2026 ASMS ANNUAL CONFERENCE | UNDERGRADUATE RESEARCH IN MS INTEREST GROUP

Workshop Report

Basics and Beyond: Undergraduate Education, Training, and Mentorship in Mass Spectrometry

Date & time	Monday, June 1, 2026 | 5:45–7:00 p.m.
Presiding	Dr. Caitlin (Cay) Tressler, Johns Hopkins University; Dr. Chris Tracy, Brigham Young University
Attendance	Approximately 25–30 participants

Panelists

Caitlin Tressler (Johns Hopkins University); Sonia Klee (Bruker/TOFWERK); Jeff Gilbert (Corteva Agriscience); Chris Brown (Corteva Agriscience); and Olujide Akinbo (Butler University); Moderator-Chris Tracy (Brigham Young University). Our panelists were selected because they have either successfully developed undergraduate coursework or have taken one of the courses referenced during the discussion.

Summary of Program and Discussion

The workshop opened with an invitation for educators, industry scientists, students, and other practitioners to share experiences and challenges in undergraduate mass spectrometry education. Following panel introductions, the group highlighted two complementary approaches to instruction: a semester-long, in-person Butler University course featuring guest lecturers, facility tours, and physical instrument components, and a flexible, self-paced online course. A participant in the in-person course offered a student perspective on effective learning experiences. These examples framed a discussion of the strengths and limitations of online and in-person teaching, including accessibility, engagement, and opportunities for hands-on learning.

A central theme was unequal access to instrumentation, specialist software, and teaching materials across undergraduate institutions. Participants discussed practical approaches such as physical models, equipment schematics, retired or nonfunctional instrument parts, shared teaching datasets, and data-analysis exercises. The group also considered how industrial partners could contribute guest lectures, laboratory visits, educational materials, instruments or components, and software access. The possibility of a shared, vendor-neutral online repository of teaching resources, especially for institutions without mass spectrometry instruments, was met with enthusiasm.

The career-development discussion considered paths in academic and industrial research, government laboratories, core facilities, instrument and applications support, and data- or software-focused work. Panelists and attendees explored the importance of undergraduate research, internships, analysis skills, and professional communication in preparing students for these opportunities. The final segment focused on finding mentors and establishing a continuing ASMS education and mentoring community through networking, shared resources, and industry connections. Attendees were encouraged to complete a QR-linked interest survey and to offer ideas, teaching materials, or mentoring expertise for future collaboration.

Attendee Survey and Community Interest

A follow-up questionnaire collected 23 responses between June 1 and July 8, 2026, from faculty, trainees, industry scientists, and core facility personnel. Nineteen respondents indicated interest in participating in an ongoing ASMS community for undergraduate MS education and mentorship; one selected “maybe,” and three requested updates without participating. Twenty respondents opted to be contacted about future Interest Group activities. Eleven respondents indicated willingness to serve as mentors, with three additional respondents answering “maybe.”

Interest in future activities was broad: 14 respondents selected networking events, while 12 each selected undergraduate mentoring, developing teaching resources, speaking in classes or workshops, and graduate mentoring. The most commonly identified community priorities were:

Community priority	Selections
Shared teaching repository	10
Mentoring network	9
Industry–academia partnerships	9
Student networking opportunities	9
Online resource library	6
Internship connections	5
Virtual guest lectures	5

Respondents also offered or expressed interest in sharing course materials, lecture slides, laboratory and data-analysis exercises, instrumentation expertise, and career mentoring. Open-ended feedback encouraged free access to educational datasets and software and identified existing chemistry-education repositories, including IONiC/VIPEr and ASDL, as possible models for organizing resources.

Emerging Priorities

The workshop and survey identified potential directions for continued Interest Group activity: (1) exploring a curated, vendor-neutral repository of undergraduate MS teaching resources; (2) pursuing industry-academia partnerships that could make instrument components, educational software, and datasets more accessible; and (3) strengthening student networking, mentoring, and connections to research and career opportunities and exploring these ideas for future development.

Overall, the discussion and survey indicated substantial interest in a more connected community of undergraduate mass spectrometry educators, students, and industry partners, with resource sharing and mentorship as particularly promising areas for collaboration. The community was receptive and very enthusiastic about the possibly of a repository of MS teaching resources as well as better access to datasets, with several discussions after the workshop centered on possibilities of bring these ideas to fruition.