a poultry house and the onset of respiratory disease in commercial poultry.

Computer Science + Cell Biology

Dr. Shannon Quinn



- Works at the intersection of machine learning, computer vision, distributed computing, translational medicine, and public health
- Investigates how large-scale spectral graph analytics can be a tool for knowledge discovery.

Contributions of interdisciplinary position:

- Awareness of the backgrounds students in each department → can offer courses tailored very specifically to filling in needed core concepts to bring students from either program to the same level
- Higher-level perspective of both fields, which helps in painting the broader picture for the students when mentoring
- Research is unique within the departments; it has not been very difficult to carve out a niche in terms of expertise and become the "go-to" researcher for certain areas.
 - Facilitates grant proposals, both internally (very little overlap with other researchers at UGA) and externally (federal agencies, e.g. NIH and NSF, are increasingly favoring interdisciplinary grants)
- Provides additional freedom to explore novel ideas

Engineering + Epidemiology and Biostatistics (Public Health)

Dr. Melissa Hallow

- Quantitative systems pharmacology: using mathematical models to understand the behavior of physiological systems and the response to therapies
- Interactive mobile health tools that utilize patient-specific data and scenario testing/gamification to encourage adherence

Contribution of Interdisciplinary Position:

- Interdisciplinary research projects reach across epidemiology + engineering, plus other fields
- Experience working in an interdisciplinary group and on complex teams in industry informs teaching and mentoring
- Course design: Pharmacometrics course will draw from engineering, epidemiology and biostatistics, and pharmacy (and possibly other programs)
- Working between colleges to plan a certificate program in clinical trials and analysis
- Relationships with faculty in both colleges/departments allows us to facilitate connections and opportunities, not just for our own research, but for other faculty members and for our students.
- Greater competitiveness for grants that require interdisciplinary approaches

Challenges of interdisciplinary faculty positions

- Identifying the right candidates
- Promotion and tenure processes have to be arranged, can create some anxiety
- Interdisciplinary hires may face competing expectations of multiple academic communities
- Increased faculty meetings and administrative work
- Defining who we are:
 - LOOOOOONG job titles
 - Avoiding the jack-of-all-trades, master-of-none perception
 - Overcoming intellectual bias