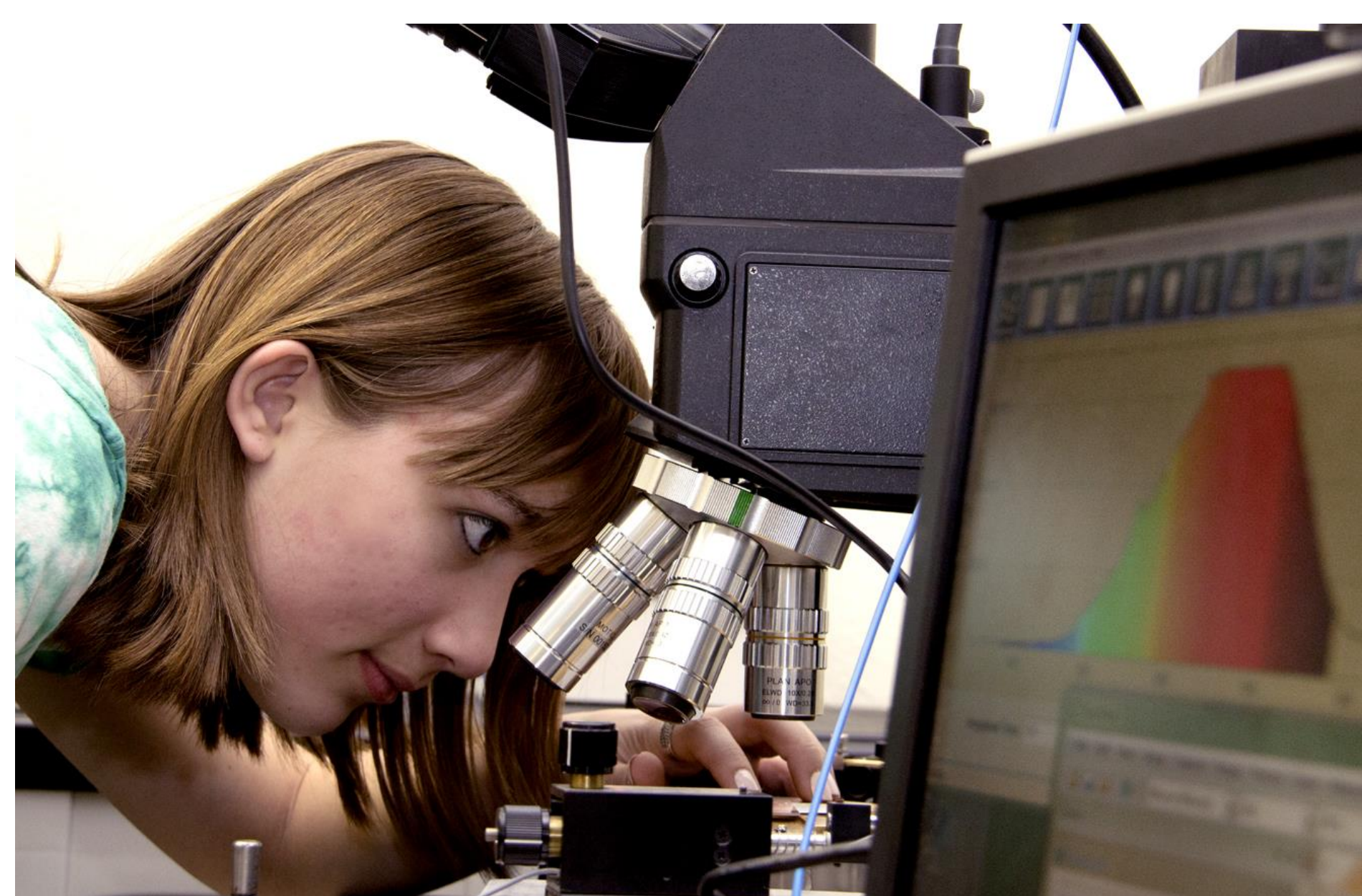


Undergraduate Research at Montana Tech

Beverly Karplus Hartline and Katie Hailer

About MTech's Undergraduate Research Program (URP)

- Established in 1996
- **Purpose:** Give undergraduates the opportunity to do faculty-mentored research, enriching their college experience, reinforcing classroom learning, improving retention in the major, and exposing them to grad school opportunities
- Faculty incentives: funding for supplies; small stipend; preliminary data for proposals; broader impacts
- All students and mentors receive Responsible Research training

