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INTERVIEWS

Distinguished members of the MSI community

Meet **Professor Isabelle Fournier** and **Professor Jörg Harrieder**

24 HOURS IMSI

Register now for the 24 hours of International Mass Spectrometry Imaging

OURCON SERIES

Save the date for OurCon 2021 in Sheffield

WEBINARS

MS Imaging Webinars in Collaboration with BMSS

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<https://ms-imaging.org/wp/>

1st Announcement OURCON2021: The International Mass Spectrometry Imaging Conference



OurCon2021: The International Mass Spectrometry Imaging Conference will be held in Sheffield United Kingdom from **October 11th-14th 2021**. The main venue is the historic [Cutlers' Hall](#), located in the heart of Sheffield city centre.

Sheffield has an excellent central location in the UK with simple rapid transport links by air and rail to the rest of the world and over 2,000 Hotel Beds with 20 Hotels which are within 10 mins walking distance of both the conference venue and conference dinner venue [Sheffield Cathedral](#) (which are 5 mins from each other).

The theme of the meeting is "Mass Spectrometry Imaging - A mature technology?"

The aims are:

- to examine the fields in which MSI is an established technology and why this has occurred.
- to discover new areas in which MSI should be an important technology
- to establish what technical developments are required to broaden MSI into these new areas and hence produce a roadmap document for future developments in MSI over the next ten years.

Please add the date to your diaries and look for further announcements on registration and abstract submission.

Coronavirus: Please note we have been able to negotiate full refunds with all venues in the event of cancellation due to Conronavirus, you will therefore be able to register for OurCon2021 with no risk of losing your registration fees.

Malcolm Clench (Chair)
Organising Committee OurCon2021



Join the community and shape the future of MSI...

MSIS Calendar

24 HOURS OF INTERNATIONAL
IMAGING MASS SPECTROMETRY

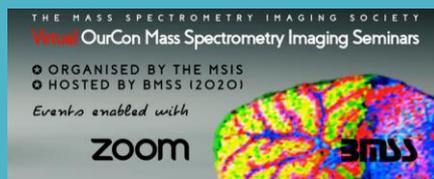


 18-20 Nov 2020

 Online Event

[Registration now open!](#)
[Scientific program](#)

MSIS VIRTUAL OURCON SEMINAR SERIES (HOSTED BY BMSS)



 NEXT WEBINAR: 25 Nov 2020

 Online Event

For more information:

[MSIS virtual OurCon Seminar Series](#)
(Hosted by BMSS)

OURCON 2021



 11-14 Oct 2021

 Sheffield, UK

IMSS 2021 MEETING

 3 - 6 Oct 2021

 Colorado
Spring, CO



Mass Spectrometry Imaging Society:

Meet distinguished members of the MSI community

Professor Isabelle Fournier

Université de Lille, France



Professor Isabelle Fournier is Distinguished Professor at the University of Lille and held a position as co-director of the Proteomics, Inflammatory Response & Mass Spectrometry Lab Inserm U1192. Prof. Fournier is an analytical chemist specialized in Mass Spectrometry applied to biology and clinics. She has started a research career in 1996 by a PhD at University Pierre & Marie Curie in Paris working on the fundamental mechanisms

associated to MALDI. She continued her work on fundamental MALDI by 2 years in the group of Prof. Michael Karas in Frankfurt. In 2002, she started to develop MALDI MS Imaging at the University of Lille. In 2004, after obtaining an associate professor position, she established her own group on MALDI MS Imaging and contributed to the field with several developments including new MALDI matrices, strategies for imaging of FFPE tissues and proteins, and the development of Tagged probes for specific imaging of mRNA and antigens. In 2009, she was hired as Full Professor and awarded a Junior position at Institut Universitaire de France. In 2010 she cofounded the Imabiotech Company which provides services in MALDI MSI. Since 2012, she got interested by the development of Spatially-Resolved Proteomics in combination to MALDI MS Imaging for clinical applications in the field of oncology. Since 5 years, she is also interested in the development of in vivo MS as a tool for guided surgery and intraoperative analysis. She has authored 140 publications (h-index 34), 10 patents, 12 book chapters and gave 110 conferences. In 2017, she was distinguished for her contribution in clinical mass spectrometry by the international distinguish award from MSACL. She was board member of the COST Action dedicated to MS Imaging and was involved in the foundation of the Mass Spectrometry Imaging Society. She recently was awarded a senior position at Institut Universitaire de France.

How you came to be involved in MSI?

