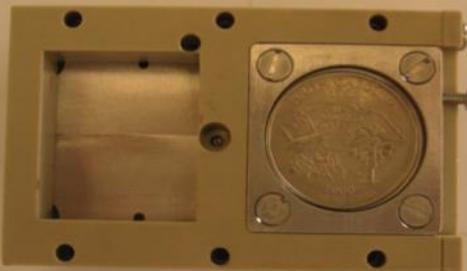




# UNC/Bruker Hall of FAIMS

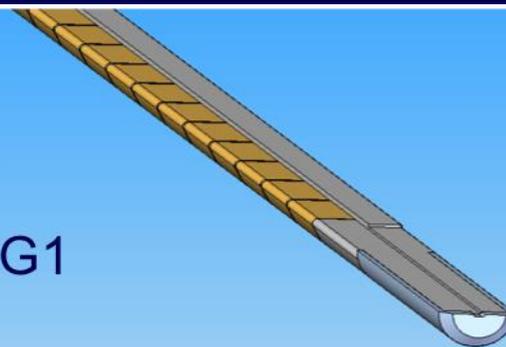


Pre Bruker – (PNNL)

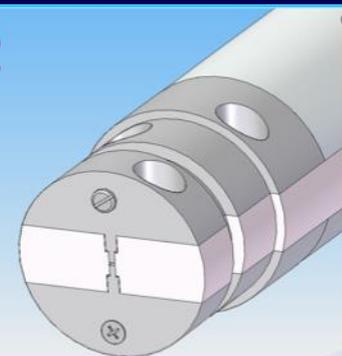


P. Remes, M. Ridgway  
2007 – modified TSQ 700

G1

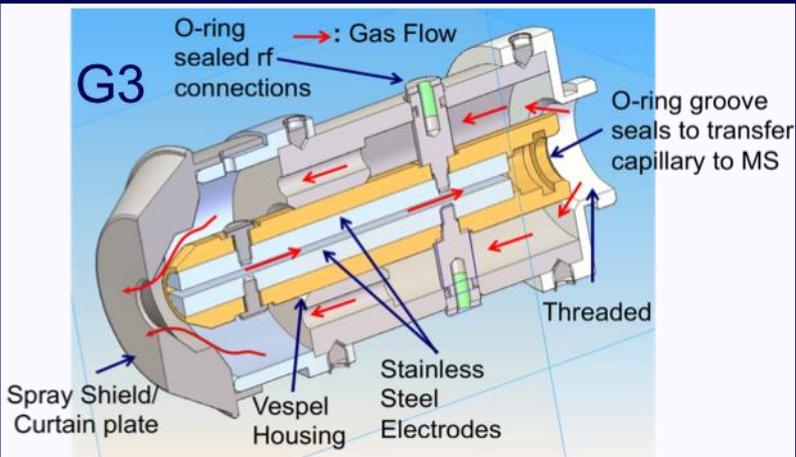


G2



M. Ridgway, A. Ferzoco--M. Park, D. Kaplan  
2008 – custom built quadrupole ion trap

G3



M. Ridgway, A. Ferzoco, S. Isenberg,  
A. Pilo, R. Harris--M. Park, D. Kaplan  
2010 – Bruker Esquire 3000

G4



S. Isenberg, B. Santiago, M.  
Campbell--M. Park, D. Kaplan,  
