



# Community Advisory Council

JoAnne Hewett  
Laboratory Director

Thursday, Sept. 21, 2023



# A Bit About Me



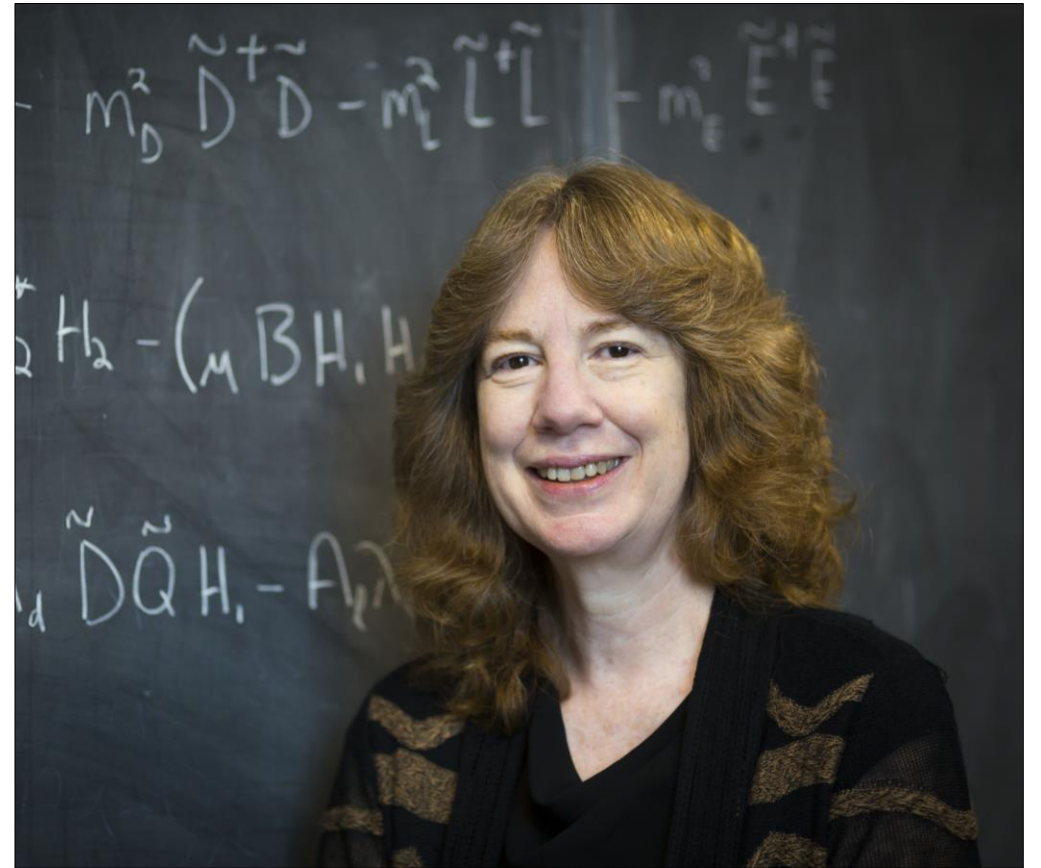
**JoAnne Hewett**

- 2012 Leads exploration of extra dimensions
- 1999-2009 Shepherds four grad students to PhDs
- 1994 Joins SLAC, now full professor
- 1988-1994 Postdoctoral research at University of Wisconsin, Argonne National Lab
- 1988 Earns PhD in theoretical physics from Iowa State
- 1979 Takes first physics course at Iowa State and is hooked
- 1978 Graduates Pleasant Valley High, excels at math and science but wants to be a musician

Photo: Brad Plummer, SLAC

# Career Highlights to Date

- Research in theoretical particle physics
  - Professor at Stanford University
- Science outreach
- Strategic planning
- Community leadership
  - Chair, American Physical Society's Division of Particles and Fields
  - Chair, High Energy Physics Advisory Panel
- Management experience at SLAC
  - Division Director, Science Directorate Deputy ALD
  - Q-NEXT QIS Center Deputy Director
  - Fundamental Physics ALD
  - Chief Research Officer



