2008 “College Conversation”

Reviewing—
New faculty
New strategic plan
New successes
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 %

<table>
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For example...

- Be a leader in innovation and discovery in our identified focus areas

- Annual research expenditures in Millions of $$

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MSU COE Core Values

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

- Enrolled
- Awarded
For Example ...

M.S. students enrolled and degrees awarded

<table>
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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

![Bar chart showing the number of UG international students enrolled from Fall 2001 to Fall 2008.]

- Fall 2001: 49 students
- Fall 2002: 40 students
- Fall 2003: 31 students
- Fall 2004: 29 students
- Fall 2005: 21 students
- Fall 2006: 43 students
- Fall 2007: 71 students
- Fall 2008: 84 students
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
Lewistown Test Facility
Goal 3: Establish the college as a leader in the state and national technological community

Number of COE proposal submissions and number funded

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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