M. Ridgway, J. Kandel  
2012 – Bruker HCT Ultra

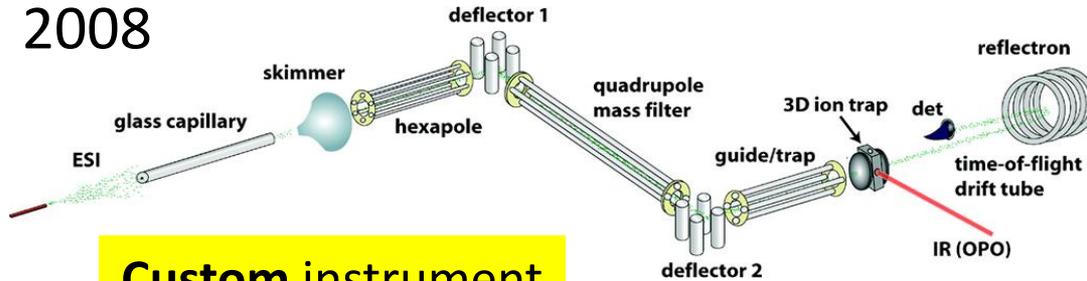
Post  
Bruker



M. Campbell  
2016 – Thermo LTQ/FT

# Polfer Group – Ardara Technologies

2008

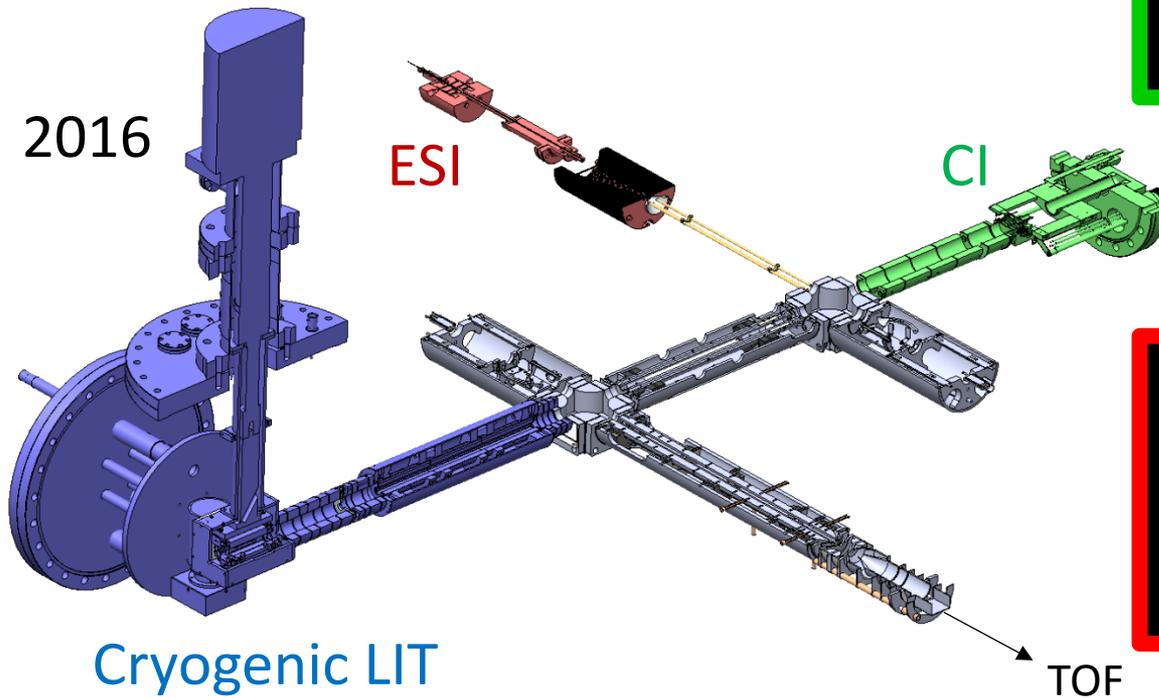


Custom instrument



- optimized for particular expts
- versatile modular set-up  
∴ add other functionalities
- collaboration with Ardara speeded up development

2016



Cryogenic LIT

TOF



- most suitable for novel/niche applications
- requires in-house technical support (machine & electronics shops, software development)

