On the first day of OSER 2012, participants dispersed into three parallel breakout groups to discuss the following topics.

TOPIC 1: SURVEY DATA
What is the value of the Graduate Study and Faculty Surveys? How do we get better survey data? What questions do you also want the data to answer?

Breakout session participants agreed that the survey results create Institutional self-awareness, which allows them to compare how well they are doing in relation to the rest of the ocean science academic community.   Participants also appreciate the historical perspective the survey analysis provides; including providing insight into how many students are in the ocean sciences and where they are dispersed.   Available data on jobs and graduation trends are also extremely helpful. One issued raised was the potential for posting the raw data on the OSER website. This would automatically make the data more valuable because the public could use it to answer a variety of questions, more than just a single analyzer could do. Additionally, the survey data can be used by federal agencies to defend their programs. Perhaps the survey would carry more clout if federal agencies (such as NOAA, NASA, and NSF) 'signed on' to the survey collection. They could provide a cover letter expressing the importance of the survey which might encourage more institutions to complete the survey.

In order to improve the Graduate and Faculty surveys, participants felt the survey platform could be improved by allowing users to sign in and return to the survey and give feedback when numbers don't add up, etc. It was also suggested that a statement such as "We kindly ask that you forward this request to any and all schools/departments/colleges associated with your university that has students or faculty in the ocean sciences and would be categorized in this survey" be included to encourage more participation. Participants also discussed other existing surveys that collect similar data, and stated that the OSER surveys should not duplicate data that is already collected. Data about where students begin their career is useful, but tracking students beyond their first job or post-doctoral position (ten years or so for example) could help provide vital data could be useful for students to see what they can do with their degree. Participants all agree that the current survey data is useful to assess the students in the field of oceanography and their impact. They would like more detailed data on students' funding sources, time to degree by gender, and an in-depth analysis of the student pipeline (who drops out, where students come from, and what they do further down the line).

TOPIC 2: GRADUATE STUDENT SKILLS
What are the competencies you want students to have when they graduate? What can we offer to students that will be useful to them regardless of their future career setting?

Master's students should be able to implement a research project. Some Master's students are learning how to become good educators, such as high school teachers, and should therefore have teaching experience. PhD students should be able to formulate and execute their own research project, learn how to mentor others, display good leadership and teaching skills, and should also obtain experience in proposal and grant writing. Participants agreed that regardless of whether a student is obtaining a MS or PhD, they should have good writing and communication skills and know how to collaborate and work as a team. They should also have reasoning skills, be adaptive, be life-long learners, and good problem solvers. Experience with outreach – oral and written communication to general audiences - is important as well. Students should also obtain research/project management skills, such as budgeting, personnel management, management of a laboratory, program management, and time management.

Many discussants mentioned utilizing their alumni and asking them what they would do differently or what they would tell students now that they have graduated. Some schools have established mentoring programs for their students (such as UNC-Wilmington). Expanding on these types of programs could be hugely beneficial to current and future oceanography students.

TOPIC 3: TEACHING OCEANOGRAPHY
Are the four oceanography core courses (Chemistry, Biology, Physic, Geology) the future with regards to teaching? What evolution might occur in curricula to prepare the students we'll have in 5 years (more diverse, more connected, more environmental)?

Discussants were careful to distinguish between disciplinary courses and 'skill' courses, and gave many examples of 'core plus' curriculum models where students take four core courses plus electives, which evolve to allow for professional development and specialization (examples: law, policy, etc.). There was also a suggestion of a 'hybrid' model of teaching, where content delivery is online and class time is filled with problem solving skills, content application, and team work. Participants noted that a four-core-course model needs to be better integrated and taught within the context of earth system science and/or human dimensions, for example. The need for students to have quantitative skills as well as computer and mapping skills and experience was also emphasized.