UGA’s New College of Engineering: Building Trusted Industry Relationships

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UGA Today

- 1st state-chartered university
- 36,000 Students
- 1750+ Research Faculty
- 17 Colleges and Schools
- A Top 20 public U.S. university (USNWR)
- $400 million in annual research expenditures
- Includes several professional schools
  - Veterinary Medicine, Pharmacy, Law, Business
- New schools
  - Public Health, Medicine, Engineering
Top 5
New products launched for the 3rd consecutive year among U.S. universities

Top 10
Licenses & options for the 9th consecutive year among U.S. universities

Top 20
Licensing revenue for the 12th consecutive year among public universities

- Ranked as the most efficient university in the U.S. at capitalizing on faculty research activity *(StatNews, 2015)*

Data compiled by the Association of University Technology Managers (AUTM), the National Academy of Inventors, and the Intellectual Property Owners Association.
The Engineering Dimension

**Opportunity:** Addition of a Comprehensive Engineering College to a Leading Land Grant University

- Organize to address barriers, serve 21st Century land grant mission

Grow Engineering as a Nexus for Partnerships with Industry, Achieving Impact

- Build on Institutional Strengths
- Expand existing Corporate relationships through engineering
- Grow new relationships not previously possible
The UGA College of Engineering

- **8** B.S. Degrees
  - BS Agricultural
  - BS Biochemical
  - BS Biological
  - BS Civil
  - BS Computer Systems
  - BS Electrical
  - BS Environmental
  - BS Mechanical

- **5** M.S. Degrees
  - MS Agricultural
  - MS Biochemical
  - MS Biological
  - MS Environmental
  - MS Engineering
  - ECE Emphasis
  - ME Emphasis
  - Civil Emphasis
  - Dual Degrees, Certificates

- **2** Ph.D. Degrees
  - PhD Biological and Agricultural
  - PhD Engineering with Disciplinary and Specialty emphasis areas

- ~400 Students in Fall 2011
- ~1,900 Students in Fall 2016

Formed in 2012
Growing Faculty Team, Research Enterprise

Since the college’s formation:

• 64 Faculty of which 53 are Tenure-Track
• 33% Growth in Tenure Track Faculty
• 1 PCASE Awardee
• 6 CAREER Awardees

• 3X Growth in Awards
• 2.5X expenditure growth
• 66% Federal
• 22% Industry
Improved Quality of Life through Sustainable System Advances

Human Wellness, Cognition & Learning

Quality of Life

Sustainable Design

Material, Device & Cyber Tools

Secure, Resilient & Sustainable Systems

Engineering Research Challenge Clusters
Improved Quality of Life through Sustainable System Advances

Leveraging our Land Grant Depth & Breadth
Improved Quality of Life through Sustainable System Advances

Focus Efforts through New Institutes

- Engineering Education Transformation Institute (EETI)
- Institute for Resilient Infrastructure Systems (IRIS)
- New Materials Institute (NMI)
- Georgia Informatics Institutes (GII)

Industry, government and non-profit partnerships are an integral part of achieving the mission of each.
Foundation: A Strategic Portfolio of Trusted Corporate Relationships

- Establish Trust through predictable delivery of value
- Build the culture and support structure to assure value is delivered
  - Create a deliverable-oriented program management interface to the foci of research strengths

- New research and education dimensions
- Student recruitment and placement
- POC leveraging for new funding
- Ready partners for translation

Value to Industry

- High value research projects
- Competitive IP Position
- Pre-publication research access
- Access to students & facilities
Our approach has been to provide **solutions** for industry

- Understanding what problem they want to solve – and who on campus can best address it?
  - ENG Innovation and Discovery Clusters
  - Craft solutions drawing on Land-Grant Strength
  - Integrated view of UGA capabilities

- Determine what type of solution is needed – and how to best structure a collaboration and agreements to achieve the desired output.
  - Basic research
  - Technology development
  - Core capabilities
  - Technology licensing
  - Start-up and commercialization
Discovery and Innovation Partnerships

- New Joint appointment between Office of Research and College of Engineering in ‘16
  - Accountability for looking across the University for opportunities
  - Enhanced focus on College of Engineering

- Ultimate goal is to Increase industry-funded research across the University, with specific efforts toward
  - Strategic partnerships
  - Interdisciplinary projects leveraging engineering

- Focus on building the UGA Innovation Brand
  - Externally – be the innovation partner of choice
  - Internally – drive a culture of innovation. This includes working with faculty as well as evaluating our UGA systems and processes.
Crystal Leach
Director Discovery and Innovation Partnerships

Mix of technical degree and industrial experience facilitates engagement with all parties – can effectively “translate” needed information and cultural norms

- B.S. Chemical Engineering
- M.S. Bioengineering
- Ph.D. Textiles & Polymer Science

Kimberly-Clark, Research Scientist
Kimberly-Clark, Research Director
The New Materials Institute creates practical solutions for a growing world. NMI takes a systems approach to the challenges of design and disposal of new products and materials. Its goal is the development of new materials guided by green engineering principles: the design and use of processes and products in a way that minimizes pollution, promotes sustainability and protects human health - without sacrificing economic viability and efficiency.
Building the NMI Value Proposition

UGA Land-Grant Breadth,
Complex Cabohydrate Res. Ctr.,
Core Facilities ...

UGA Faculty

Industry

Government

Nonprofits

University Partners

New Materials Institute (NMI)

- Membership
- AFFOA NNMI
- CB2 IUCRC

Partnerships addressing key challenges

• Proof of Concept projects
• Scale up Assessments

UGA Innovation Gateway
UGA Accelerator
NSF I-Corps Site
New Materials Innovation Center
i6 Award
Critical that everyone understand that university-industry partnerships are multi-faceted, mutually beneficial, long-term relationships...

- **U-I partnerships are a significant investment of resources**
  - Developing a strategic plan is critical
  - Align resources to maximize effectiveness
  - Utilize federal programs to help build partnerships
    - Build One-on-One relationships into Sector Cooperatives

- **Adopt a “customer-focused” approach**
  - First understand the needs – industry and faculty
  - Tailor programs and partnerships to match
  - Be “easy to do business with” .... really

- **Leverage existing resources to accelerate growth**
  - External groups to identify partners and build connections
  - UGA success stories
We are building an *organizational core competency* in University-Industry partnerships.
Thank you

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