# Modifications in the McLuckey Lab

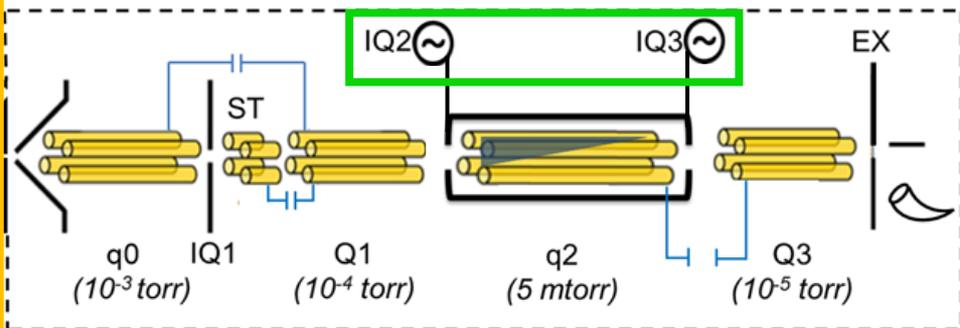
Jim Hager  
Sciex

Alice Pilo  
Purdue University

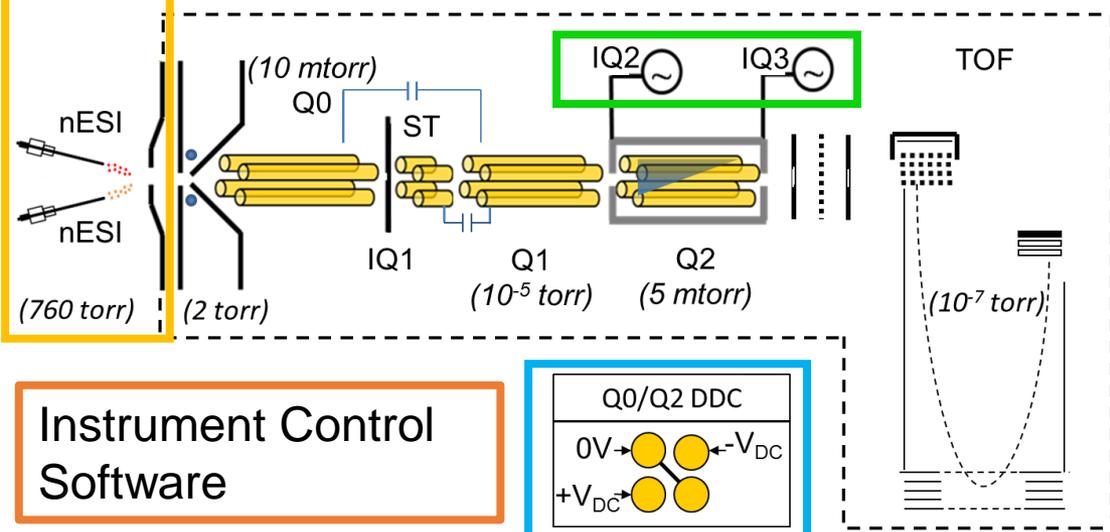
ASMS 2016



# The Instruments: QTRAP 4000

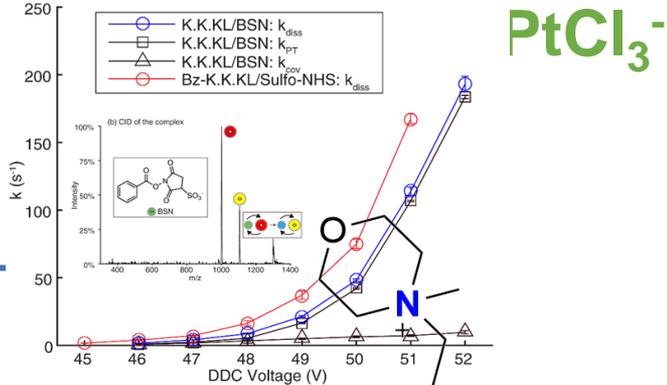
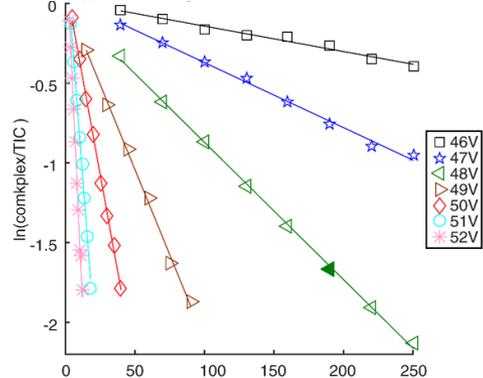


