North Carolina A&T State University
Dr. William Edmonson
Technology Infusion Road Tour - 2017

• North Carolina Agricultural and Technical State University is a Doctoral Research Institution located in Greensboro, NC.

• NC A&T is the largest HBCU with about 11,200 students
  – Approximately 9500 undergraduate enrollment
  – Approximately 1700 graduate students

• University Structure
  – College of Science and Technology
  – College of Engineering
  – College of Health and Human Science
  – College of Humanities, Arts and Social Sciences
  – College of Business and Economics
  – College of Education
  – College of Agriculture and Environmental Science
  – Joint School of Nanoscience and Nanoengineering (with UNCG)
  – College of Graduate Studies
NC A&T Programs and Degrees

• 55 undergraduate degree programs

• 31 masters degree programs

• 9 PhD programs – Mechanical, Electrical, Industrial Engineering, Nanoengineering, Computational Science and Engineering, Computer Science, Energy and Environmental Studies, Leadership Studies, Rehabilitation Counseling and Counselor Education
  – EES includes 3 concentrations:
    • Atmospheric science,
    • Sustainable bioproducts
    • Energy, environmental science and economics
  – Two new PhD programs being established:
    • Bioengineering
    • Food and Animal Science
Sponsored Research - $60M/yr

• Major Federal Sponsors include USDA, NSF, DOD, DOE/NNSA, and NASA

• Only HBCU to be the lead institution in an NSF Engineering Research Center (Biometallic Alloys)

• Examples of recent major awards:
  – $5M DOD grant (Autonomous Flying Systems)
  – $5.3M Army contract (Testing of Autonomous Systems of Systems)
  – $5M NASA grant (Center for Aviation Safety)

NC A&T has a long history of performing sponsored research via grants and contracts from both government and industry sponsors – well established processes, experienced investigators
Contacts at NC A&T State University

- For more information: see www.ncat.edu

- Point of Contact – Dr. Barry L. Burks, Vice Chancellor for Research and Economic Development, blburks@ncat.edu, 336-334-7314

- NC A&T was one of the founding members of the National Institute of Aerospace located in Hampton, VA. NIA supports NASA through a Cooperative Agreement with NASA LaRC
  - Presenter: Dr. William Edmonson, NC A&T Department of Electrical Engineering and the NC A&T Langley Professor at NIA, wwedmons@ncat.edu, 757-325-6749
SMALL SATELLITE SYSTEMS RESEARCH

Objective

• Provide multidisciplinary R&D on small satellites through the development of innovative and purposeful technology and systems engineering based on a multi-satellite solutions

Why It Matters

Provides a platform for earth observation that
• Lower spacecraft cost
• Reduced time to market
• 4-D model through a heterogeneous suite of satellites

Recent Accomplishments

• Developed a model-based systems engineering process that is formal, responsive, agile
• Created an interdisciplinary team of scientist and engineers to develop small satellite earth observations and planetary missions
• Developed an inter-satellite communication system that will enable multi-satellite coordinated missions

Participants / Collaborators

• NASA LaRC
• National Institute of Aerospace (NIA)
• Hampton University
• Tuskegee University
• University of Hawa’ii - Mona
• ENSTA ParisTech
• University of Leicester
• Universidad Politecnica de Madrid