2014 Graduate School Update
Presentation to Faculty Senate

Karlene A. Hoo
Dean of The Graduate School
Professor Chemical & Biological Engineering
September 24, 2014

Data denoted by asterisk are best estimates as of 9/18/2014.
Graduate School Staff

Two replacement staff positions

Office of Degree Programs & Certificates
Lauren Cerretti: Specialist

Office of Analytics & Systems
Ann Vinciguerra: Program Analyst
FY14: $1.03 M Investment in Graduate Education

RECRUITMENT: $463K
  PhD Enhancement: $324K
  Fellowships: $98K
  Travel Awards: $41K

TUITION WAIVERS: $277.7K

INTERDISCIPLINARY PROGRAMS: $245K

STRATEGIC INVESTMENT: $46K
  CollegeNet
### FY14: $277.7K Tuition Waiver Investment

<table>
<thead>
<tr>
<th>Program</th>
<th>Amount</th>
<th>Departments</th>
<th>Colleges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molecular Biosciences</td>
<td>$106.3K</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>NSF IGERT</td>
<td>$49K</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Fulbright</td>
<td>$58.4K</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>Montana Space Grant</td>
<td>$9K</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Institute on Ecosystems</td>
<td>$24K</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Others</td>
<td>$31K</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Year</td>
<td>Total</td>
<td>Doctoral</td>
<td>Master</td>
</tr>
<tr>
<td>------</td>
<td>--------</td>
<td>----------</td>
<td>--------</td>
</tr>
<tr>
<td>2012</td>
<td>1,888</td>
<td>420</td>
<td>1,188</td>
</tr>
<tr>
<td>2013</td>
<td>2,030</td>
<td>481</td>
<td>1,195</td>
</tr>
<tr>
<td>2014*</td>
<td>2,050</td>
<td>537</td>
<td>1,206</td>
</tr>
</tbody>
</table>
## Enrollment: Fall Numbers

<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
<th>Doctoral</th>
<th>Master</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>1,888</td>
<td>420</td>
<td>1,188</td>
<td>876</td>
<td>1,000</td>
</tr>
<tr>
<td>2013</td>
<td>2,030</td>
<td>481</td>
<td>1,195</td>
<td>944</td>
<td>1,086</td>
</tr>
<tr>
<td>2014*</td>
<td>2,050</td>
<td>537</td>
<td>1,206</td>
<td>963</td>
<td>1,087</td>
</tr>
</tbody>
</table>

## Degrees Awarded

<table>
<thead>
<tr>
<th>Year</th>
<th>Doctoral</th>
<th>Master</th>
<th>Doctoral-Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>12-13</td>
<td>49</td>
<td>507</td>
<td>22</td>
</tr>
<tr>
<td>13-14</td>
<td>56</td>
<td>486</td>
<td>22</td>
</tr>
</tbody>
</table>
# International Students: Fall Numbers

<table>
<thead>
<tr>
<th>Year</th>
<th>Applications</th>
<th>Admitted</th>
<th>Enrolled</th>
<th>STEM Field</th>
<th>STEM Field (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>128</td>
<td>90</td>
<td>54</td>
<td>42</td>
<td>(77%)</td>
</tr>
<tr>
<td>2013</td>
<td>144</td>
<td>90</td>
<td>54</td>
<td>42</td>
<td>(77%)</td>
</tr>
<tr>
<td>2014*</td>
<td>251</td>
<td>90</td>
<td>54</td>
<td>42</td>
<td>(77%)</td>
</tr>
</tbody>
</table>

60% of the admitted students enrolled

Major sources: India and China
All Degrees by College: 13-14

- AG, 40
- AA, 45
- LS, 119
- EHHD, 136
- GS, 119
- JJB, 28
- ENG, 51
- NRSN, 28

Facts
- 18 Doctoral programs
- 54 Master's programs
- 18 Certificate options
- 19 Online programs

Ph.D./Ed.D
- AG: 7
- EHHD: 6
- ENG: 11
- LS: 32
3% growth: Target enrollment 2,350 by 2019
6% increase: Target of 80 doctoral degrees 2019
Investment in Students

- Teaching Assistantships
- Research Assistantships
- Admissions Fellowships
- Tuition Waivers
- Travel Awards

PROVOST

Graduate SCHOOL

VP RESEARCH
Admissions: CollegeNet

• Customized online application for each degree program
• Integrated with faculty/staff NetIDs
• Application data - automatically loaded into Banner

• Student Portal
  o Electronic submission of Letters of Recommendation
  o Decision letters & Admissions response: electronic

• Department Portal
  o Customized queue for evaluations: electronic
  o Comments/scores and sorting of applicants: electronic
  o Admission decisions: electronic
Academic Success

- **DegreeWorks**: Live 2014
  - Customized individual program

- Faculty Governance: Ensure Quality
  - University Graduate Council
  - Bylaws: 2 faculty from AA and EHHD
    - Chair serves 2 years
    - Bi-monthly meetings

- Consistent Policies
- Forms: track academic progress
- Inform Grad Coordinators, Department Heads: Coffee Talks
University Graduate Council Members

Alan Dyer, Chair (AG)
John Borkowsk (Science of LS)
Tim LeCain (Letters of LS)
Sarah Codd (ENG)
Theo Lipfert (Arts of AA)
Chris Livingston (Architecture of AA)
Art Bangert (Education of EHHD)
Mary Miles (Health & Human Development of EHHD)
Jean Shreffler-Grant (NURSING)
Anne Christensen (BUSINESS)
Randy Babbitt (Faculty Senate)
Graduate Student
Investment in Graduate Degree Programs

• Material Science Program: Multi-University
  o MSU, U. Montana, Montana Tech
  o Doctoral Program
    ▪ Students: 4 MSU, 4 MT, 1 UM
  o New Material Science faculty
  o Provost investment
  o VP for Research investment
  o Graduate School investment

