



# ERC for Revolutionizing Metallic Biomaterials



## Education Programs

- Nation's first BS + MS Bioengineering @ an HBCU
- Trans-ERC courses (shared by NCAT, Pitt, UC)
- Trans-ERC seminars & workshops

## Trans-ERC-RMB Graduate Courses

### Metallic Alloys for Biological Applications

2014 Spring Course Director: Dr. Prashant N. Kumta (Pitt)

Campus Directors: Dr. Devasdas Pai (NCAT)

Assessment: Dr. Robin Liles (NCAT), Ms. Courtney Lambeth (NCAT)

Teaching Assistants: Mr. Daeho Hong (Pitt)

Enrollment: 2 UC graduate students, 9 NCAT graduate students

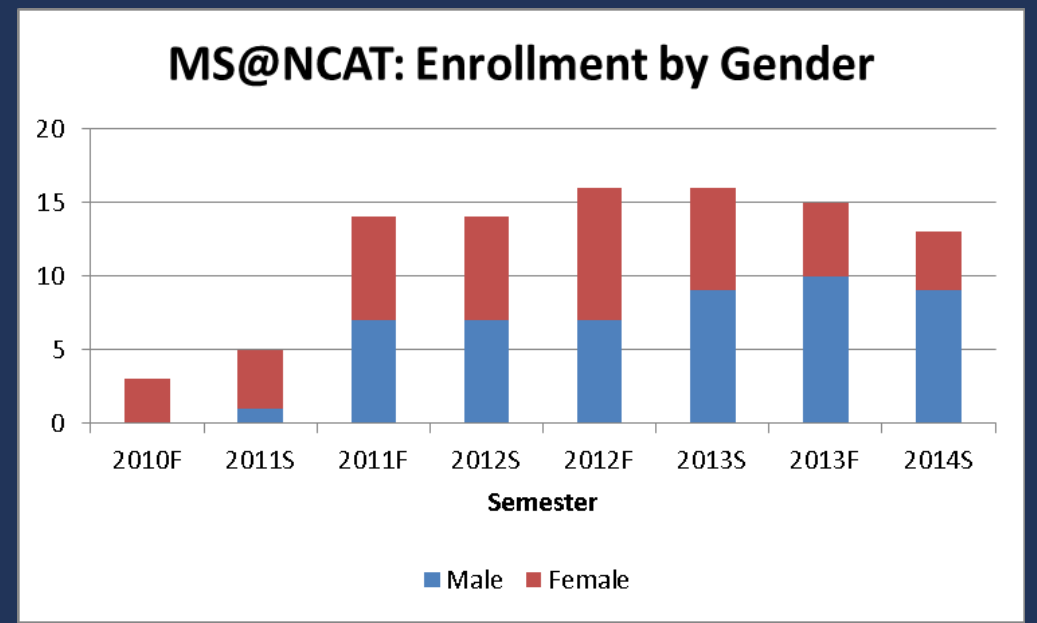
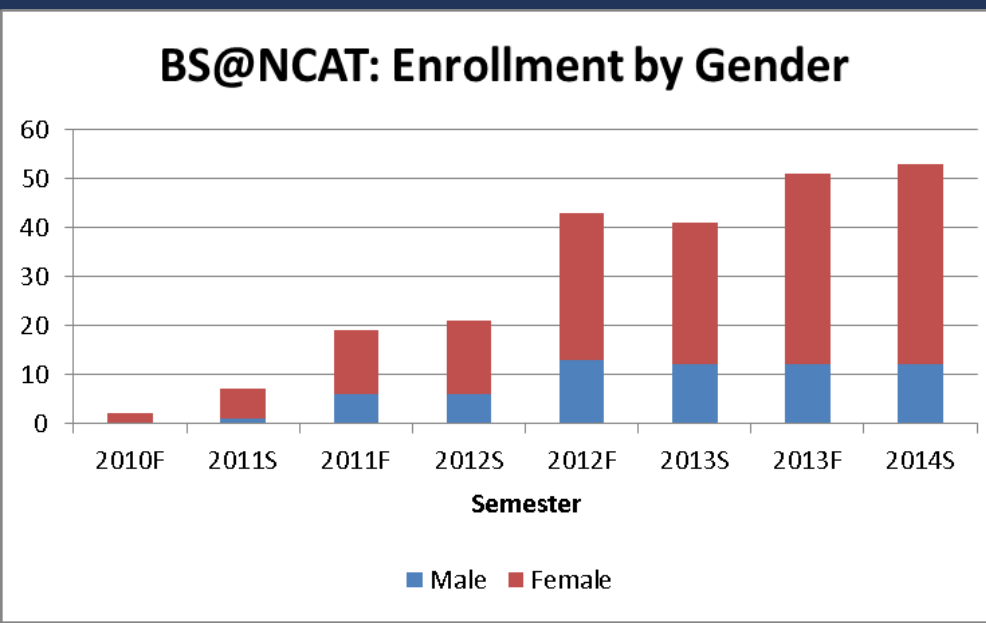
### Biomedical Imaging

