

2008 “*College Conversation*”

Reviewing—
New faculty
New strategic plan
New successes



MONTANA
STATE UNIVERSITY

College of
ENGINEERING

Mountains & Minds

New Faculty Members



Dr. Paul Gannon, Chemical & Biological Engineering

Assistant Professor

PhD Engineering; Montana State University (2007)

Research Interests: materials science and engineering for advanced energy technologies; Gannon has held various R&D positions with Pacific Northwest National Laboratory and Arcomac Surface Engineering, LLC; he collaborates with an international network of scientists and engineers from industry, national labs and academia



Lt. Col. Alison D. Hamilton, Aerospace AFROTC

Commander – Air Force Reserve Officer Training Corps at MSU

MS Atmospheric Science, Colorado State University (1996)

Previous Assignments: weather-related positions at Langley AFB, the Pentagon – serving the White House and the Joint Chiefs of Staff; Offutt AFB, NE; Spangdahlem Air Base, Germany; and Asheville, NC. As Chief of the Space Environment Div. at the Aerospace Data Facility at Buckley AFB, CO, she was the first weather officer in the Center's 37-year history to be Mission Director.

New Faculty Members



Dr. Jeff Heys, Chemical & Biological Engineering

Assistant Professor

PhD Chemical Engineering; University of Colorado-Boulder (2001)

Research Interests: developing advanced mathematical models and numerical analysis to a variety of biological problems including fluid-tissue interaction, porous flow through heterogeneous tissues, inhaled particle deposition, drug delivery, and fluid-hair interaction



Dr. Dan Miller, Civil Engineering

Associate Professor

PhD Engineering; Montana State University (2002)

Research Interests: engineering mechanics with specialization in cold regions; snow metamorphism modeling, snow microstructure and influences on snowpack performance and response, mechanical and thermodynamic snow performance

New Faculty Members



Dr. John Sheppard, Computer Science

Associate Professor and **RightNow Technologies Distinguished Professor in Computer Science**

PhD Computer Science; Johns Hopkins University (1997)

Research Interests: machine learning, data mining, evolutionary computation, Bayesian methods, fault diagnosis and prognosis, and domain ontologies



Dr. Laura Stanley, Mechanical & Industrial Engineering

Assistant Professor

PhD Engineering; Montana State University (2006)

Research Interests: human factors, ergonomics, transportation safety, biomechanics, driving simulation, naturalistic driving, economics, and engineering education

COE Mission

Strategic Planning FAC

- The College of Engineering at MSU will serve the state of Montana and the nation by
 - Fostering lifelong learning
 - Integrating learning and discovery
 - Developing and sharing technical expertise
 - Empowering students to be tomorrow's leaders