I just came to move for a second post-doctoral fellowship by the end 2001 in a biology lab (Lab. of Annelides Neuroimmunology). Our initial objective was to perform single cell analysis by means MS from the leech neural cells starting with the biggest ones which are about 500 μm . We tried both MALDI-MS direct analysis and direct nanoESI infusion using patch clamped cells using tips that could be used for nanoESI. But by that time the instrument sensitivity (first QTOF series) was not good enough and we fell to obtain results. I decided then to try to move to perform direct tissue analysis with the idea of looking to the cells directly in the context of the tissue rather than trying to fish them and analyze them separately. Thus, I started in 2002 using MALDI-MS from model tissues to develop MALDI direct tissue analysis (or so-called MALDI profiling) and got very interesting results from rat brain sections in differential display analysis of supraoptic nucleus between control animals and animals injected with LPS to mimic a septic (presented at the ASMS, Orlando 2002). We demonstrated (see PMID: 12743525) that vasopressin signal was disappearing in the supraoptic nucleus in animals under LPS as expected because LPS leads to the liberation of the vasopressin. Then after these interesting results by direct tissue analysis, I moved to the MALDI-MSI to get the complete distribution of the peptides in the tissues.



Join the community and shape the future of MSI...

Don't miss... In the next issue

We are discussing MS Imaging with:



Alain Brunelle

From the Laboratory of Molecular and Structural Archaeology (CNRS and Sorbonne University, Paris)

To discuss how TOF-SIMS imaging in the field of cultural heritage and in particular for the analysis of old painting samples.

AND



Marta Sans Escofet

CPRIT TRIUMPH Postdoctoral Fellow
at MD Anderson Cancer Center,
Austin Texas

What do you think MSIS brings to the MSI field? What else would you like to see from the society?

The MSIS should help to build up a community around MS imaging. It is an opportunity for the field to grow up and to continue to evolve in both the development and application sides. I also think it is a great opportunity for the students and young researcher to learn more and, share and discuss their results with other scientists working with the same problematic.

Have you participated in OurCon and if yes what are your best memories? (please share photos if you have)

I have participated in many Ourcon conferences though not all. Probably, the first Ourcon conference in Spain remains one of my best memories because it was the beginning of the society building and it was a novel adventure. It was also still in the phase were MS Imaging was undergoing very fast many developments.

What drives your enthusiasm for the field of MS imaging?

Bringing a spatial dimension to MS was clearly something I got very enthusiastic with from the very beginning. This came along with taking up multiple scientific challenges for developing the technique which were extremely interesting. Finally, we always say, "seeing is believing" and generating images bring a direct view to answer many questions.

How do you think the field will be in 5-10 years from now?

At first, I would say it will broader and includes even more applications than already achieved. For sure, we will also see, at least for certain imaging modalities, improvement in speed, robustness and spatial resolution. I also expect that new imaging modalities might emerge in AIMS. The introduction of MSI into the clinical field as a routine tool still remains an open question that must be addressed. We are moving to in vivo real time MS imaging including topography, 3D reconstruction and multi-modal integration including augmented reality. Tomorrow will be a new dimension or MSI, 4D (real Time) and in vivo.

What are the main challenges and the biggest success you have encountered in your career and what do you think can be improved in the field of MSI?

The first main/challenge was to develop the imaging of proteins and especially using FFPE tissues from the tumor banks. This was a difficult, challenge but a big success. Especially we were really happy to be the first to unlock the MSI of FFPE tissue samples (PMID: 17477556). For long, many people in the MSI community though it was vain to try tackling the imaging of proteins, and that MS imaging was more devoted to metabolites, lipids and drugs. A second challenge in the field of MSI was to find a way to image mRNA. We developed for that a novel concept (TagMass) which enabled both mRNA and antigens imaging through the used of antibody or nucleotide probes labeled tags that were released by the laser of the MALDI through photocleavage (PMID: 17477556). The third one was the spatially resolved Proteomic guided by MSI (PMID: 23291530). Yet in my opinion the next challenge is to move forwards MSI to in vivo for human health. This is a huge challenge but important expected fallouts.



Join the community and shape the future of MSI...

NEXT EVENT!

2020 IMSI Poster Gala



Let's connect again and allow as many IMSI scientists as possible to present their quality work to the community. Speakers are invited at the 24hrs oral session to submit posters!