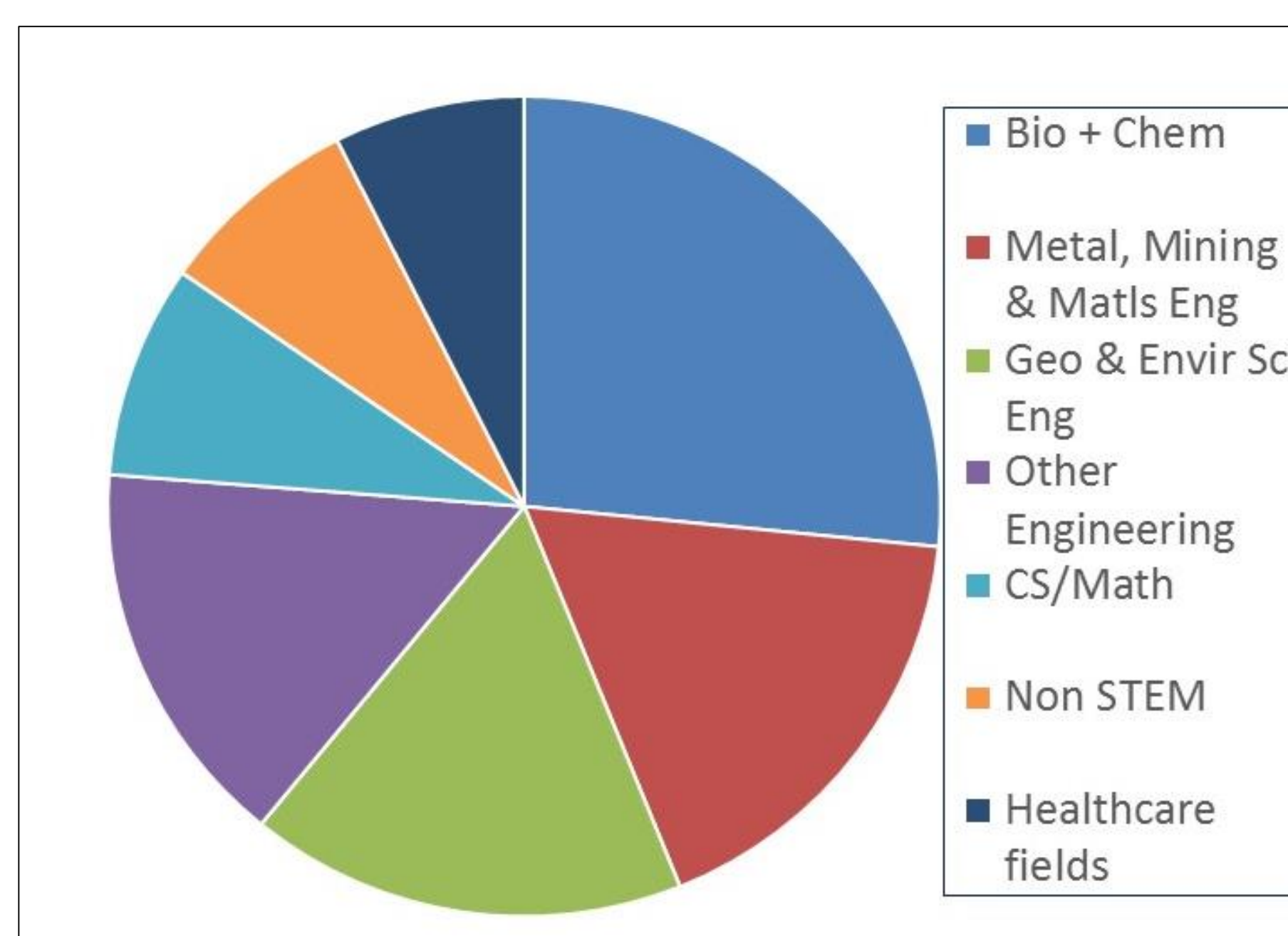


URP Process

- **Multidisciplinary Faculty URP Committee**
- Invites proposals in spring
- Reviews proposals and selects awardees: URP, SURF, PHI, RAMP
- Number determined by budget available
- Oversees projects; provides feedback
- **Program administered by Research Office**
- Also organizes training & workshops
- SURF workshops on RCR; research design, statistics & communicating science; grad school; networking; presentations & posters

Impact

- About 1000 students/projects since 1997
- ~80% one project; ~20% did more
- Many majors included
- >13% go to grad school, vs 1% average
- **NEW:** 11 Public Health Internships in 2014-15 made possible by MT-INBRE: many involved community partnership
- Students most valued: **challenging & fun (86%)**; **faculty mentorship (75%)**; **understand role of research in the field (70%)**
- In the words of an alumnus: **"The URP program was very beneficial for my education. It was very challenging and prepared me for my career where you are given tasks that don't always have a clear cut answer. It also helped with my presentation and writing skills."**
- Many publications & presentations, with student and faculty coauthors
- Mary MacLaughlin, Geological Engineering faculty member and previous URP Committee Chairperson received the 2014 GEO/CUR Undergraduate Research Mentor Award



Majors of undergraduate research students 2000-13

Acknowledgments

Faculty URP committee members & mentors. Funding from NSF EPSCOR; NIH INBRE; Montana Tech; NASA Space Grant.

Types of URP Projects

- **Traditional URP:** Academic-year project
- Student(s) writes proposal.
- Scholarship of \$1,500 for year
- Student enrolls for URP credit(s)
- Oral presentation at Montana Academy of Sciences meeting (April)
- **SURF: Summer Undergraduate Research Fellowship (2011-present)**
- Faculty writes proposal
- Half-time or full-time for 9-10 weeks
- Student paid \$4000 (FT); \$2000 (PT)
- Biweekly lunch/workshops for all
- On-campus poster symposium in August



- **Public Health Internships (PHI)**
- New in 2014-15; MT-INBRE funded
- Similar to URP & SURF
- Project is an internship in public health, with faculty or community mentor
- **RAMP: Research Assistantship Mentorship Program (2011-present)**
- Designed for inexperienced students
- Faculty writes proposal, for a project a team of freshmen/sophomores would do during academic year.
- Student scholarships of \$500