Lead: Dr. L. Phillips, (NIH SPIRE Teaching Fellow)

UC Coordinator: Dr. Sarah Pixley (UC)

Enrollment: 9 NCAT students, 2 UC students

Assessment: Dr. Robin Liles, Courtney Lambeth (NCAT)

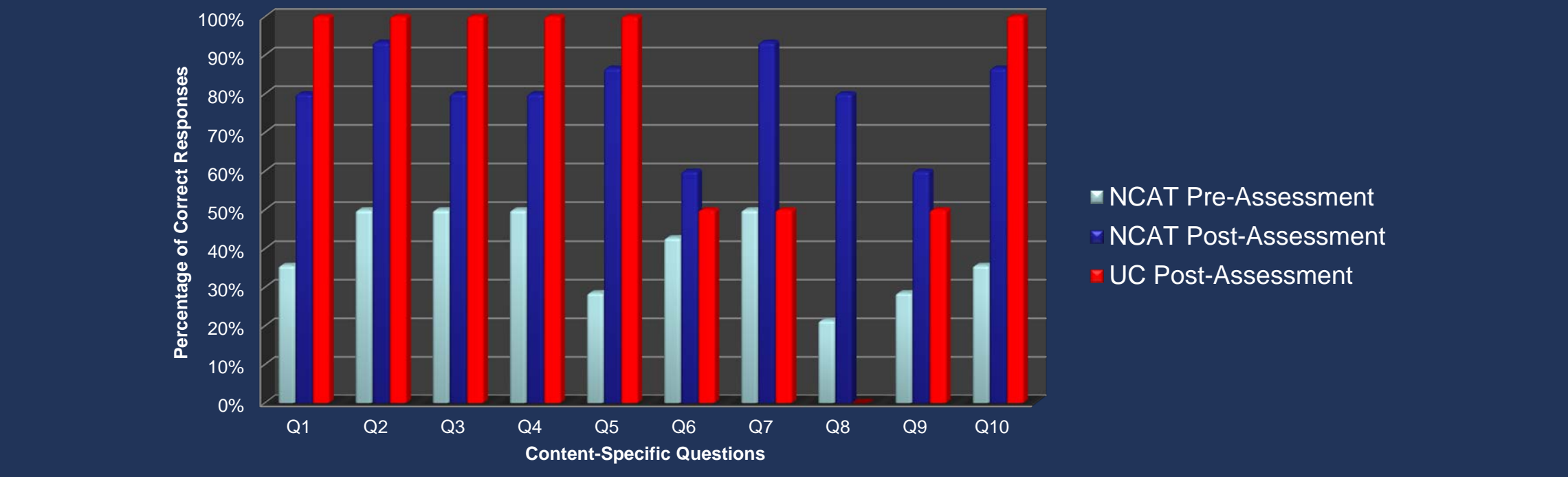


Graduate students recruited from wide geography / diverse institutions:

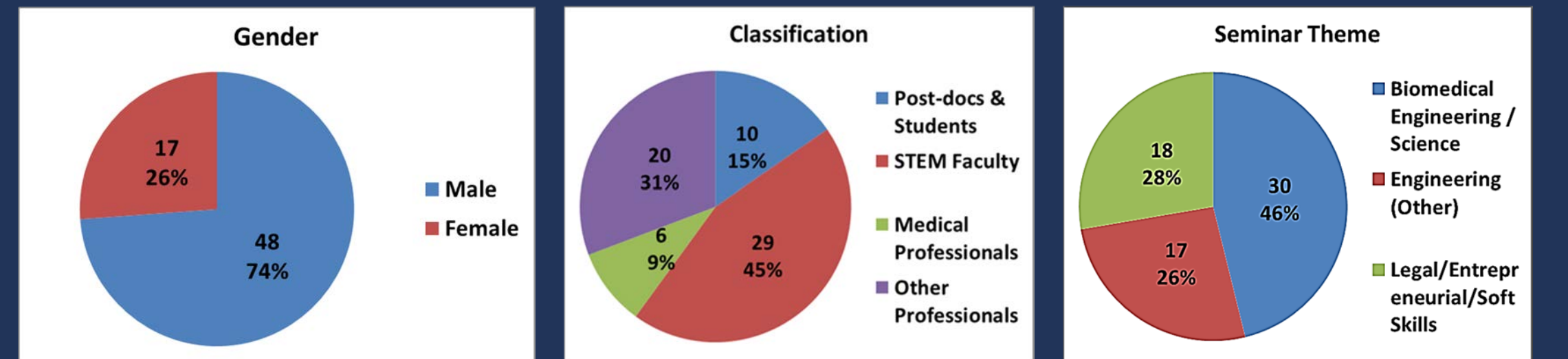
- Forsyth Technical Community College - Nanotechnology
- Ga. Tech - Biomedical Engineering
- UVa. - Biomedical Engineering
- Tuskegee - Biology
- UNC - Charlotte - Mechanical Engineering
- UNC - Greensboro - Biology/Nursing
- Texas A&M - Biomedical Engineering+



## Pre-/Post Assessment of Content Knowledge (BMEN 741)



## ERC Seminar Series Years 04-06: Speaker/Topic Diversity



**SEMINAR:** Friday, February 21, 2014, 11:00 - 11:50 AM, McNair Hall Auditorium

**Engineering Cardiac Arrhythmia Surgery**

**J. Paul Rowsey, BS, BM, PhD, MRCP, FCC**  
Professor of Medicine, Director of Cardiac Electrophysiology and Pacing, University of North Carolina - Chapel Hill