MSU COE Vision

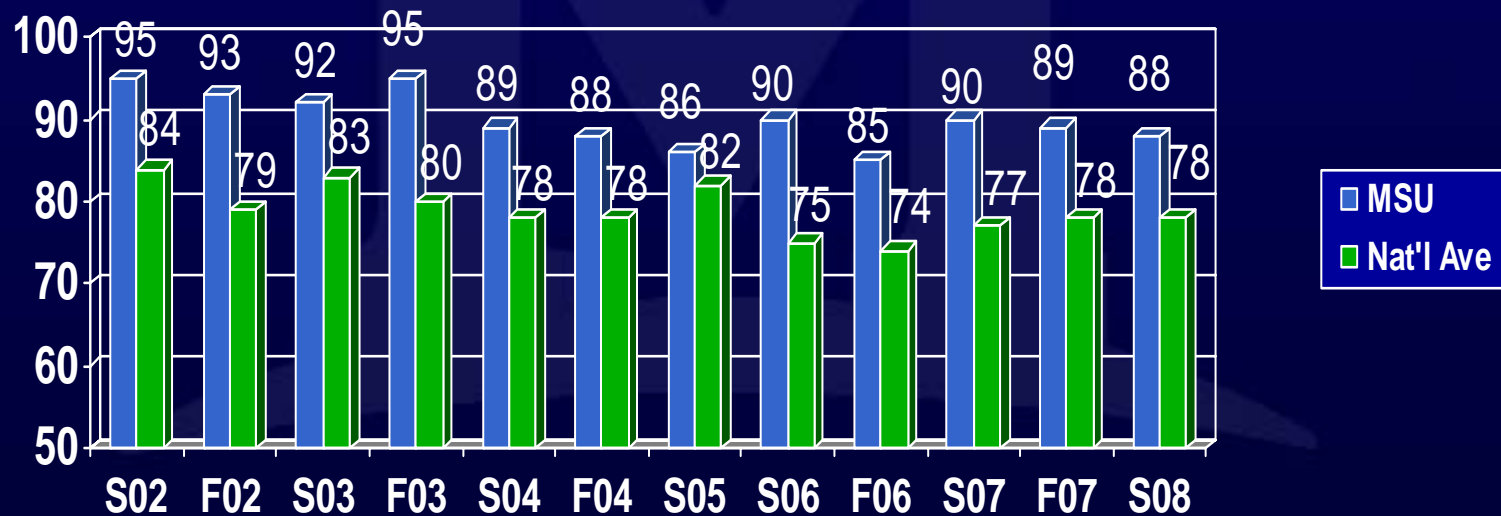
- The COE at MSU will be an outstanding collaborative community that achieves excellence in learning, innovation, discover, and knowledge transfer. To realize this vision, the college will ...
 - Leverage shared interests and talents among faculty and students in order to create knowledge across disciplinary lines.
 - Effectively and efficiently balance breadth with depth in undergraduate education in order to prepare students for the global workforce.
 - Be a leader in innovation and discovery in our identified focus areas.
 - Successfully integrate research and innovation into the learning experience of both undergraduate and graduate students.
 - Be recognized for the level of knowledge transfer to industry, governments, and citizens in the state of Montana.



For example. . .

- Effectively and efficiently balance breadth with depth in undergraduate education in order to prepare students for the global workforce.

FE pass rate in %



For example. . .

- Be a leader in innovation and discovery in our identified focus areas
 - Annual research expenditures in Millions of \$\$



MSU COE Core Values

- Life-long learning
- Knowledge Discovery
- Collaboration
- Inclusiveness
- Professionalism



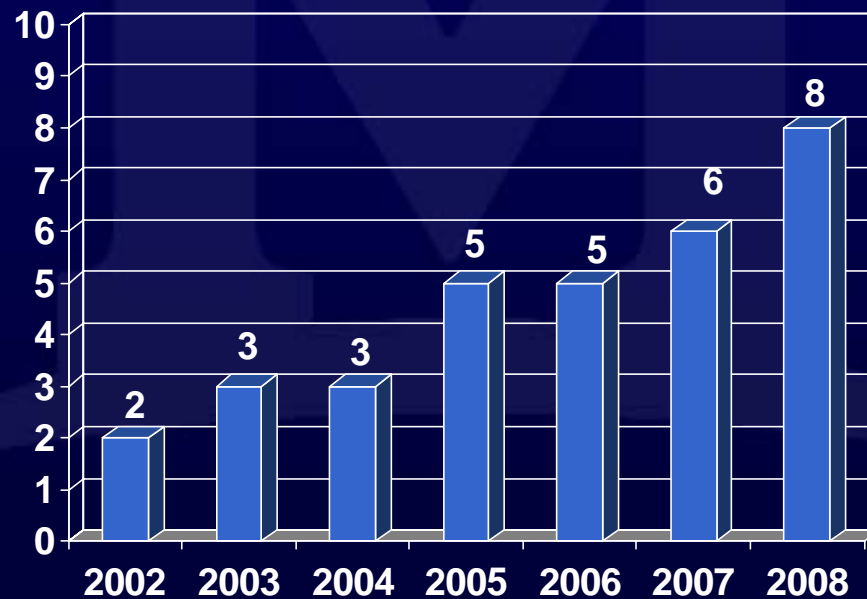
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For example. . .