**This is the  
opportunity  
of a lifetime!**

# Two Enduring Core Values

**Safety**

**Diversity,  
Equity,  
Inclusion &  
Accessibility**

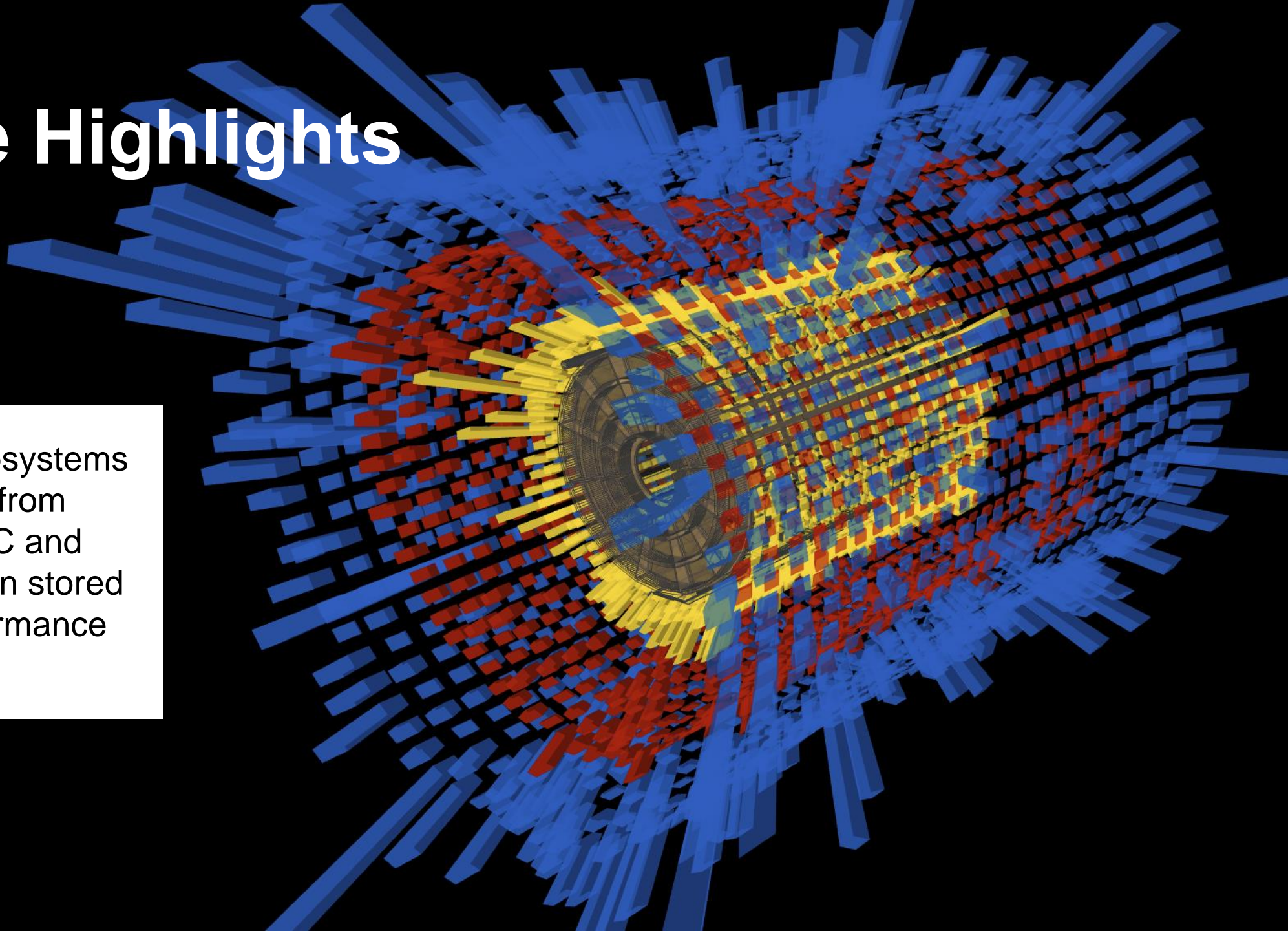
# Important Initiatives

- Advancing the science
- Modernizing and revitalizing infrastructure
- Meet-and-greet, listening tour with staff



# Science Highlights

All sPHENIX subsystems have taken data from collisions at RHIC and the data has been stored in the high-performance storage system.