# TripleTOF 5600/QSTAR

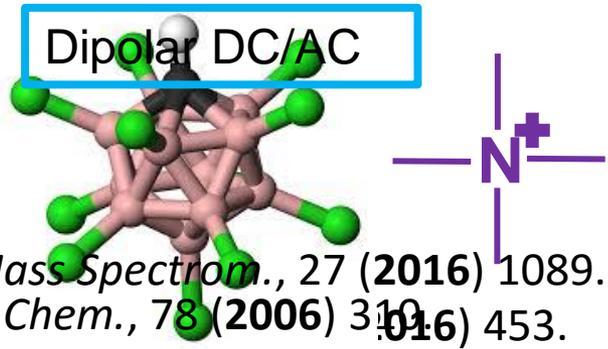
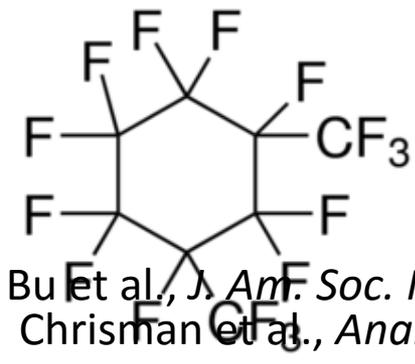
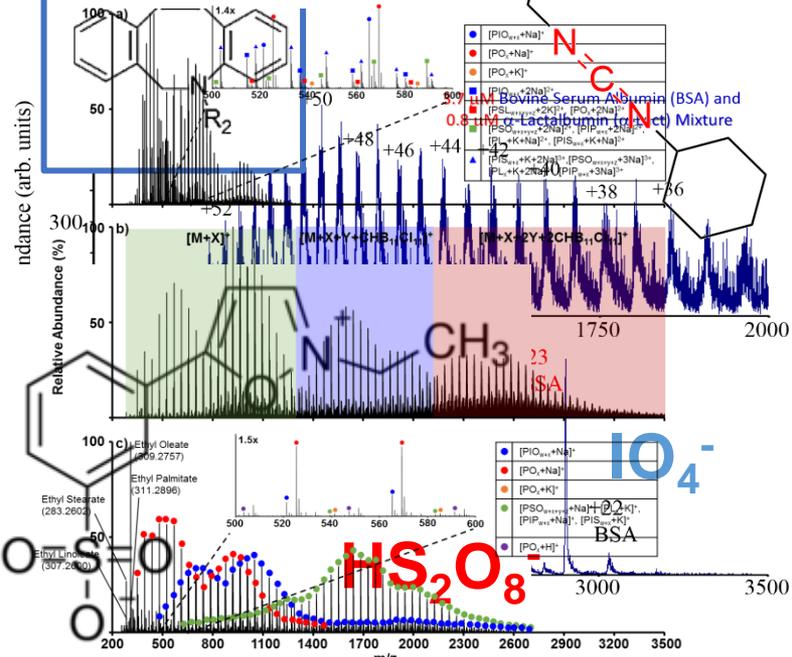


Instrument Control Software

Dipolar DC/AC



PtCl<sub>3</sub><sup>-</sup>



Bu et al., *J. Am. Soc. Mass Spectrom.*, 27 (2016) 1089.  
 Chrisman et al., *Anal. Chem.*, 78 (2006) 310-316) 453.

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# A Differentially Pumped Dual Linear Quadrupole Ion Trap Mass Spectrometer