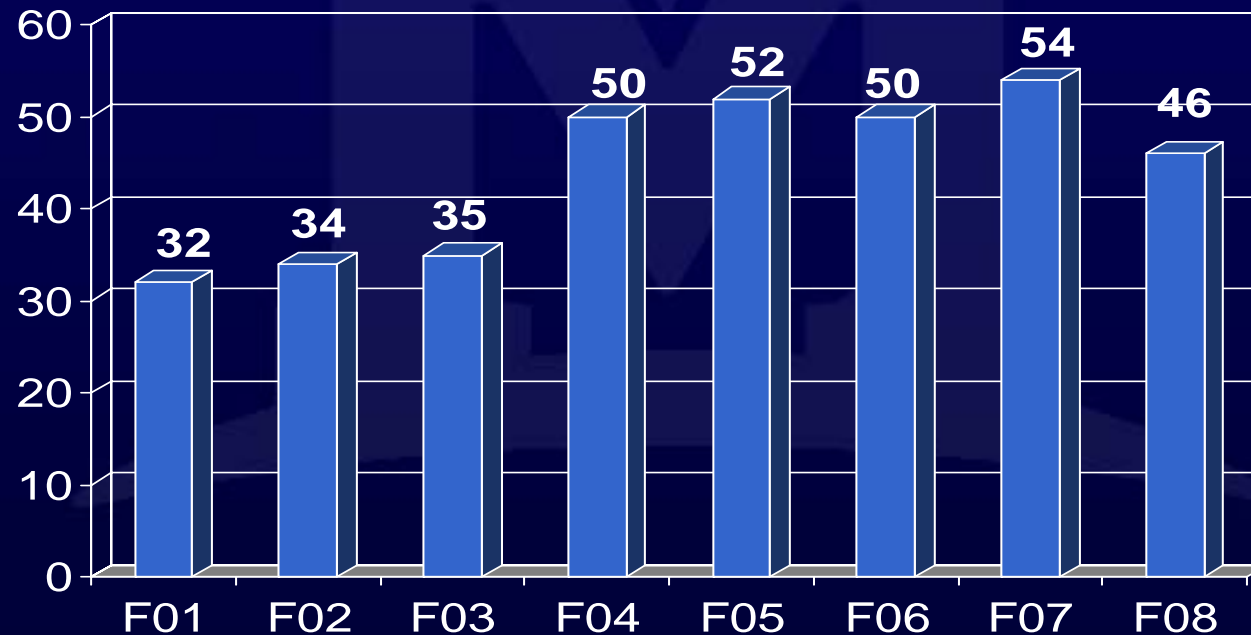
- Inclusiveness
 - Number of tenure-track women faculty in the COE
 - one new female faculty member under contract but begins in '09



For example. . . .

- Inclusiveness

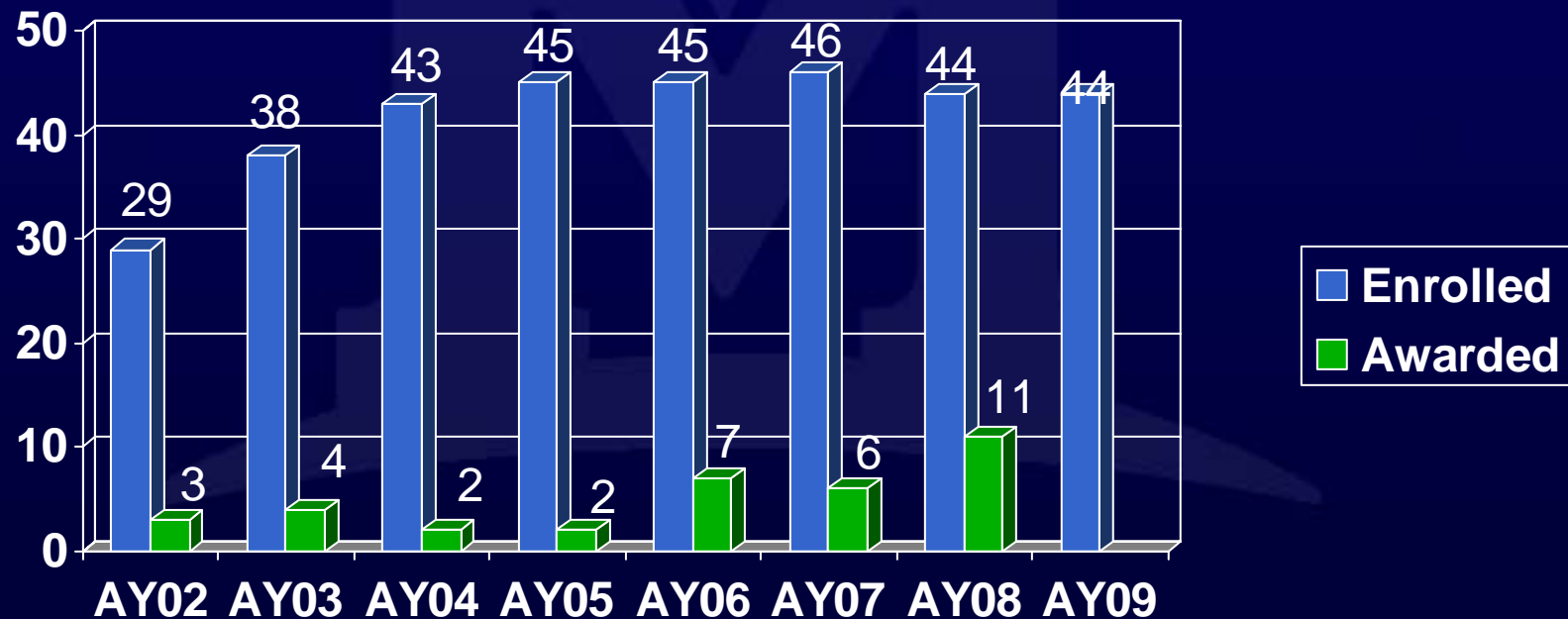
- Number of American Indian students graduated from COE in AY 2008 = 7
- Number of American Indian students enrolled:



