

## Posters (Continued from inside)

24. *Measuring full mobility spectra with a differential mobility analyzer having 100 independent detectors*, Luis J. Perez Lorenzo, Juan Fernandez de la Mora (Mechanical Engineering and Materials Science)
25. *Aluminum nitride microchip frequency comb to advance exoplanet discovery*, Ryan Petersburg (Physics)
26. *Splitting hairs from across the room: astrometric fiber positioning on the Dark Energy Spectroscopic Instrument*, David Rabinowitz (Physics/Wright Lab)
27. *Liquid Xenon purity test stand*, Zepeng Li (Physics /Wright Lab)
28. *Chronopixel : A monolithic active pixel detectors for high energy experiments*, Christian Weber (Physics/Wright Lab)
29. *Calibration instrumentation for HIRAX*, Emily Kuhn (Physics/Wright Lab)
30. *Calibration instrumentation for Simons Observatory (Thermometry)*, Sanah Bhimani (Physics/Cosmology/Wright Lab)
31. *Instrumentation and the HAYSTAC experiment*, Kelly Backes (Physics/Wright Lab)
32. *Searching for new forces using an optical trap*, Sumita Ghosh (Physics/Wright Lab)
33. *Quality assurance/control for ATLAS Phase II upgrade Barrel Tracker Stave Cores*, William T. Emmett (Physics/Wright Lab)
34. *PROSPECT neutrino detector*, Jeremy Gaison (Physics/Wright Lab)
35. *PROSPECT PMT module assembly at the Yale Wright Laboratory*, Ben Foust (Physics/Wright Lab)
36. *Deep Underground Neutrino Experiment*, Domenico Franco (Physics/Wright Lab)
37. *The Wright Lab contribution to ALICE*, Richard Majka (Physics/Wright Lab)
38. *Options for gain elements in a high rate Time Projection Chamber*, Nikolai Smirnov (Physics/Wright Lab)
39. *Application of 3D Printing in Radiotherapy*, Fanqing Guo (Therapeutic Radiology)
40. *Super-resolution microscopy developments in the Bewersdorf Lab*, Zach Marin (Cell Biology)

## Continue the discussion

Registrants have been added to the instrumentation interest group E-mail distribution list, unless they expressed a preference otherwise. Please also feel free to contact us at [instrumentation@yale.edu](mailto:instrumentation@yale.edu). We look forward to continuing to connect with you!

[instrumentation.yale.edu](http://instrumentation.yale.edu)

## Agenda

- 8.00 **Registration**
- 9.00 **Introduction**  
Peter Schiffer, *Vice Provost for Research*  
Jeff Brock, *incoming Dean of Sciences, FAS*  
Michael Crair, *Deputy Dean for Scientific Affairs, Yale School of Medicine*  
Karsten Heeger, Joerg Bewersdorf, *co-organizers of Yale Day of Instrumentation*
- 9.20 **Frontiers of Instrumentation at Yale - Lightning Talks**
- 10.45 Coffee break
- 11.15 **Yale Research Cores**  
*Instrumentation in Research Cores Across Yale* - Lisa D'Angelo (Provost Office), Ruth Montgomery (Yale School of Medicine), Chris Incarvito (Yale West Campus)
- 11.45 **Education and Training in Instrumentation**  
Undergraduate project: *A miniature window into the Universe* - L. Baker, K. Raghavan  
Training, classes and educational programs - James Nikkel (Wright Laboratory)
- 12.00 **Instrumentation in the Arts and other Disciplines**  
*Decoding cultural heritage objects* - Aniko Bezur (Institute for the Preservation of Cultural Heritage)  
*Frontiers in archaeological instrumentation* - Ellery Frahm
- 12.20 **Poster Session and lunch**
- 1.20 **Instrumentation Photos and Photography Contest**
- 1.30 **Frontiers of Instrumentation at Yale - Lightning Talks**
- 3.00 **Instrumentation at Yale: What's Next?**  
Ideas, suggestions, and next steps - open mic, comment board  
Summary and overview - K. Heeger, J. Bewersdorf
- 3.15 **Reception and Poster Session**
- 4.00 Program end