## Student Accomplishments

**1st National Elevator Pitch Competition / Lynn Preston Trophy 2011, Da Tren Chou**

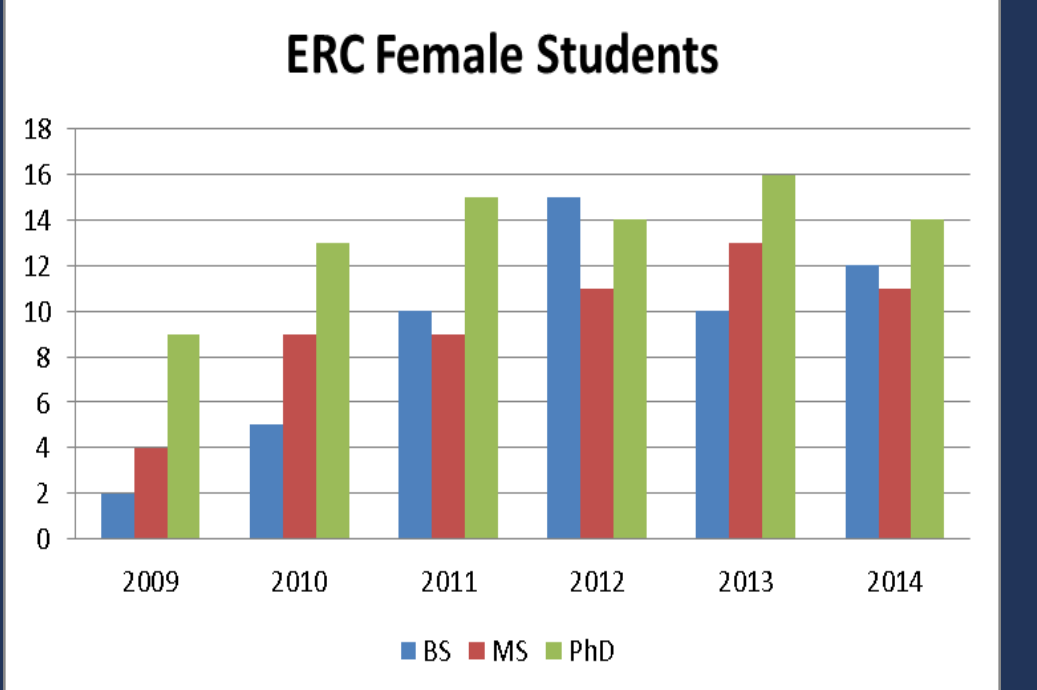
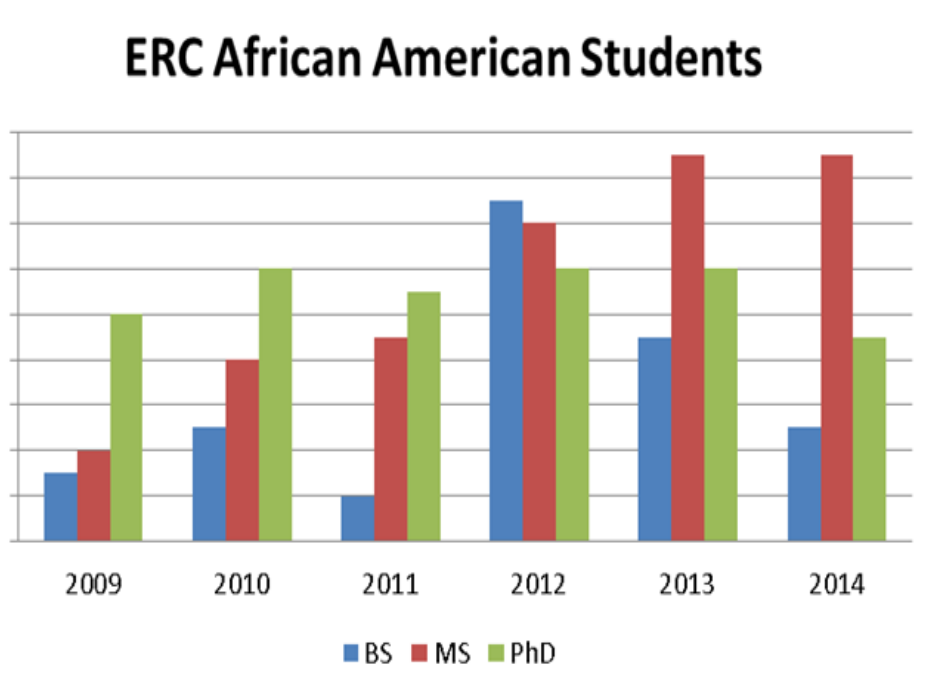
**Amy Chaya 3rd place, Elevator Pitch Competition, 2012**