For example. . . .

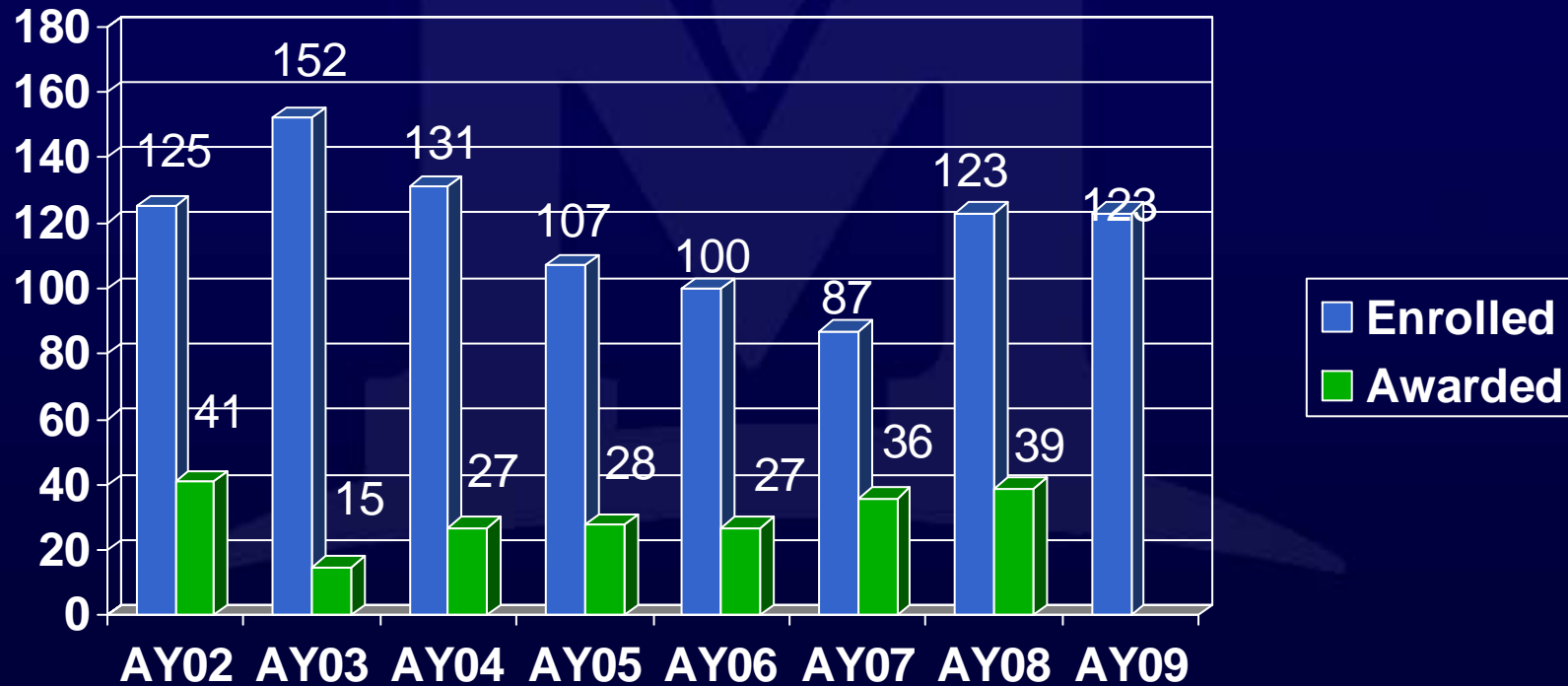
- Knowledge Discovery

PhD students enrolled and degrees awarded



For Example ...

M.S. students enrolled and degrees awarded



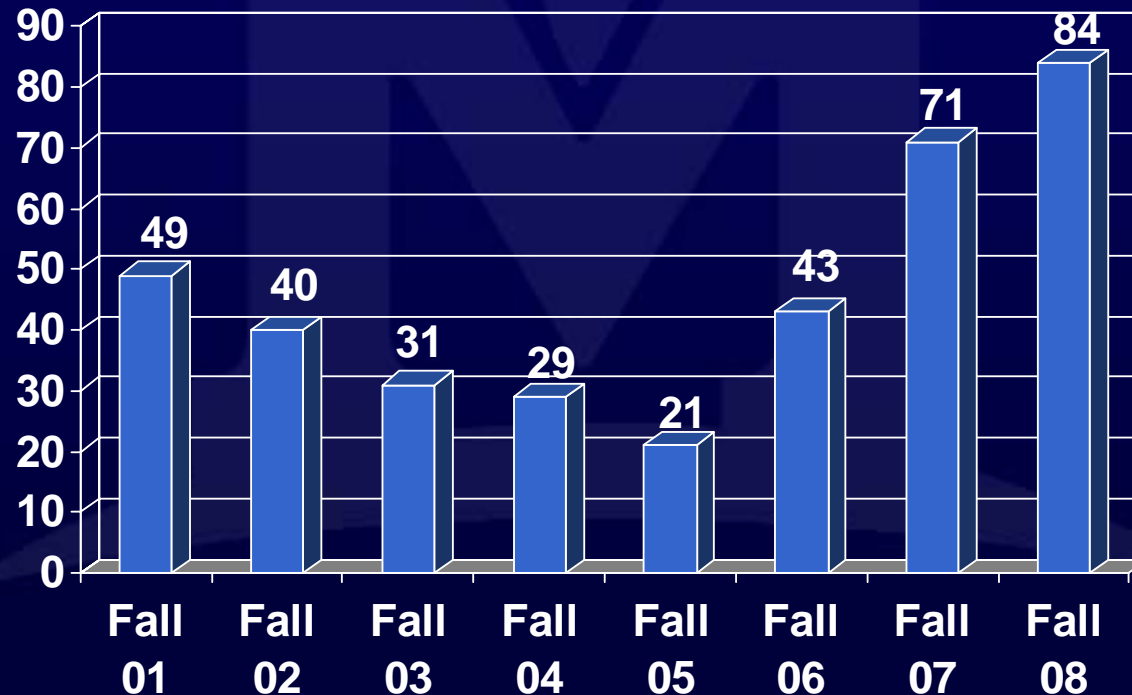
Strategic Goals for 2009-2014

1. Prepare the MSU COE community to engage effectively with the global community.
2. Build on growing college synergy and increase cross-disciplinary activities at every level of the COE community, including not only faculty research and creative activity, but also the student experience.
3. Establish the college as a leader in the state and national technological community.



Goal 1: Prepare the MSU COE community to engage effectively with the global community

- Number of UG international students enrolled in the college



Goal 1: Prepare the MSU COE community to engage effectively with the global community

- Dual-Degree Program Update
 - Bioengineering with ITU: 9 in first cohort
 - Full quota (20) scheduled for next year
 - Cohorts increasing in quality
 - Mechanical Engineering with Selcuk
 - First cohort at Selcuk this fall
 - Environmental Engineering with ITU
 - Negotiations this fall
 - Possibly first seamless Masters in these models



Goal 2: Increase cross-disciplinary activities at every level of the COE community, including not only faculty research and creative activity, but also the student experience

