Welcome to the 2020 Yale Day of Instrumentation

instrumentation.yale.edu
Topics of Interest
Priority areas

Integrative data science and its mathematical foundations
Quantum science, engineering and materials
Neuroscience, from molecules to mind
Inflammation science
Environmental and evolutionary science

Cross-cutting initiatives

Graduate student support
Diversity across the STEM pipeline
Instrumentation development
Core facilities

“….engineering and applied sciences will play a vital role in implementing many of these ideas.”
2018 Yale Day of Instrumentation
Instrumentation Development Committee

Karsten Heeger, Department of Physics and Wright Laboratory (co-chair)
Joerg Bewersdorf, Department of Cell Biology and Department of Biomedical Engineering (co-chair)
Todd Constable, Radiology and Biomedical Imaging, Neurosurgery, MR Research Center
Pieter van Dokkum, Astronomy
Mark Johnson, Chemistry
Jun Liu, Microbial Sciences Institute, West Campus
Rajit Manohar, Electrical Engineering, Computer Science
Peter Raymond, Forestry and Environmental Studies, Yale Analytical and Stable Isotope Center
Peter Schiffer, Professor of Applied Physics and Physics
Lisa d’Angelo, Office of the Provost
Angelika Hofmann, Office of the Provost
Continue to develop the campus community around instrumentation development at Yale.

Make 1 new connection today!
Seek input on the needs and next steps in the instrumentation initiative at Yale.

Participate in a working group!
2020 Yale Day of Instrumentation

8.30 Registration - YSB Lobby

9.00 **Introductions and welcome** - Marsh Lecture Hall
   • Jeff Brock, Dean of Sciences, FAS
   • Michael Craig, Deputy Dean for Scientific Affairs, Yale School of Medicine
   • Karsten Heeger, Joerg Bewersdorf, co-organizers of YDoI

9.15 **Role of instrumentation and technology development in science** - Marsh Hall
   • Thomas Ullrich (Yale/BNL), *Instrumentation and technology development for the Electron-Ion Collider*

9.35 **Core Facilities and Instrumentation Development at Yale** - Marsh Hall
   • Lisa D’Angelo, Associate Provost for Research
   • Ben Myers, Director of Research Cores (Central)
   • Janie Merkel, Director of Research Cores (School of Medicine)

9.55 **Q&A and discussion about cores and instrumentation development** - Marsh Hall

10.05 **Communicating the excitement of instrumentation and technology** - Marsh Hall
   • Angelika Hofmann, Strategic Projects and Communications Advisor to the Vice Provost for Research

10.20 **What’s in a name?** - Brainstorming (facilitated by K. Heeger) - Marsh Hall

10.30 **Coffee break** - YSB Lobby

10.50 **Core Facilities and Instrumentation Development at Yale** - Marsh Hall
   • Center for Engineering Innovation and Design (CEID) - Joe Zinter
   • Chemical and Biophysical Instrumentation Center (CBIC) - Eric Paulson
   • Wright Lab Advanced Prototyping Center - James Nukkel
   • Neurotechnology Core - Joel Greenwood

11.50 **Instructions for the working groups** - Marsh Hall

12.00 **Lunch** provided for registered participants - pick up in YSB Lobby and walk to break out rooms
2020 Yale Day of Instrumentation

12.15 **Working group breakout sessions**: Instrumentation and technology development across Yale.
   - Quantum science - David DeMille, Eric Altmann - YSB 254
   - Neuroscience - Todd Constable, Michael Higley - YSB 101
   - Env. Sci/Ecology/Climate Change - Peter Raymond, Drew Gentner - YSB C142
   - Instrumentation development and core facilities - Lisa D’Angelo, Jun Liu - YSB 153
   - Instrumentation development, training, education - James Nikkel - YSB C143
   - Mass Spectrometry - Mark Johnson, Noah Plavansky - YSB 253
   - Instrumentation development in the arts and other disciplines - Anikó Bezur - YSB 251

2.30 **Photography and video contests** - Marsh Hall

2.45 **Results from working groups** - Marsh Hall

3:15 **Coffee and social hour** - YSB Lobby

4:00 Program end
Working Groups

**Quantum science**
David DeMille, Eric Altmann - YSB 254

**Neuroscience**
Todd Constable, Michael Higley - YSB 101

**Environmental Science, Ecology, Climate Change**
Peter Raymond, Drew Gentner - YSB C142

**Instrumentation development and core facilities**
Lisa D’Angelo, Jun Liu - YSB 153

**Instrumentation development, training, education, professional development**
James Nikkel - YSB C143

**Mass spectrometry**
Mark Johnson, Noah Plavansky - YSB 253

**Instrumentation development in the arts and other disciplines**
Anikó Bezur - YSB 251
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Collect your input and ideas for how instrumentation and technology development can best support the research and education mission of Yale.

Write a brief report within a month!
Working Group Questions

Role and opportunities of instrumentation and technology development?

What are the main challenges and hurdles?

What is missing? Where is the gap?

Top 3 suggestions for what Yale should invest in to be a leader in this field?

New ideas/models for shared technical support and infrastructure?

Possible sources of funding from outside of Yale?
“The Electron Ion Collider (EIC), to be designed and constructed over ten years at an estimated cost between $1.6 and $2.6 billion, will smash electrons into protons and heavier atomic nuclei in an effort to penetrate the mysteries of the “strong force” that binds the atomic nucleus together.”