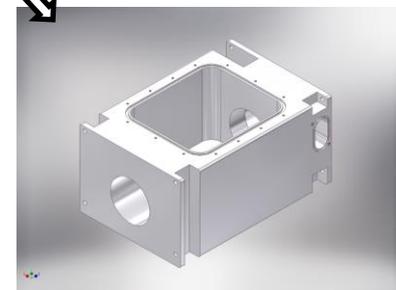
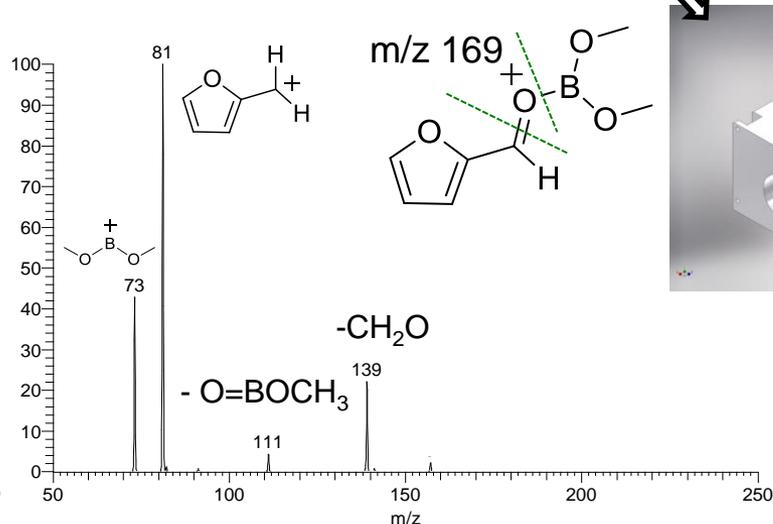
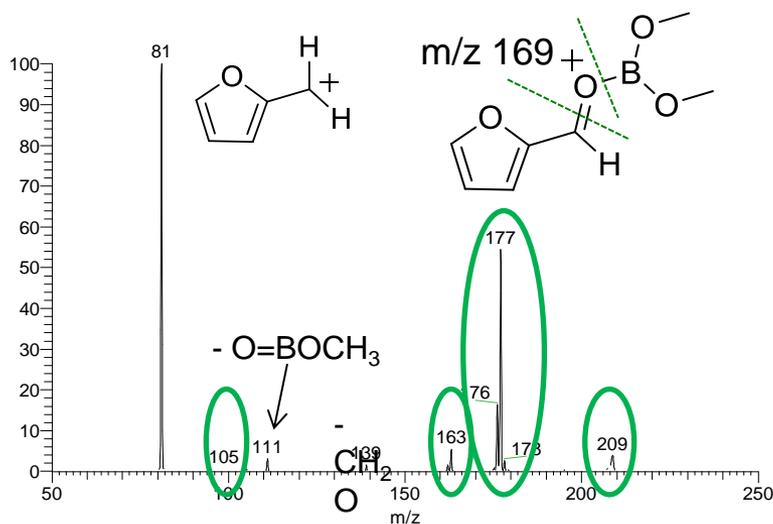
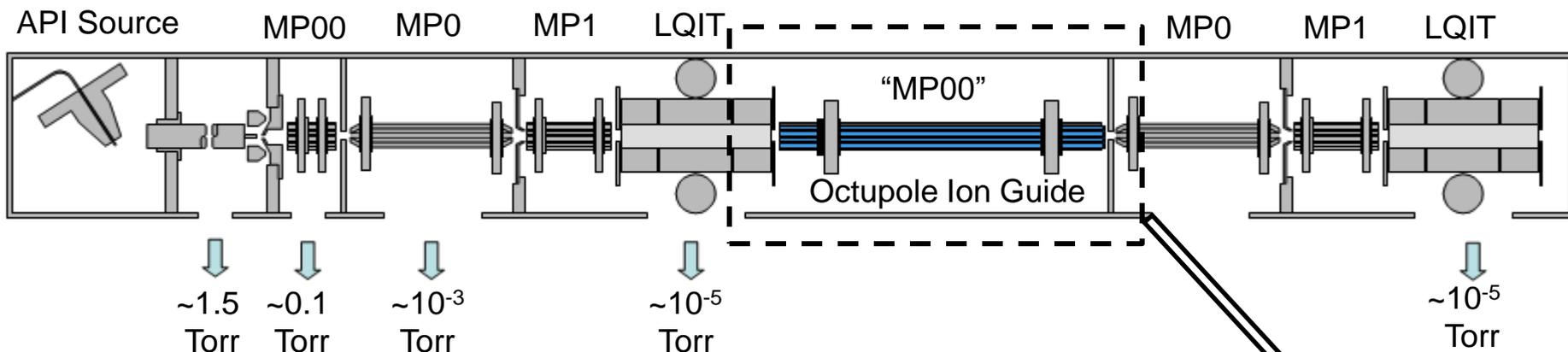
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Collaborating Labs:

- Hilikka Kenttämäa Labs & Jonathon Amy Facility at Purdue University
- Thermo Scientific

# Differentially Pumped Dual LQIT\*

Facilitate “clean”  $MS^n$  experiments free from interfering side reactions

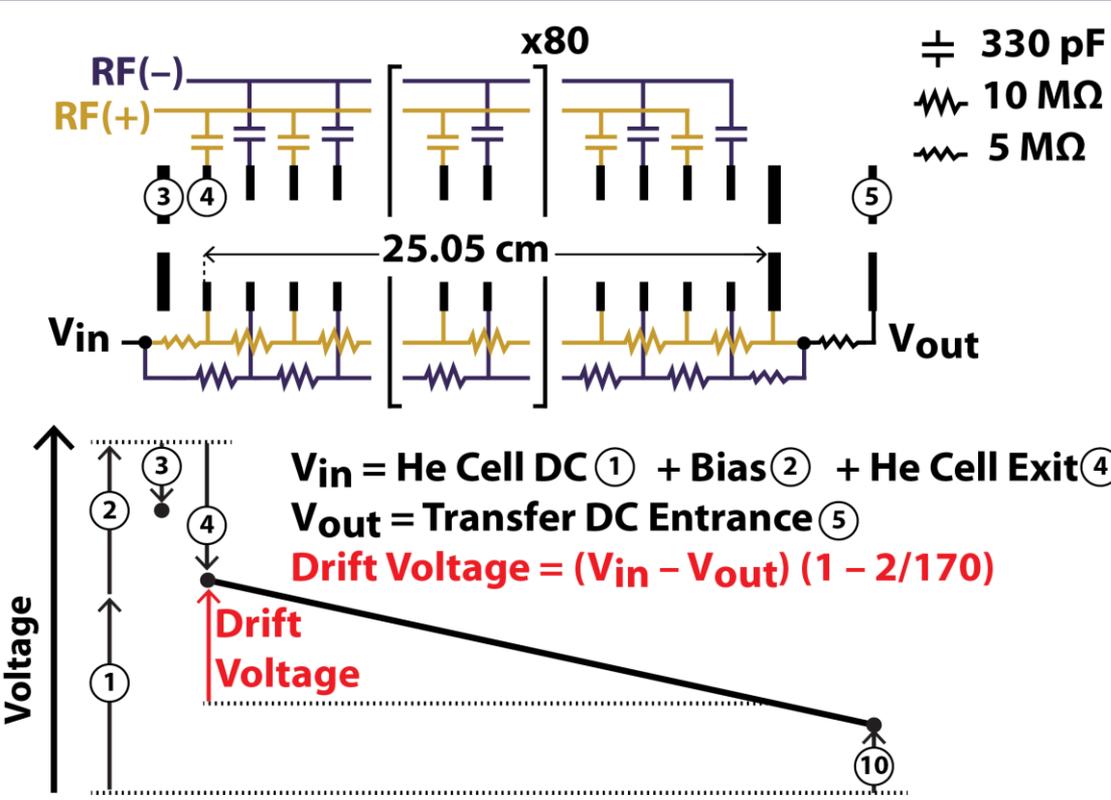
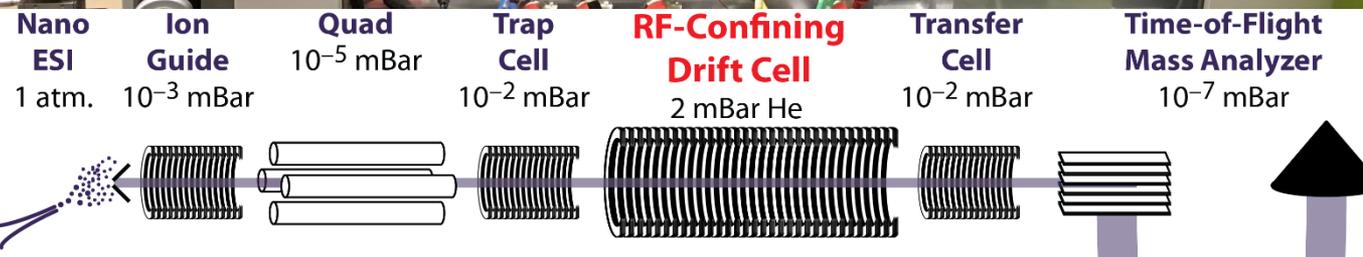


