Academic Career Mentoring Workshop

“Launching a Successful Research Program”

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Research

- **Research:** “concentrated study” that contributes new knowledge, understanding, and discovery
  - Seeks answers to difficult questions: What is (is not) possible?
  - Seeks discovery of new knowledge and insights in addition to broad, deep understanding and/or creative application of those discoveries
    - theories, methods, algorithms, designs, technologies, techniques
  - Far-reaching scope in both time horizon and space of exploration
    - goes beyond high-end development (which typically looks out only a few years and has a well-constrained design space with fewer, less complex tradeoffs)
  - Provides basis and foundation for new innovations, new inventions ...
  - Hallmark: SOS—sustained, original, significant work
    - Understand problem, gain awareness of other proposed solutions (assumptions, benefits, limitations), propose new idea(s), formulate plan of attack, evaluate effectiveness, document/disseminate results
Panel Objectives

Provide guidance on

- identifying promising research directions
- recruiting and mentoring student researchers (UG, Grad)
- establishing a research program that can thrive
Discussion Questions

• What are the A-B-C’s of identifying and defining a focused scope of promising research ideas and directions?
• How best to invest start-up funds and get positioned to acquire more funds for building a productive research lab?
• What are good ways of attracting/recruiting excellent students (UGs and Grads) highly capable of doing research?
• How should one go about training and mentoring students to acquire the diverse skill-set needed to carry out research and contribute to a well-functioning research team?
• How best to adapt to unexpected hurdles, or twists and turns, in developing a new research program?

* Share a personal story and provide tips or lessons learned (advantages and disadvantages) from past experiences
Panelists

• Jeanine Cook, Associate Professor, Klipsch School of Electrical and Computer Engineering, New Mexico State University, and Principal Member Technical Staff, Sandia National Labs

• Charles Isbell, Professor and Senior Associate Dean, College of Computing, Georgia Tech

• Jose Martinez, Associate Professor, Electrical and Computer Engineering Department, Cornell

• Nayda Santiago, Associate Professor, Electrical and Computer Engineering, University of Puerto Rico, Mayaguez
Panel Format

• **Panelists’ remarks:**
  – responses to panel discussion topic and questions
  – additional tips

• **Open Q&A:**
  – questions from the audience

• **Wrap-up**