**1st place: Leon White & Hector Carmona 1st Testbed translation competition, 2012**

**PHC&A 1st Place - RMB's (11/13/14) 1st Amy Chaya, Da-Tren Chou, Andrew Brown, Emily Basara**

**ERC Organizes RMB Seminar Retreat @ UC - March 2014**

## ERC-RMB-wide Student Diversity



## ERC Cross Campus Exchanges / Travel

- NCAT MS Bioengineering Students to PhD program at Pitt
- Student faculty visits among NCAT/Pitt/UC for research interactions, equipment sharing
- Student-organized workshops/retreats rotating among the 3 campuses
- Active student participation at national (ASME, BMES) and international (Biomaterials: Italy, Indonesia) conferences
- Student summer researchers at Hannover Medical School, Germany

**CrossBIT** Hannover Medical School

Workshop on Disruptive Innovation in Healthcare October 14-19, 2012

Venkatesh Balasubramanian, Ph.D.

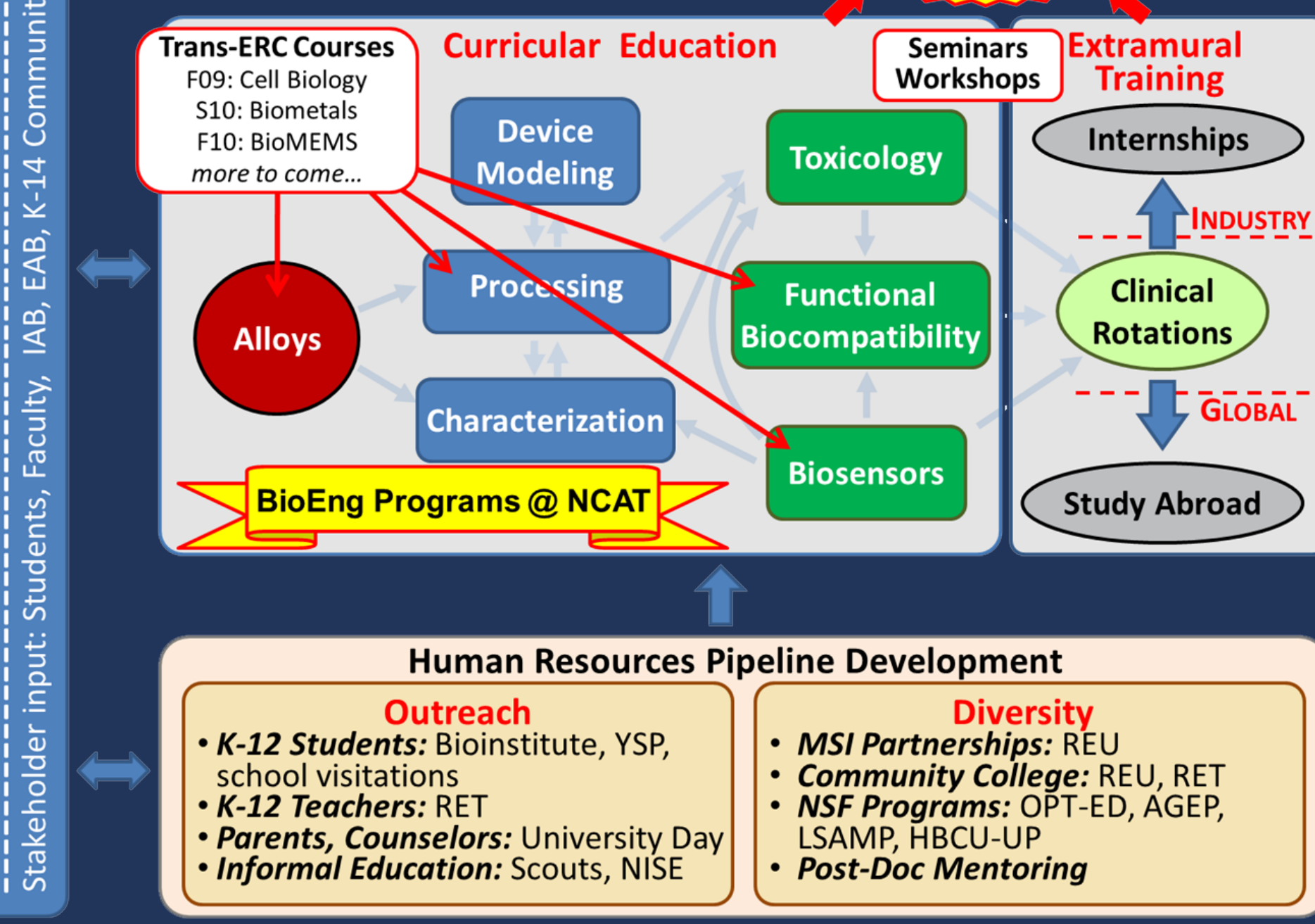
**Healthcare Technology Innovation Centre**