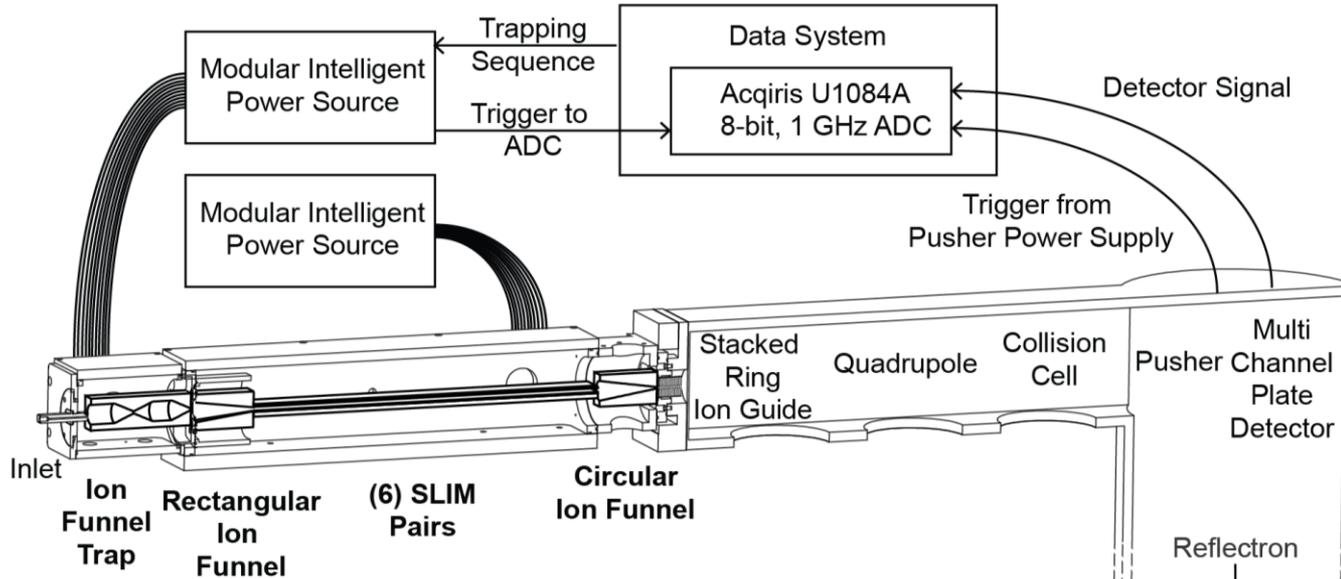
\*Benjamin Owen, Tiffany Jarrell, Jae Schwartz, Rob Oglesbee, Mark Carlsen, Enada Archibold, and Hilikka Kenttämä. *Analytical Chemistry*, 2013, 85, 11284