- ENGR 310
- MSU Energy Research Institute
 - Steve Shaw, Associate Director



Goal 3: Establish the college as a leader in the state and national technological community

- Engineering Leadership Academy
- Significant Platforms
 - CBE, NMR, MMF, Sub-zero, Telecomm, OpTec
 - WTI: Transcend, Driving Simulation, others
- Distant Delivery of intro courses
 - ECE 206 to MSU-Billings, Spring, 2009
 - NSF grant: Montana Transfer Readiness Education Program (Brock LaMeres)



Motion-based Driving Simulator



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Lewistown Test Facility



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Wind Energy Center Turbine



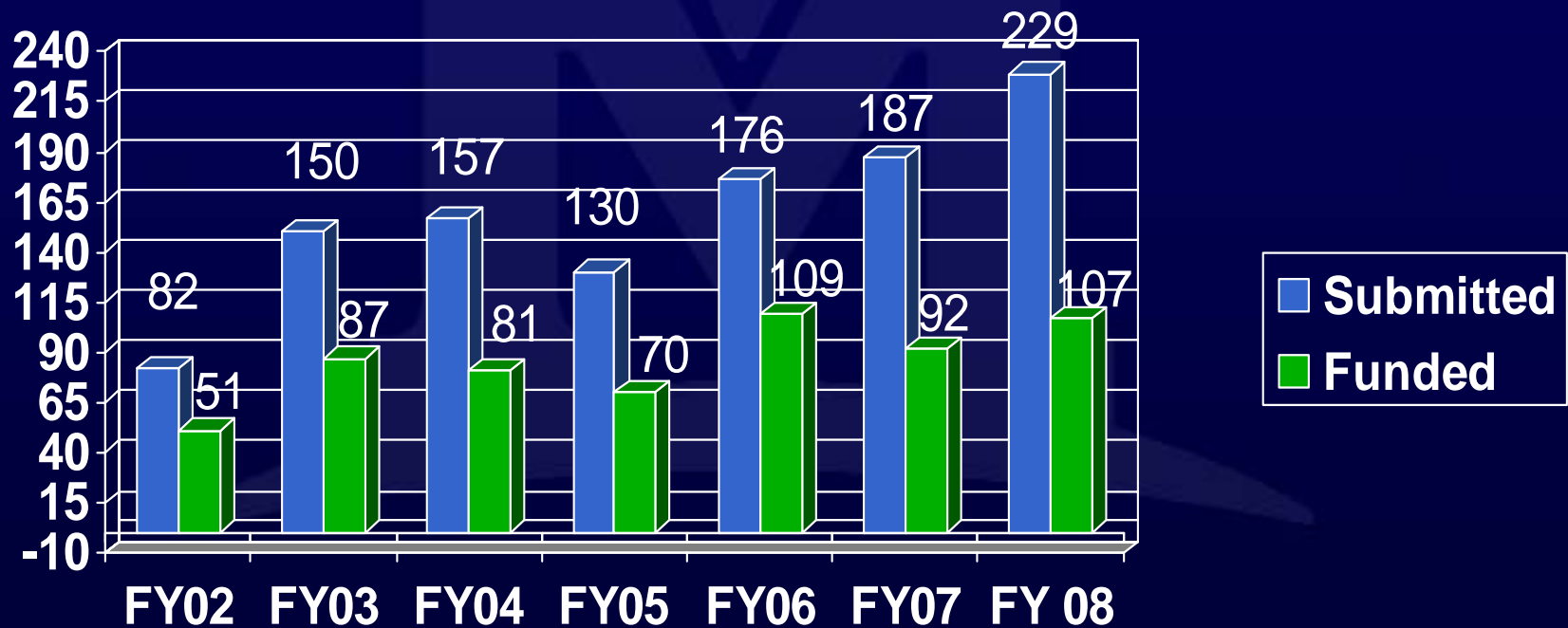
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Goal 3: Establish the college as a leader in the state and national technological community

Number of COE proposal submissions and number funded



Challenges & Opportunities

- F&A Distribution
 - Reduced total returns
 - Increased quality facilities
 - Less (no) match required for start-ups, etc
- Capital Campaign
 - Behind schedule, but improving infrastructure
 - Opportunity to refine needs and goals



Thank you

Questions?

Visit www.coe.montana.edu for updates



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