• Others pending
  o Ph.D. Education
  o Master’s in Nursing (Clinical nurse leader)
Investment in New Research Faculty

PROVOST

Graduate SCHOOL

VP RESEARCH

Tuition Waivers
Investment in Existing Faculty

PROVOST

Graduate School

VP Research

Tuition Waivers Academic Success
Improve Ranking: Annual Report

Degree Program Highlights

Featured Programs & Partnerships

Celebrating Faculty Excellence

Celebrating Student Excellence

Celebrating Generosity
Make a Donation to the Graduate School
New Degree Program Highlights

Materials Science Ph.D.
The new Montana Collaborative Materials Science Program is a joint Ph.D. program which brings together the departments, faculty, courses, and research infrastructure of MSU, the University of Montana, and Montana Tech. The program is an exceptional opportunity for students to engage in highly interdisciplinary and rigorous research in a broad range of materials applications while gaining a diverse education that will prepare them for careers in research, academia, industry, and service.

Doctor of Nursing Practice
In the fall of 2013, 24 students began coursework in the College of Nursing’s new doctor of nursing practice (DNP) degree program. The program is primarily online, allowing students to stay in their hometowns and share their newfound knowledge with their community. The degree requires students to complete 1,125 hours in clinical settings and offers focus areas in family and individual health and psychiatric/mental health.

Veterinary Medical Education Program
In partnership with Washington State University, the Washington-Idaho-Montana-Utah (WIMU) Regional Program in Veterinary Medicine serves students interested in the veterinary profession and prepares graduates for entry into many dimensions of veterinary medicine. MSU faculty will teach the first year curriculum with classroom and clinical study continuing on WSU’s Pullman campus during the second and third years. The program concludes with a clinical placement during the fourth year. Ten Montana students will be selected annually for the program with the first cohort beginning in fall 2014.

Meet a Research Team: Materials Science
Dr. Erik Grumstrup, assistant professor in the new materials science program, leads a research team seeking to understand materials relevant to electronics and solar cells at the nanoscale. By using femtosecond (~10^-15 s) laser pulses that are focused using a microscope, the group watches electrons as they move and relax. The high spatial resolution enabled by a microscope combined with high temporal resolution of the laser allows them to understand longstanding fundamental problems of material functionality. For example, a promising new type of solar cell is made from two types of organic polymers. When these polymers absorb light, they produce electrons with excess energy, which are ultimately used to produce electricity. While these materials have been studied for years, it wasn’t exactly understood how they work or what limits their efficiency. The team is seeking to uncover the answers to questions like these by developing and utilizing new methods for correlating the microscopic structure of materials to their electronic properties, and ultimately to their functionality in devices that are used every day.
Featured Programs & Partnerships

Center for Biofilm Engineering
MSU’s Center for Biofilm Engineering (CBE) offers an ideal setting for interdisciplinary, collaborative research in the field of biofilms. Graduate students work under the guidance of the CBE’s multidisciplinary faculty to solve problems associated with biofilms in medical, industrial, and environmental contexts. Students pursue their degree in a discipline offered through one of the various departments at MSU and conduct their research in CBE laboratories. Over 200 masters and doctoral students have earned their degrees in the CBE’s program since it was founded in 1990. During the 2013–2014 academic year, 55 students from eight departments were enrolled in the CBE graduate program: 36 doctoral candidates and 19 master’s candidates.

Institute on Ecosystems
The Institute on Ecosystems (IoE) is a Montana community of scholars and partners with a shared vision to advance integrated environmental sciences and related fields. IoE draws on the extraordinary landscapes in Montana and beyond to understand complex ecosystems, including the interconnectedness of people and nature. IoE Graduate Fellows are graduate students working on interdisciplinary topics and receive support to complete their education and research. The institute works with Graduate Fellows to engage them with the IoE community of scholars, to provide them opportunities for skills training, and to foster the development of an outreach activity bringing science to a targeted audience.

Montana Dietetic Internship
The College of Education, Health and Human Development offers a non-degree graduate dietetic internship. The Montana Dietetic Internship (MDI) Program integrates experiences in clinical and community nutrition, foodservice management, and sustainable food systems to provide a unique and progressive supervised dietetic practice experience to future registered dietitians. MDI meets the Accreditation Council for Education in Nutrition and Dietetics Competencies for preparing knowledgeable professionals in the practice of dietetics. Program activities include 1,295 hours of supervised practice in various clinical and non-clinical settings, a 28 week online didactic course to support supervised practice learning, and 12 non-degree graduate credits. In addition to completing practice experiences at MSU, interns are assigned to one of five geographic areas in Montana to fulfill the majority of their required supervised practice hours.

Montana INBRE
Montana is one of 23 states participating in the IDeA Networks of Biomedical Research Excellence (INBRE) program through the National Institute of General Medical Sciences. INBRE is a collaborative network of institutions focusing on increasing the biomedical research capacity in Montana by building research infrastructure, supporting faculty and student research, and fostering a state-wide collaborative network. Graduate students have opportunities for enhanced biomedical education and research experience through internships, travel awards, and fellowships in collaboration with the MSU’s Molecular Bioscience Program.
Future Plans

• Enrollment
  o Centralize recruitment for STEM doctoral programs

• Communication
  o Orientation for new faculty on graduate advising: Oct. 6, 1:00 – 2:00 pm
  o Coffee talks: monthly
  o 3-minute videos of student research
  o Annual report
Future Plans

• Quality
  o Assessment: program learning outcomes
  o Exit Survey: program/advising/experience satisfaction

• Development Foundation: donate to the Graduate School
  o 2-year fellowships
  o Travel awards for existing graduate students