

# Structural Mass Spectrometry Workshop

May 3-8, 2017 | The David Lopatie Conference Centre,  
Weizmann Institute of Science, Rehovot, Israel

## Goals

The aim of the IMSF Workshop was to expose researchers interested in structural biology to the arsenal of tools provided by MS. Covering topics as sample preparation, native MS, cross-linking, hydrogen-exchange, ion mobility, foot-printing, top-down proteomics and computational approaches for data integration. The talks focused on the practical applications of each method, workflow, data analysis and discussion on its pros and cons.

## Venue

The workshop was held at the Lopatie conference center, Weizmann Institute of Science, Israel, and benefited from the administrative assistance of the Weizmann's Department of Hospitality and Conferences.



## Program

The program included 5 full days of lectures and social activities (9:00-21:30). Prof. Vicki Wysocki (USA), opened the workshop with a plenary overview talk on the field of Structural MS. Subsequently, 7 sessions were held, each focusing on a different aspect of Structural MS. Each session (two slots of 1.5 h separated by a short break), was delivered by two experts who coordinated and built the session together to provide a comprehensive overview of the field:

1. **Sample Preparation - Focus on Molecular Biology, Protein Expression & Purification** - Shira Albeck, Yoav Peleg, Tami Unger (Structural Proteomics Unit, Weizmann Institute).
2. **Native MS** - Frank Sobott (Belgium), Michal Sharon (Israel)
3. **Ion Mobility** - Perdita Barran (UK), Kevin Pagel (Germany)
4. **Hydrogen Exchange** - David Schriemer (Canada), Dana Reichmann (Israel)

5. **Top Down Proteomics** - Julia Chamot-Rooke (France), Neil Kelleher (USA) (Neil had problems with the flight and was eventually replaced by Julia Chamot-Rooke and Gili Ben-Nissan (Israel)).
6. **Cross-Linking MS** – Andrea Sinz and Carla Schmidt (Germany)
7. **Computational MS, modeling protein structures using MS outcomes** - Argyris Politis (UK), Nir Kalisman (Israel)

## Social activities

To promote networking, collaborations and personnel interactions between speakers and attendees ample of time was allocated to social events.



The social activities included:

