ASMS 2026 San Diego

Workshop: Top-Down Proteomics Emerging Advances and Future Directions

Date: June 2, 2026

Presiding: Corinne Lutomski (Oxford University), Eli Larson (Merck & Co. Inc.)

Attending: ~110

The workshop began by introducing the Consortium for Top-Down Proteomics (CTDP) and highlighting recently completed initiatives. Next, the incoming Early Career Research Committee for 2026-2027 was introduced. Finally, the most recent initiative of CDTP was launched: the Women in Top-Down Proteomics Committee.

The workshop then transitioned into a more interactive format, introducing six panelist from across academia, industry, and government labs. The panelists were: Harsha Gunawardena (Johnson & Johnson), David Roberts (Stanford University), Oliver Hale (University of Birmingham), Joshua Hinkle (Thermo Scientific), Caroline DeHart (NIH), and Dan Wodall (Amgen). The panel was presented with a series of questions and simultaneously the attendees were asked to respond via live polls, displaying results in real time to allow community input to be addressed by panelists. This created a more open conversation, enabling discussion to touch on key themes which are present in multiple sectors and ensure the broadest range of perspectives were heard.

The following questions were posed to the panel and the attendees:

1. Top-down has been described as "emerging" for quite some time now. How do we as a community define what it means for the field to have "arrived," and what specific, measurable markers would tell us we've crossed that threshold?

2. Are there specific research areas where you feel TDP has genuinely established itself as the go-to approach? What single development had the largest impact in those areas and what can we as a community do to deliberately replicate those conditions in other application areas?

3. What does TDP need to deliver, technically or practically, to be genuinely accessible to a lab or organization that isn't already a specialist? What are one or two concrete things the community could commit to that would meaningfully lower that barrier?

4. Is there a resource, paper, protocol, or person that was particularly formative in your own development with TDP? Stepping back, what shared resources does the community currently lack that would have made your own path easier and is there an opportunity to build them collectively?

5. If you could give one piece of practical advice to someone integrating TDP into their work, what would it be? And how do we make sure that kind of practical wisdom reaches newcomers systematically, rather than depending on whether they happen to know the right person?

6. From your perspective in your research sector, what is the most important unmet need in TDP right now? What would it take to actually move it forward in the next few years?

During the course of the discussion, several key themes emerged. A lack of available software tools for TDP has been a central theme in this workshop for several year, however, this workshop showed far greater optimism about existing tools thanks in part to the launch of several new commercial platforms from vendors designed for TDP applications. This enabled the discussion to shift from a call for software solutions towards questions of best practices for data management and data analysis techniques. This theme will likely continue in subsequent years. A second theme that emerged was the continued reliance on "gurus" to train new practitioners in the field, creating a bottleneck to training speed and availability. This is a key growth opportunity that will need to be addressed to ensure the next generation of mass spectrometrists are efficiently and accurately trained to meet increasing demand for TDP. Finally, the perennial question: has TDP "emerged" as a technique to realize the full potential of the field? Panelists and attendees agreed that TDP has demonstrated capabilities far exceeding what is recognized by the mass spectrometry community. Ongoing work to demonstrate new use cases and raise community awareness of TDP will be critical to advancing the field and expand uptake of this powerful technique.

Feedback from attendees was overall positive, with the format, topics, and quality of the session rated favorably overall. Attendees appreciated the more interactive format than previous years, but asked for technical challenges to be addressed more clearly during the session to avoid prolonged discussion of abstract challenges. Taking this feedback, we intend to invite panelists to give a 5 min summary of their ongoing research and challenges they face to create a more direct tie between sector-specific challenges to applications of TDP and the content of the panel discussion.