Engineering Research Centers Program
Division of Engineering Education and Centers
National Science Foundation

Engineering Research Centers

Partnerships in Transforming
Research, Education, and Technology --
Linking Discovery to Innovation

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ERCs Build University Cultures that Join Discovery & Innovation in Partnership with Industry

ERC Program Goals

- Create a culture in academe that joins research, education, and innovation
- Build partnerships with industry to strengthen the innovative capacity of the U.S. in a global context
- Produce engineering graduates who are creative and innovative practitioner, more capable of leading teams to advance technology in established firms or leading new firms

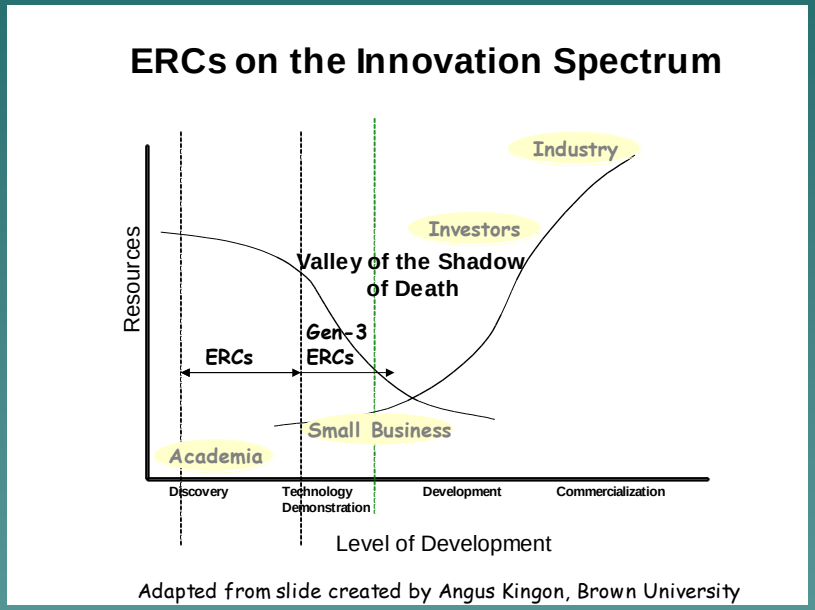
Core Key Features of Gen-2 and Gen-3 ERCs

- Guiding strategic vision for transforming engineered systems and development of a diverse, globally competitive engineering workforce
- Strategic plans for research, education, diversity to realize the vision
- Systems-motivated interdisciplinary research program spanning discovery to engineered systems, enabled by testbeds
- Cross-disciplinary, systems-focused education programs from pre-college to practitioners, produce graduates who can advance technology and speed technology transfer
- Strong partnership with industry/practitioners to speed technology transfer and innovation