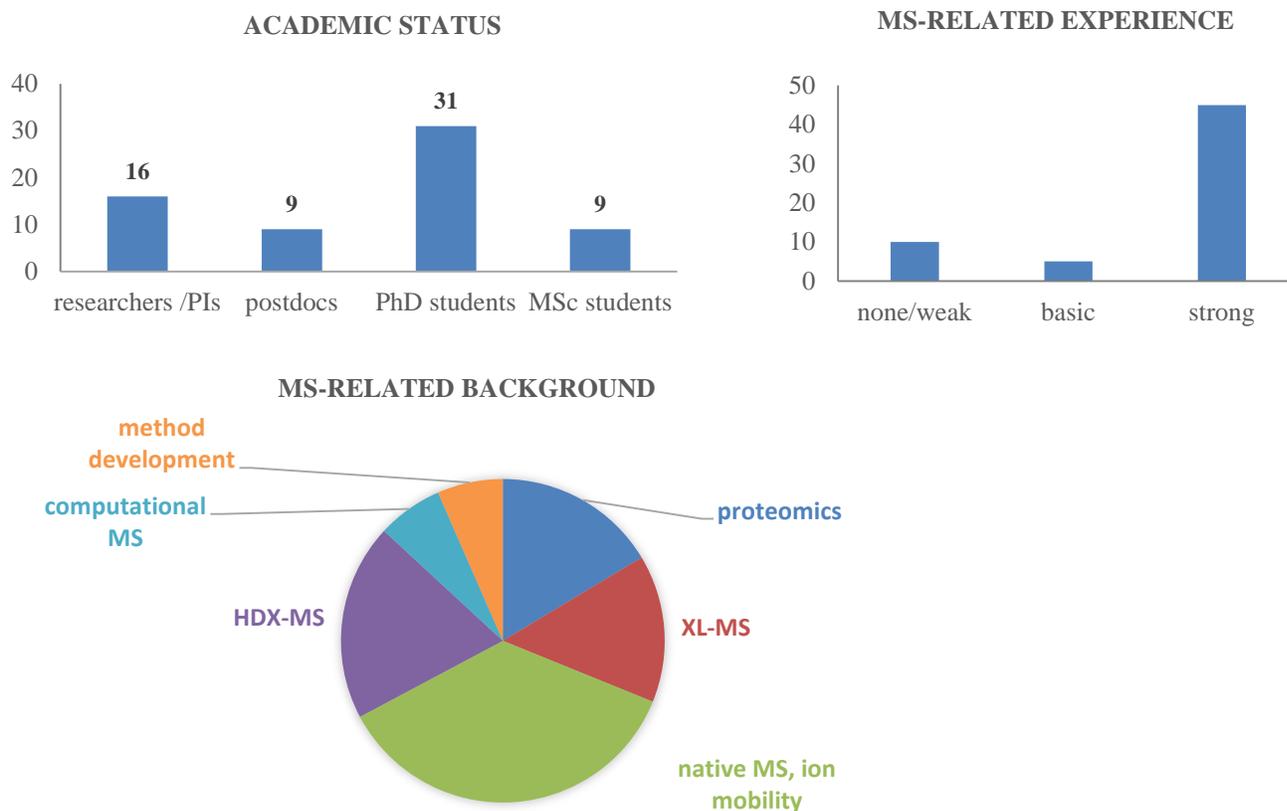
1. An ice breaking game at the first day
2. Informal lecture given by Prof. Uri Alon on “How to choose a good project”
3. Two poster sessions
4. Dinner in Jaffa
5. Day tour to the Dead Sea and Masada and a festive dinner in the desert mountains
6. “Research grant” competition between groups composed of 3-5 attendees from different labs and countries. During the workshop each group compiled a joint project that was presented on the last evening.
7. Gala dinner



## Attendees

65 people attended the workshop from 22 different countries (Austria, Belgium, Canada, Cyprus, Czech Republic, Denmark, Finland, France, Germany, Hong Kong, Israel, Italy, Korea, Poland,

Spain, Sweden, Switzerland, Turkey, UK, USA, Japan). Attendees came from different scientific background and academic rank as can be seen by the analysis below:



Most of the attenders were PhD students, which were already involved in one of the structural MS methods, however, they wished to expand their knowledge in additional approaches. Moreover, a few PIs, and postdocs took part in the workshop to establish structural MS methodologies in their future research.

### Financial Support

The workshop received substantial financial support from the Weizmann Institute, COST Association, Instruct, Office of Naval Research Global, Israel Science Foundation and the Nancy and Stephen Grand Israel National Center for Personalized Medicine.

### Fellowships

In total 30 fellowships were provided by IMSF, COST and the Weizmann Institute, supporting the travel and registration costs of students and postdocs.



## Feedback

At the last day of the workshop the attendees were asked to fill a feedback form. Based on the feedback outcomes, the overall rank of the event was 4.5/5 and organization score was 4.7/5.

The attendees were asked to state what did they like, what changes they suggest and what should be improved for next events. The majority of participants liked the broad diversity of the workshop topics, the span of the lectures from basic methodological principles through applications to practical advice and tips. In addition, the two hands-on sessions, which covered usage of data analysis programs (MS studio for the HDX data and MeroX for XL-MS data), were highly appreciated and it was suggested to provide background information on the software before the workshop.

The investment in social activities was highly evaluated by the attendees and they requested to maintain this aspect in future workshops. The participants stated that the idea of presenting collaborative research project is great and in future they suggest having more time allocated for preparing the project.

To sum up, the broadness of the talks, quality of the speakers, availability of speakers along the entire workshop and diverse social activity provided a friendly and open atmosphere leading to a fruitful event.

We hope that the success of the 1<sup>st</sup> IMSF focused Workshop will motivate other societies and interest groups to place suggestions for the 2<sup>nd</sup> workshop.

