



NC STATE
UNIVERSITY

The Graduate School

**WHAT IF INDUSTRY HAD AN ACTIVE ROLE IN SUPPORTING
ACADEMIC CAREER DEVELOPMENT?**

Rhonda Sutton, Ph.D., Assistant Dean for Professional Development

HOLISTIC



APPROACHES



**Accelerate
to Industry™**
FOUNDED BY
THE NC STATE UNIVERSITY
GRADUATE SCHOOL

ACCESSING TALENT AND IDEAS

- **Accelerate to Industry PLUS (A2i+)**
- **2018 NSF Grant for STEM disciplines**
- **Workforce training for graduate students and postdoctoral scholars**
- **Housed in Graduate School**
- **Expanded to include non-STEM disciplines**
- **Industry partners, government, non-profit**
- **University partners (40) across the U.S.**
- **Six modules; in-person and virtual**



ACCESSING TALENT AND IDEAS

- 1991: Nonwovens Institute established with \$300,000 from state of North Carolina; \$300,000 from NSF; \$300,000 from industry partners: NWI
- Asked industry members: what do you really need?
- Biggest problem industry faces: having students trained correctly
- Students come from chemical engineering, industrial engineering, fiber and polymer science, materials science, mechanical engineering, forest biomaterials, biomedical engineering
- Get a degree but also a graduate certificate in Nonwovens Science and Engineering
- 5 Pillars
 - Graduate education (30 to 50 PhDs at one time); students apply
 - Extensive training, lectures, short courses, annual conference
 - NWI provides services to industry; companies do pilot trials
 - Sponsored projects with research and problem-solving; graduate students are on these projects
 - NWI is also an incubator/non-profit entity that the university owns that can take products to market and add to economic development



THE NONWOVENS INSTITUTE

ACCESSING TALENT AND IDEAS

- 2008: NSF grant funded the Future Renewable Electric Energy Delivery and Management (FREEDM) Systems Engineering Research Center
- FREEDM is one of 5 NSF Engineering Research Centers in the energy, sustainability and infrastructure fields
- FREEDM provides hands-on research experience with power electronics that puts students at the forefront of education and innovation
- Industry members; pay a membership fee (Duke Energy, ABB, Meta, SAS, Eaton, Flexgen, etc.); FREEDM has an on-campus industry liaison
- Industry engages for long-term research and can sponsor research
- Industry recruits for talent (graduate students)
- Graduate students from electrical and computer engineering, materials sciences and other energy-related fields do the work on projects, give presentations, provide updates on progress
- Students also have access to internships, fellowships and cooperative education experiences with industry partners
- 1/3 of graduate students have been hired by one of FREEDM's industry partners



UNIVERSITY AS MEDIATOR AND INSTIGATOR

- NC State's Centennial Campus established in 1984 with a vision for a new kind of research, innovation and public-private partnership campus
- Unites NC State University students and faculty, national and international partners, and the wider communities of Raleigh, the Research Triangle and North Carolina
- 70+ industry, government and non-profit partners
- 75 university centers, institutes and departments
- 190+ companies launched
- Focus on developing and sustaining partnerships; providing talent, resources and spaces; research and problem-solving