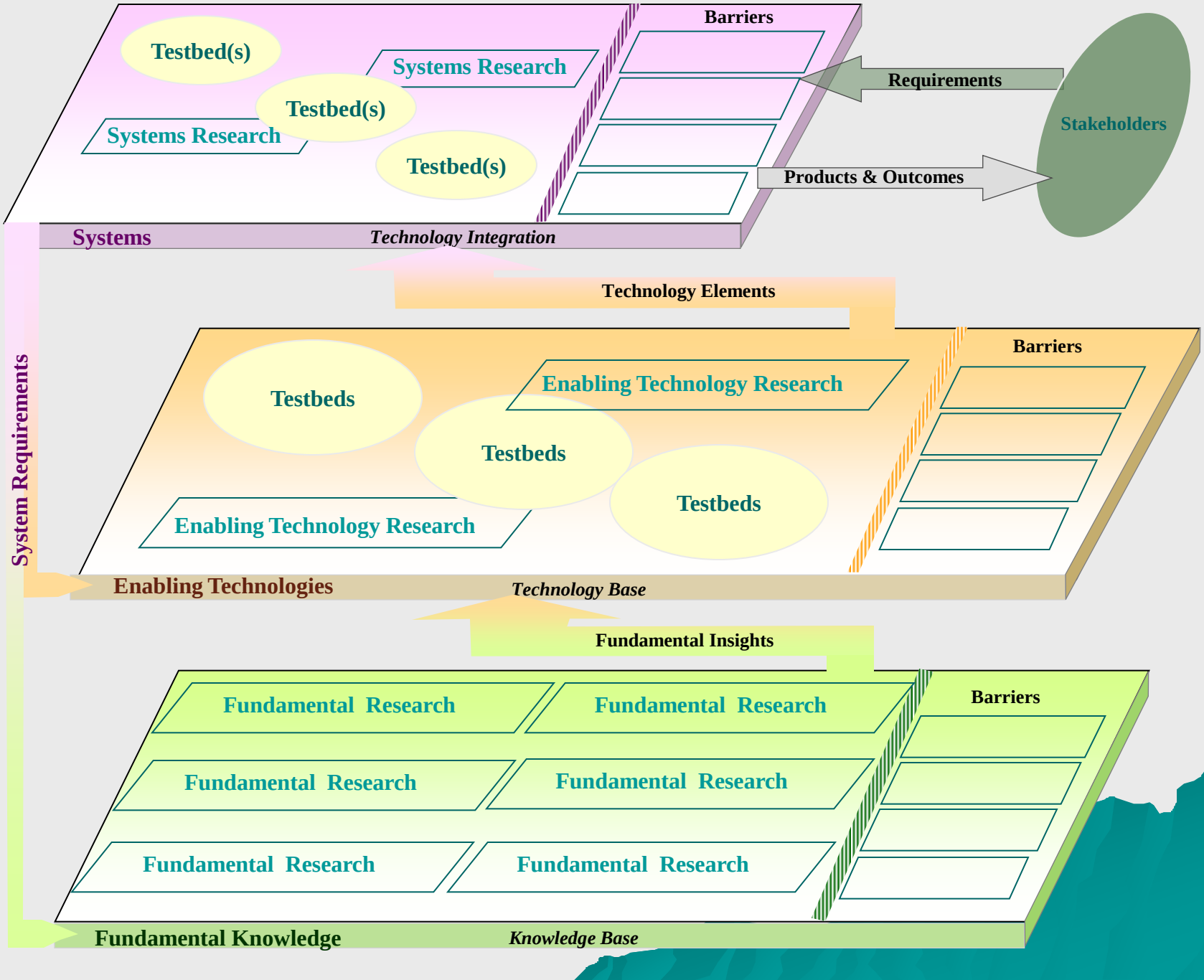
Additional Gen-3ERC Key Features

Gen-3 ERC bridge discovery to innovation by expanding the research culture to:

- Support translational research with small firms.
- Develop more creative & innovative engineers
- Partner with economic development organizations
- Partner with 1-3 foreign universities
- Long-term pre-college partnerships
- Reward mentoring



ERC Strategic Framework:

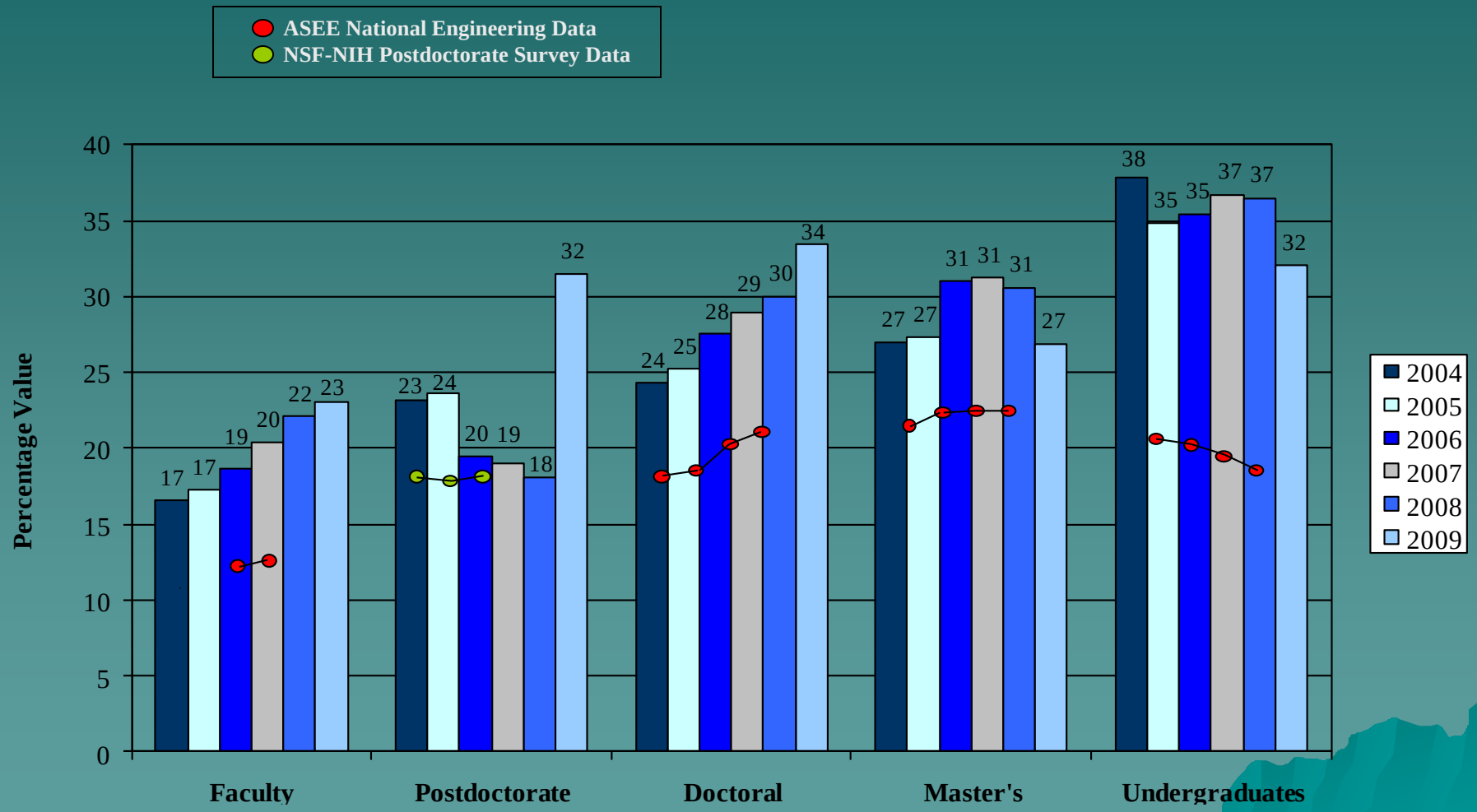


Post-Award Infrastructure Review Criteria,

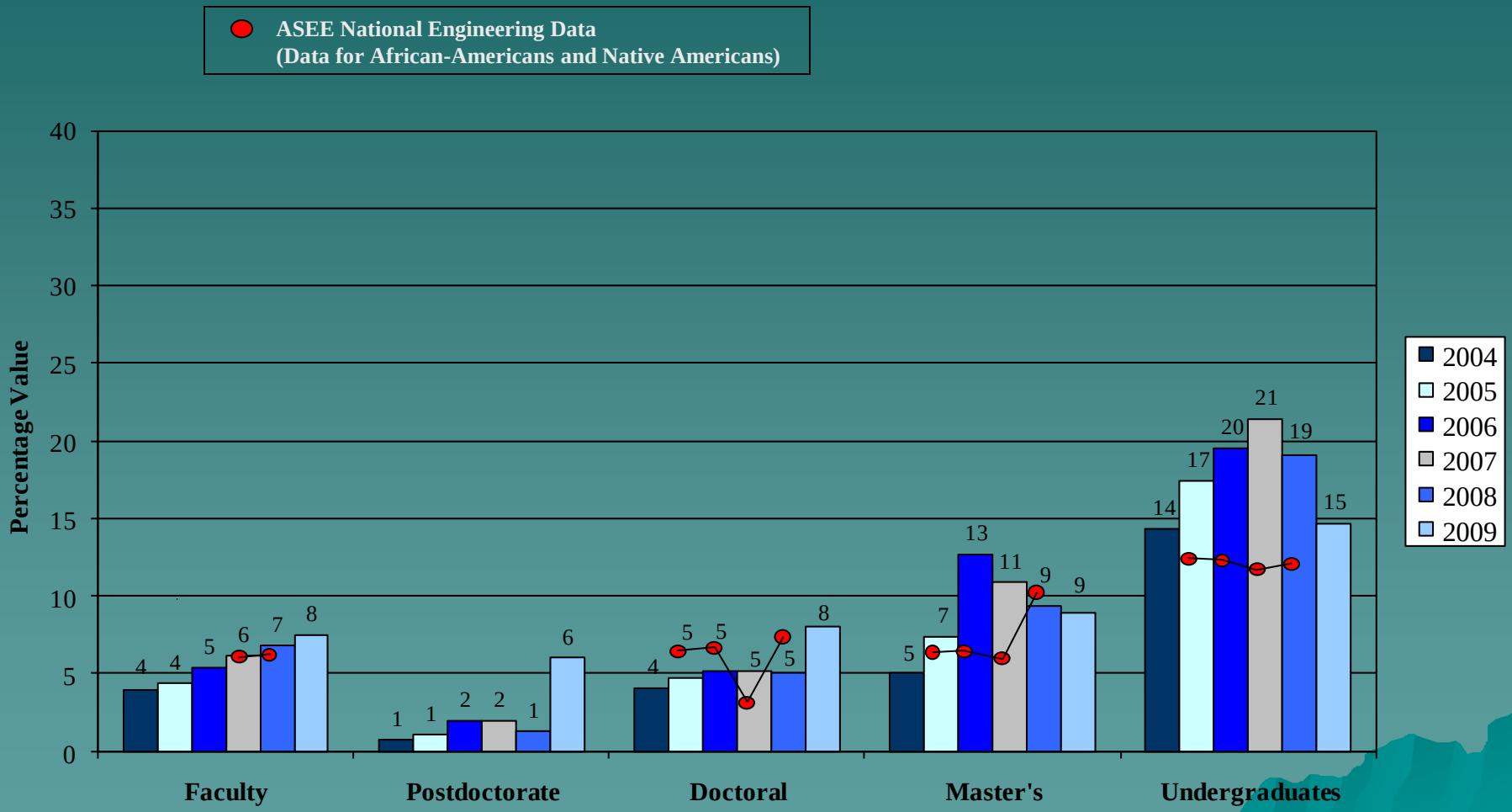
2. Diversity Effort

- **Diversity Strategic Plan**: Strong strategic plan for diversity, benchmarked against national engineering averages, results demonstrate a strong and effective plan. Strong partnership for diversity with partner deans and department chairs.
- **Institutions Serving Large Underrepresented Populations:** As lead, or core partners (Class of 2006 & higher) and affiliate partners
- **Women and Minority Alliances**: Alliances with Louis Stokes Alliance for Minority Participation (LSAMP), and at least one other connection with an Alliance for Graduation Education of the Professoriate (AGEP)
- **Leadership Diversity**: Team of leaders is diverse in gender, race, and ethnicity
- **Diverse Faculty and Student Involvement**: A significant number of women, underrepresented racial and ethnic minorities, and persons with disabilities on the faculty and undergraduate and graduate student teams