Register to attend the event here: [2020 IMSI Poster Gala Registration](#)

Click here to submit your poster abstract: [Poster Abstract Submittal](#)

Key Dates:

November 20th deadline for poster abstract submittal

November 23rd deadline for poster abstract accept/decline; letters will be sent

December 3rd deadline for poster upload into virtual environment

December 10th virtual browsing opens

December 15th-17th Interactive Poster Event with programming

On behalf of the organizing committee of the 24h-IMSI and the 2020 IMSI Poster Gala:

Tiffany Porta Siegel (on behalf of MSIS EC, Maastricht) & *Peggi Angel* (on behalf of IMSS EC, Charleston)

Webmaster: *Stacy Ho*

Poster Committee: *Marissa Vavrek*, *Kevin Schey*

What advice would you give to a student entering an MSc/PhD project?

I would advise first to pick up a project you really like and make the project that is given to you your own. Which means an important involvement and commitment to the project. I also advise never to think that something is impossible because it was never demonstrated nor published before. And finally, I would advise to hang on because challenging projects and experiments might not be directly successful and require willpower and determination. Thus, don't be afraid of challenges because challenges is the key to success. So, they need to believe in their project and keep staying enthusiastic regardless results are more difficult to obtain.

Professor Jörg Hanrieder
Gothenburg University, Sweden



Jörg obtained his MSc in Chemistry from the University of Leipzig (2005) and his PhD in analytical neurochemistry from Uppsala University, Sweden in 2010 under supervision of Jonas Bergquist and Malin Andersson. He continued with a Postdoc within SIMS and MALDI imaging in Andy Ewing's lab at Chalmers University in Gothenburg, Sweden. In 2015, he started his own group as Assistant Professor at the University of Gothenburg Med School as well as at the Queen Square Inst. of Neurology, University College London where he holds an appointment as senior PI. His current group includes 4 PhD students and 3 Postdocs (www.neurochem.se).

How you came to be involved in MSI?

First through lectures by Per Andren during my PhD courses in Uppsala and later when working with Malin Andersson who started at that time as PI just downstairs from our department. We had been working on looking at protein expression in laser microdissected motor neurons in ALS and we quickly set out to employ MALDI MSI to gain a comprehensive picture on spatial protein distribution profiles associated with ALS pathology in spinal cord.

What do you think MSIS brings to the MSI field? What else would you like to see from the society?

I think the MSIS as well as the Cost action from which it derived from is a fantastic platform for all academic and industrial MSI researchers and users from (almost) everywhere around the globe. Probably the most obvious thing I would like to see is one MSI/IMS society, though I appreciate the efforts made to interact in between both societies such as the Charleston meeting.

Have you participated in OurCon and if yes what are your best memories?

My first Ourcon was 2014 in Antalya and I had a chance to attend the meetings in Pisa and Charleston. I enjoyed the great collaborative atmosphere and the possibility to interact and connect to basically all fellow MSI colleagues.

What drives your enthusiasm for the field of MS imaging?

The potential it holds for elucidating biological processes at (spatial and chemical) resolutions not possible to obtain with classic imaging approaches. Not to mention all the potential within lipid and metabolite biochemistry for which there are no other probes (if you don't want to use radioisotopes).



MSI vacancies

Scientist (Bio)Analytical Chemistry

Cristal Therapeutics and M4I
Maastricht, The Netherlands

Post-doctoral researcher

Uppsala University
Uppsala, Sweden

For more information visit:

<https://ms-imaging.org/wp/view-jobs/>

How do you think the field will be in 5-10 years from now?

There are and will be more efforts to standardize MSI for more routine applications using the striking developments we see today with respect to new instrumental setups as well as robust assays for absolute quantification. This will ultimately broaden the acceptance of MSI in both academia (incl. non analytical departments) as well as pharmaceutical and biotechnology industry.

What are the main challenges and the biggest success you have encountered in your career and what do you think can be improved in the field of MSI?

Probably the most significant challenge (and success) we had was the characterization of low abundant neuropeptides and their neuroactive metabolites as well as their robust quantification across all sections and animals. This was ultimately the most important thing we had to solve already during my PhD (e.g. Hanrieder et al MCP 2011) as well as in my own lab (e.g. Michno et al JBC 2019) in order to understand key neurochemical processes associated with e.g. Parkinson's and Alzheimer's disease pathology. An improvement for the field, as mentioned above, will be to make MSI more accessible (and increase its acceptance) to non-analytical researchers. This is however already on the way and key leaders in the field both in academia and industry make a fantastic effort to accomplish this.

What advice would you give to a student entering an MSc/PhD project?

Attend and present at seminars, conferences and summer schools as early as possible and connect with fellow graduate students within and outside your lab! Have fun and always try to collaborate and be open and generous with your ideas and help as you will get much more out of your PhD that way both in terms of results and networking.

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