IMPLEMENTING CHANGE IN GRADUATE EDUCATION

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North Carolina Central University

- About 8000 students (6200 undergrads, 1800 grads)
- 11 MS Degrees through the College of Arts and Sciences and the College of Behavioral and Social Sciences
- PhD in Integrated Biosciences

New PhD Program in Integrated Biosciences (2012)

- Interdisciplinary program focused on health disparities research
- Breast cancer research partnership with UNC-CH, Duke Cancer Institute, NCCU’s BRITE
- 2 concentrations: biomedical and pharmaceutical sciences
- First 3 graduates in May 2017
Data Enabled Science and Engineering of Atomic Structure (SEAS NSF traineeship, 2016)
  ▪ Collaborative project between NCCU and NC State
  ▪ Interdisciplinary program
  ▪ Bridge to PhD component
  ▪ Advanced statistical methods applied to atomic structure data
Recommendation: *Start Early!*

- **DREAM STEM (undergraduates)**
  - Driving Research, Entrepreneurship & Academics through Mastering STEM

- **Physics & Engineering 3+2 Program (undergraduates)**
  - Dual-degree program with NC State

- **JDC Early College High School (high school students)**

- **DISCUSSION (elementary & middle school students)**
  - Building Diverse and Integrative STEM Continua Using Socio-Environmental Systems In and Out of Neighborhoods
  - NSF INCLUDES Collaborative Project with NC A&T
Recommendations Most Critical to Improving Student Experiences

- Financial support
- Mentoring & Student Well-being (role models and support groups)
- Professional Development (students and faculty)
- Social Engagement (soft skills)
Challenges: Data


▪ “Big Thinking about Big Data,” Berkeley Research, 2016
  “The growing avalanche of data in almost all fields has convinced many educators that a truly literate student should graduate with at least a fundamental understanding of the modern tools of collecting and analyzing big data.” – Wallace Ravven