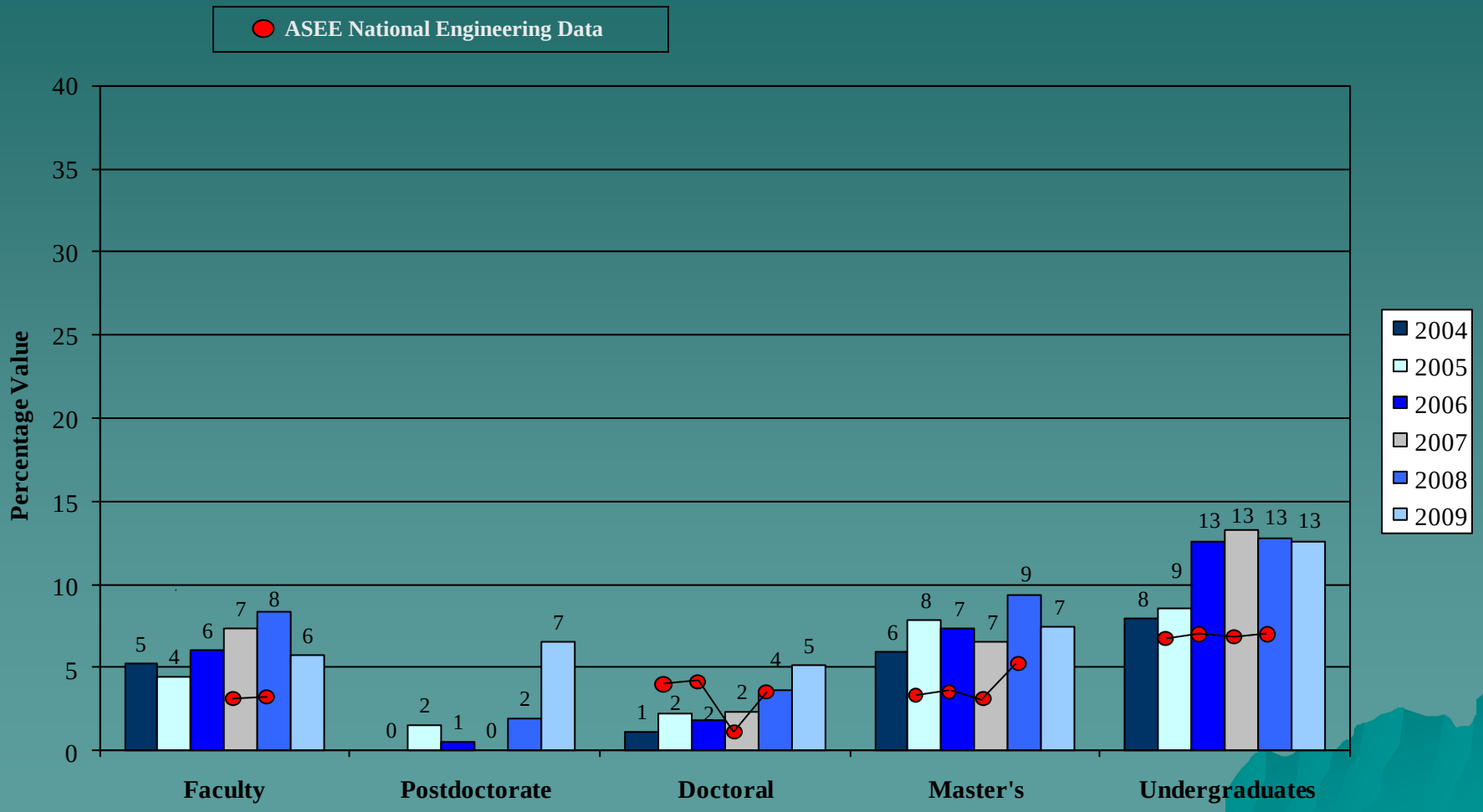
Women in ERCs, FY2004–2009



Underrepresented Racial Minorities in ERCs, FY2004–2009



Hispanics in ERCs
FY 2004–2009

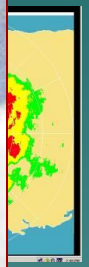


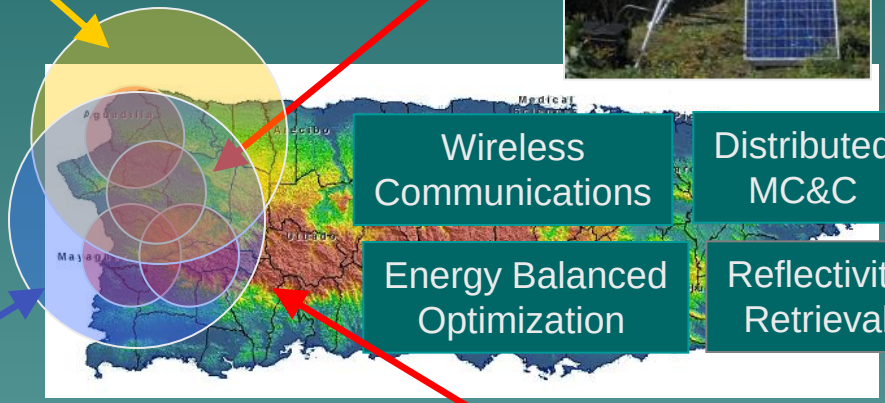
Puerto Rico Student Test Bed -

ERC for Collaborative Adaptive Sensing of the Atmosphere

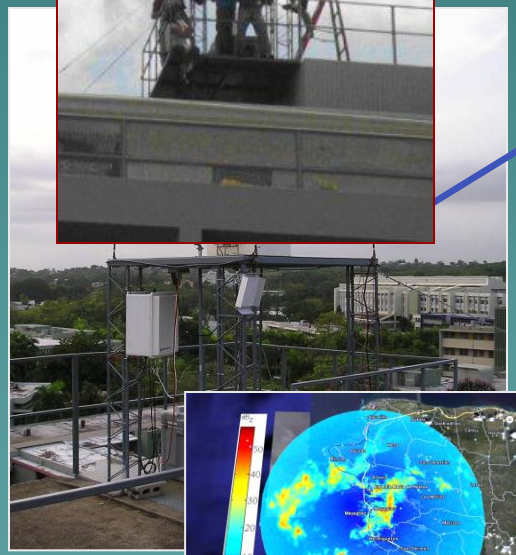
EWR Radar
FCC approved
Operational

Off-the-Grid Radar
Two nodes being tested at UMass (FCC approved)



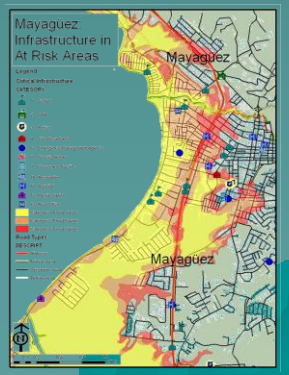


Rain rate estimates



PR1
(Stefani) Radar
FCC approved
Radar operational

OTG siting based on Disaster Vulnerability Model



NSF Engineering Research Center for

Revolutionizing Metallic Biomaterials

North Carolina Agricultural and Technical State University

University of Pittsburgh

University of Cincinnati

MHH Medizinische Hochschule Hannover

GTCC Guilford Technical Community College

Edmonds Community College Every Step of the Way...

California State University Los Angeles

Indian Institute of Technology Madras

Status of NSF 09-545 and the Next ERC Competition

ERC Solicitation NSF 09-545

- Full Proposals Under Review
- Site visits in August and September, 2010
- Award decisions in November, 2010
- Approval of award recommendations in January and February, 2011
- Awards (5-7) in March or April, 2011

Next ERC Solicitation

- Plan to release in April 2011
- Awards in 2013, at least 3