collaborate • innovate • impact

## Education & Outreach Mission

Recruit, educate, nurture and train a diverse, multidisciplinary workforce to be productive, innovative and entrepreneurial team members and leaders

## Education & Outreach Plan



## ERC/BMEN Educational Advisory Board

**Dr. Robert Linsenmeier**, Education Advisory Board Chair, Professor of Biomedical Engineering, Northwestern University Evanston, IL

**Dr. Kevin Conley**, Program Coordinator, Nanotechnology Education, Forsyth Technical Community College, Winston-Salem, NC

**Dr. Phyllis Martin**, Superintendent - Southeastern Region, Guilford County Schools, Greensboro, NC

**Dr. Jameson McCann**, Program Coordinator, Biotechnology & Associate Professor of Biology, Guilford Technical Community College, Greensboro, NC

**Dr. Mark Redfern**, Vice Provost for Research & Senior Associate Professor of Bioengineering, University of Pittsburgh, Pittsburgh, PA

**Dr. John H. Stewart IV**, Vice Chair, Department of General Surgery, Associate Dean for Clinical Research and Innovation - School of Medicine, Wake Forest University, Winston-Salem, NC

**Dr. George Truskey**, Goodson Professor of Biomedical Engineering & Senior Associate Dean for Research, Pratt School of Engineering, Duke University, Durham, NC

**Mr. Leon White**, PhD Student and NCAT Chair, ERC Student Leadership Council, NC A&T State University, Greensboro, NC

**Dr. David B. Williams**, Dean of the College of Engineering, The Ohio State University, Columbus, OH



## Workforce & Pipeline Development

Undergraduates: summer, academic year, veterans

\* 47 total REUs (3 repeats) \* 11 states \* 19 Universities / Community Colleges

**REU Unique Participants: By Gender**

**REU Participants: By Race**

Teachers: summer, academic year, veterans

\* 36 total REUs (11 repeats) \* 11 states \* 18 middle/high schools & community colleges

**RET Unique Participants: By Gender**

**RET Participants: By Race**

Young Scholars: summer

\* 19 total YSs (2 repeats) \* 4 counties \* 12 high schools

**YS Unique Participants: By Gender**

**YS Participants: By Race**

## Camps & Community Outreach: year-round

**National Educators Workshop @NCAT**

**BioInstitute: NCAT-Pitt**

**ASM Materials Course and Modules for Teachers**

**Joint ERC Booth @ SACNAS 10/2014**

## Strategic Recruiting

- Other NSF Programs**
- NC-LSAMP at NCAT
  - Bridges to the Doctorate at NCAT
  - Meyerhoff Program at UMBC
- Among RMB partners**
- NCAT students to Pitt PhD
  - Recruiting from CSULA, EDCC, GTCC
- With UNC sister institutions**
- NIH SPIRE Post-doc visiting faculty from UNC-CH
- With other ERCs at select conferences**
- SACNAS, AISES