# Yale Day of Instrumentation

## Lightning Talks

### A.M. Session

1. *Frontiers of radioastronomy*, Laura Newburgh (Astronomy/Astrophysics)
2. *Adding optical structural characterization dimension to mass spectrometry*, Mark Johnson (Chemistry)
3. *Comprehensive imaging resources in the Yale Magnetic Resonance Research Center*, Todd Constable (Radiology and Biomedical Imaging / Neurosurgery)
4. *Compact optical spectrometers using fibers or on white-light sources with no speckle for neuro-imaging*, Hui Cao (Applied Physics)
5. *Novel methods in 3D bioprinting for vascular and intestinal replacement*, John Geibel (Surgery)
6. *Mega-scale instrumentation in particle physics*, Bonnie Fleming (Physics)
7. *Yale's ion mobility-mass spectrometry facility at the Keck center, and other developments to characterize electrospray plumes*, Juan Fernandez de la Mora (Mechanical Engineering)
8. *Dragonfly telescope*, Pieter van Dokkum (Astronomy)
9. *Detecting dark matter*, Reina Maruyama (Physics)
10. *DNA tracing and RNA profiling in single cells with multiplexed sequential FISH*, Siyuan (Steven) Wang (Genetics)
11. *Neurotechnology instrumentation development*, Joel Greenwood (Neuroscience)

### P.M. Session

1. *Computing with events*, Rajit Manohar (Electrical Engineering)
2. *Exoplanets, measuring tiny doppler shifts*, Ryan Blackman and Ryan Petersburg (Astronomy)
3. *Native mass spectrometry: A novel platform for discovering macromolecular protein assemblies*, Kallol Gupta (Cell Biology)
4. *Surface and interface physics using low energy electron microscopy and nano-optics*, Adrian Gozar (Applied Physics)
5. *Advances in scanning probe microscopy*, Eric I. Altman (Chemical and Environmental Engineering)
6. *Engineering molecular tools with DNA nanotechnology*, Chenxiang Lin (Cell Biology)
7. *Frontiers of cryo-EM*, Yong Xiong (MB&B)
8. *Precision isotope measurements*, Peter Raymond (FES)
9. *Force-Detected Absorption Spectroscopy in Solution With Optical Tweezers*, Ziad Ganim (Chemistry)
10. *Optical tweezers design for biological applications*, Vladimir Polejaev (Imaging Core, West Campus)
11. *Nanophotonics and nanomechanics*, Alex Bruch (Engineering)

## Posters

1. *Advanced Prototyping Center*, Arina Bykadorova Telles (Physics/Wright Lab)
2. *CCMI Confocal Microscopy Core overview*, Al Mennone (CCMI Confocal Core)
3. *Yale Isotope Geochemistry Center*, Annie Bauer (Geology and Geophysics)
4. *Flow Cytometry Facility on the YSM Campus*, Ann Haberman (Immunobiology and Laboratory Medicine)
5. *Intravital Imaging Facility*, Ann Haberman (Immunobiology and Laboratory Medicine)
6. *Yale Keck MS & Proteomics Resource: Supporting research through mass spectrometry*, TuKiet Lam (MBB/Keck Biotechnology Resource Lab/YSM)
7. *Science Hill Light Microscopy Imaging Core*, Joseph Wolenski (MCDB)
8. *Yale Facility for Light Scattering*, Sara Hashmi (SEAS)
9. *West Campus Analytical Core*, Mousumi Ghosh (West Campus Analytical Core)
10. *West Campus Imaging Core*, Vladimir Polejaev (West Campus Imaging Core)
11. *West Campus Materials Characterization Core*, Min Li (West Campus Materials Characterization Core)
12. *We are high throughput and you could be too*, Sheila Umlauf (Yale Center for Molecular Discovery)
13. *Yale Analytical and Stable Isotope Center*, Brad Errikla (Yale Institute for Biospheric Studies)
14. *Yale West Campus Cleanroom*, Lei Wang (Yale West Campus)
15. *Yale Wright Laboratory: Transforming discovery*, Karsten Heeger (Wright Lab/Physics)
16. *X-ray instrumentation for spectroscopic and diffraction characterization of materials*, Fred Walker (Applied Physics)
17. *Development of force-detected nanoscale absorption spectroscopy*, Ziad Ganim (Chemistry)
18. *Application of handheld Laser-Induced Breakdown Spectroscopy (LIBS) to develop quantitative calibration curves for the analysis of heritage copper alloys*, Elizabeth Coquillette (Institute for the Preservation of Cultural Heritage)
19. *Elemental mapping of cultural heritage objects using a large-area spatially resolving micro energy-dispersive x-ray fluorescence spectrometer*, Richard Hark (Institute for the Preservation of Cultural Heritage)
20. *Mahogany Species Identification by Thermal Desorption GC/MS*, Katherine Schilling (Institute for the Preservation of Cultural Heritage)
21. *Noninvasive techniques for detecting chemical changes in cultural heritage objects*, Katherine Schilling (Institute for the Preservation of Cultural Heritage)
22. *Portable laser ablation sampling for elemental and isotopic ICP-MS analyses*, Pablo Londero (Institute for the Preservation of Cultural Heritage)
23. *CyTOF support efficient detection of cells in suspension and tissue*, Ruth R Montgomery (Internal Medicine, Yale School of Medicine)