Sam Allen  
 Matt Bush  
**W**  
 UNIVERSITY of  
 WASHINGTON

Kevin Giles  
 Tony Gilbert  
 Waters  
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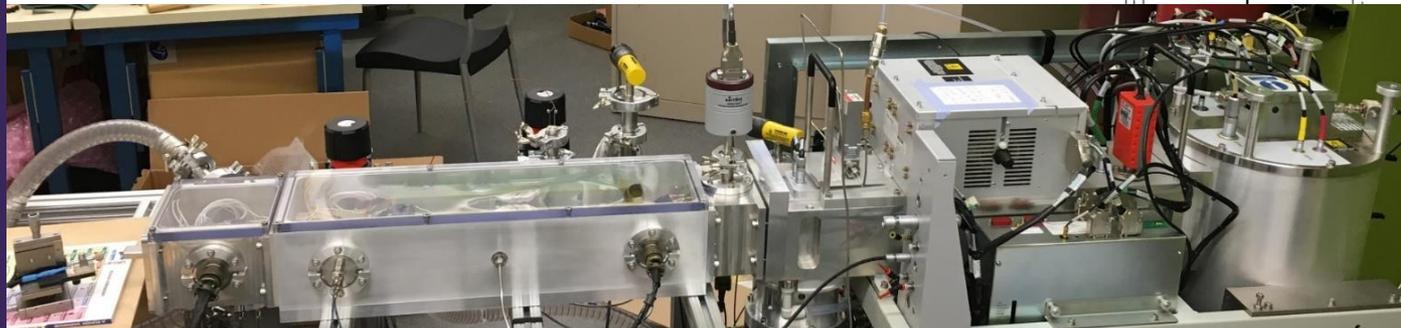


**Sam Allen**  
**Rachel Eaton**  
**Matt Bush**



**Kevin Giles**  
**Tony Gilbert**  
**Waters**

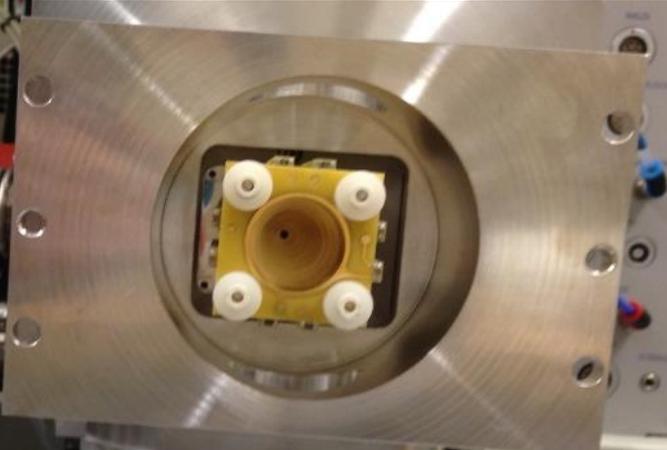
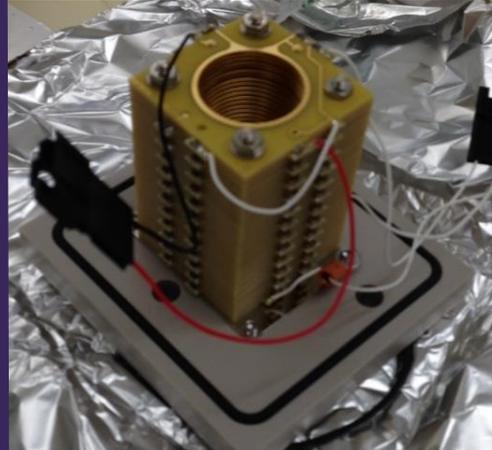
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**Original PEEK Ion Block**

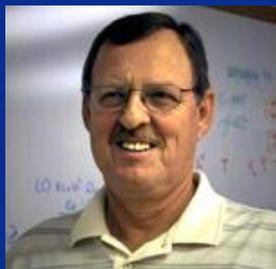
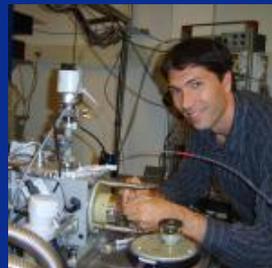
**NEW PEEK Ion Block**

**Coupling Chamber**



# A S

# ADVANCING MASS SPECTROMETRY *for* BIOPHYSICS *and* STRUCTURAL BIOLOGY



# 2016 Oral Sessions

1. Fundamentals: Ion-Ion and Ion-Neutral Interactions
2. Fundamentals: Ion Spectroscopy
3. Fundamentals: Metal Ion Cationization, Metal-Ligand Interactions and Catalysis
4. Fundamentals: Energetics and Mechanisms of Uni and Bimolecular Reactions
5. Fundamentals: Molecular Modeling and Quantum Mechanical Calculations in IM and MS
6. Fundamentals: Photodissociation
7. Fundamentals: Ion Activation and Dissociation