

Summit on Improving Geoscience Graduate Student Preparedness for the Future Workforce
Department Head, Chairs & Graduate Program Directors
May 11-13, 2019

Preliminary Summit Agenda

Panelists and speakers will be added as confirmed

Saturday, May 11th

- 7:30 a.m. Breakfast & check in, Holland Family Student Center (JGB, 2nd floor; main entrance)
- 8:30 a.m. Welcome, Introduction
- Project goals and expected workshop outcomes
 - Logistics
- Sharon Mosher, Organizing Committee Chair; Dean, Jackson School of Geosciences, University of Texas at Austin (*Boyd Auditorium; JGB 2.324*)
- 8:45 a.m. Current landscape and drivers for change – Keynote Speaker
- Overview of outcomes from National Academy of Sciences (NAS) report on Graduate STEM Education for the 21st Century, Council of Graduate Schools report on Professional Development Shaping Effective Programs for STEM Graduate Students (CGS)

Part 1. Identify the skills and competencies that should be part of graduate geoscience education for PhD & MS students in Earth, Ocean, & Atmospheric Sciences

- 9:30 a.m. Summary of Geoscience Employers Workshops results on skills/competencies: Sharon Mosher, Organizing Committee Chair (*Boyd Auditorium; JGB 2.324*)
- Summary of Future of Undergraduate Geoscience Education initiative results as baseline - What skills/competencies should students learn as undergraduates
 - Summary of Graduate Geoscience Employers Workshop results
- 10:00 a.m. Coffee Break
- 10:20 a.m. Breakout session in working groups (10-13 people per group; individual rooms as assigned)
- Do your entering graduate students have the preparation that employers expect undergraduate geoscience graduates to have? What generally do they have and what do they lack?
 - Do students graduating with a PhD or MS from your program have the preparation the employers expect graduate students to have when they finish? What generally do they have and what do they lack? Does this vary with their specialty, sub-discipline or discipline?
- 11:30 a.m. Working group reports & all participant discussion (*Boyd Auditorium; JGB 2.324*)
- 12:00 p.m. Lunch, Holland Family Student Center (JGB, 2nd floor; main entrance)

- 1:00 p.m. Panel of employers: skills/competencies needed to prepare graduate students for future careers in the geosciences (*Boyd Auditorium; JGB 2.324*) – address these questions:
- What skills and competencies make PhD and MS graduates successful in the workplace today?
 - What changes do you see in your field and organization over the next ten years that will require different competencies? What new or improved skills do you predict graduates will need in the future?
 - What level of competency is needed? How does the relative weighting vary with employers, with PhD's versus MS graduates?
 - Overall, which skills do you find most current graduates have acquired and which do they generally lack?
- 2:00 p.m. Breakout session in working groups (10-13 people per group; individual rooms as assigned)
- Which of the skills/competencies expected by employers (from panel and results of Geoscience Employers Workshop) does your program address and to what level of competency?
 - What would be needed to achieve these expectations? How proactive is your program at preparing your students for both current and future workforce needs?
 - How different or similar are these skills/competencies from those needed for future faculty at a range of educational institutions?
- 3:30 p.m. Coffee Break
- 3:50 p.m. Working group reports & all participant discussion (*Boyd Auditorium; JGB 2.324*)
- 5:00 p.m. Reception followed by dinner, Holland Family Student Center (*JGB, 2nd floor; main entrance*)

Sunday, May 12th

8:00 a.m. Breakfast, Holland Family Student Center (*JGB, 2nd floor; main entrance*)

Part 2. Investigate best means of developing these in graduate geoscience programs nationally

- 9:00 a.m. Panel/Presentations (*Boyd Auditorium; JGB 2.324*)
- Summary of Graduate Program survey data – what are departments doing and how are they structured. Chris Keane, American Geoscience Institute.
 - Career Compasses – alternative ways to achieve and demonstrate skills/competencies. Pranoti Asher, American Geophysical Union
 - Integrating needed skills and competencies into curriculum, courses, programs & documenting achievements.
- 9:45 am Breakout session in working groups (10-13 people per group; individual rooms as assigned)
- What are the best ways to impart different skills? How do you implement these into graduate programs?
 - Which skills and/or competencies can students get from graduate coursework versus student research experiences versus other graduate professional experiences?

- How aligned are these skills to student research experiences? Are there skills employers value that are not gained conducting research?
- What balance is needed between the specific skills development process and the fundamentals of learning to and conducting research within a graduate program?

- 11:00 a.m. Coffee Break
- 11:20 a.m. Working group reports & all participant discussion (*Boyd Auditorium; JGB 2.324*)
- 12:20 p.m. Lunch, Holland Family Student Center (*JGB, 2nd floor; main entrance*)
- 1:10 p.m. Panel: How employers can assist, during formal education, co-curricular opportunities, professional development activities, or other means. What training should be a responsibility for the employer post-graduation? How can graduate students demonstrate that they have developed skills and competencies? (*Boyd Auditorium; JGB 2.324*)
- 2:00 p.m. Breakout session in working groups (10-13 people per group; individual rooms as assigned)
- What can we do to ensure graduate students develop a portfolio of skills and competencies that they need for employment in future careers?
 - Are there defined learning outcomes graduate programs could use to document skills and competencies beyond just coursework taken by students?
 - How can employers assist, during formal education, co-curricular opportunities, professional development activities, or other means? What training should be a responsibility for the employer post-graduation?
- 3:00 p.m. Coffee Break
- 3:15 p.m. Working group reports & all participant discussion (*Boyd Auditorium; JGB 2.324*)
- Part 3** **Heads/Chairs and Graduate Program Directors work on implementation strategies to develop the skills and competencies identified by the geoscience employers workshop & other efforts**
- 4:00 p.m. Individual or Group Planning: how to move own institution forward (individual rooms as assigned)
- 5:00 a.m. Dinner on own. Continue working on individual or group plans

Monday, May 13th

- 8:00 a.m. Breakfast, Holland Family Student Center (*JGB, 2nd floor; main entrance*)
- 9:00 a.m. Working groups reconvene to discuss individual plans & finish preliminary plans for submission (individual rooms as assigned)
- 9:45 a.m. Overcoming barriers, finding solutions, creating incentives and rewards) - presentations from Future of Undergraduate Geoscience Education action plan reports and chairs (*Boyd Auditorium; JGB 2.324*)
- 10:00 a.m. Breakout session in working groups (10-13 people per group; individual rooms as assigned)

- How do you change culture – i.e. training PhD's only for academia/replicating self?
Recognizing MS degrees as important gateways for employment?
- How do you overcome resistance to change, create incentives and rewards?
- How can you integrate this into your action plans?

10:45 a.m. Coffee break

11:00 a.m. Working group reports & all participant discussion: Individual and group plans for moving forward when return home; unresolved issues, external help needed (*Boyd Auditorium; JGB 2.324*)

12:00 a.m. Lunch Holland Family Student Center (*JGB, 2nd floor; main entrance*)

1:00 p.m. Final Discussion: Summary of Progress, Next Steps and Roadmap for Future Organizing committee; moderated by Sharon Mosher; *submit action plans (JGB, 2nd floor; main entrance)*

1:45 p.m. Shuttles depart for airport. Airport arrival estimated at 2:15 p.m.