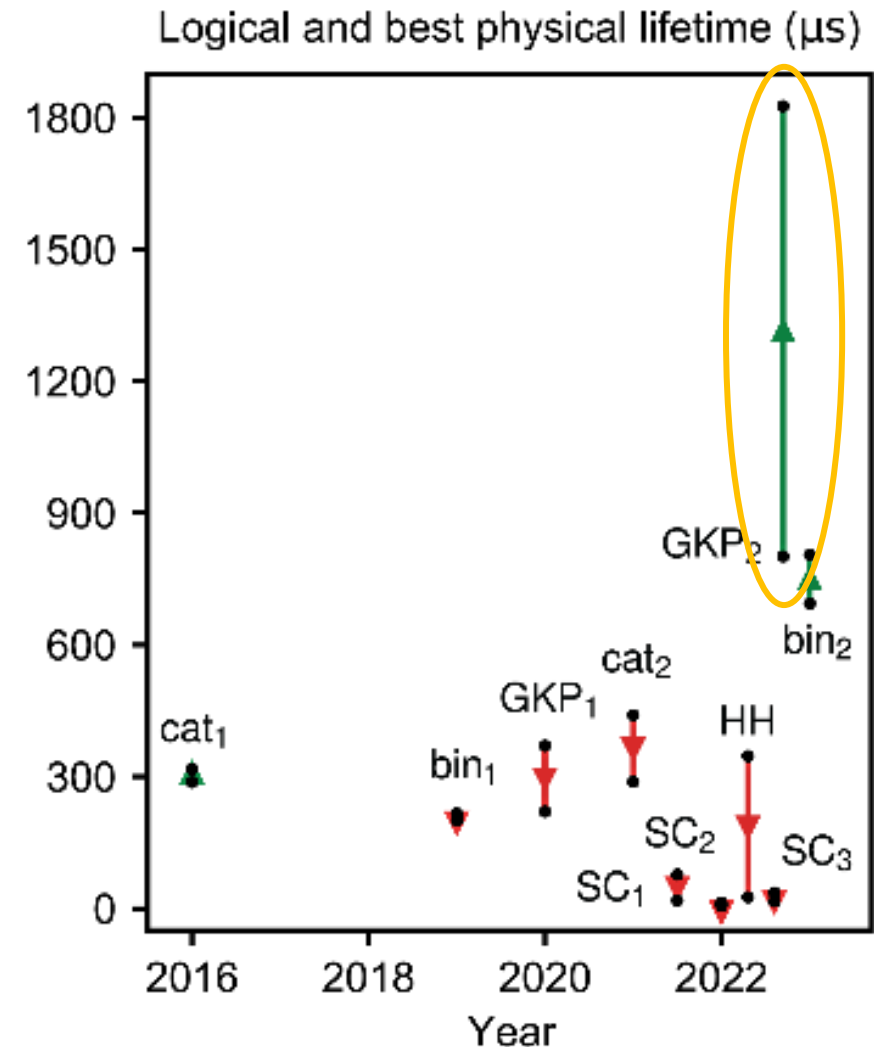


## Science Highlights

# Real-time Quantum Error Correction Beyond Break-even

- First demonstration of beyond break-even real-time quantum error correction
- Set the new record in superconducting circuits for (i) logical qubit lifetime, (ii) QEC gain, (iii) logical error probability per cycle

50 | *Nature* | Vol 616 | 6 April 2023





# Science Highlights

## Duckweed Engineering

Featured in *Scientific American*

- Genetically engineered duckweed shown to produce 7 times more oil per acre than soybeans

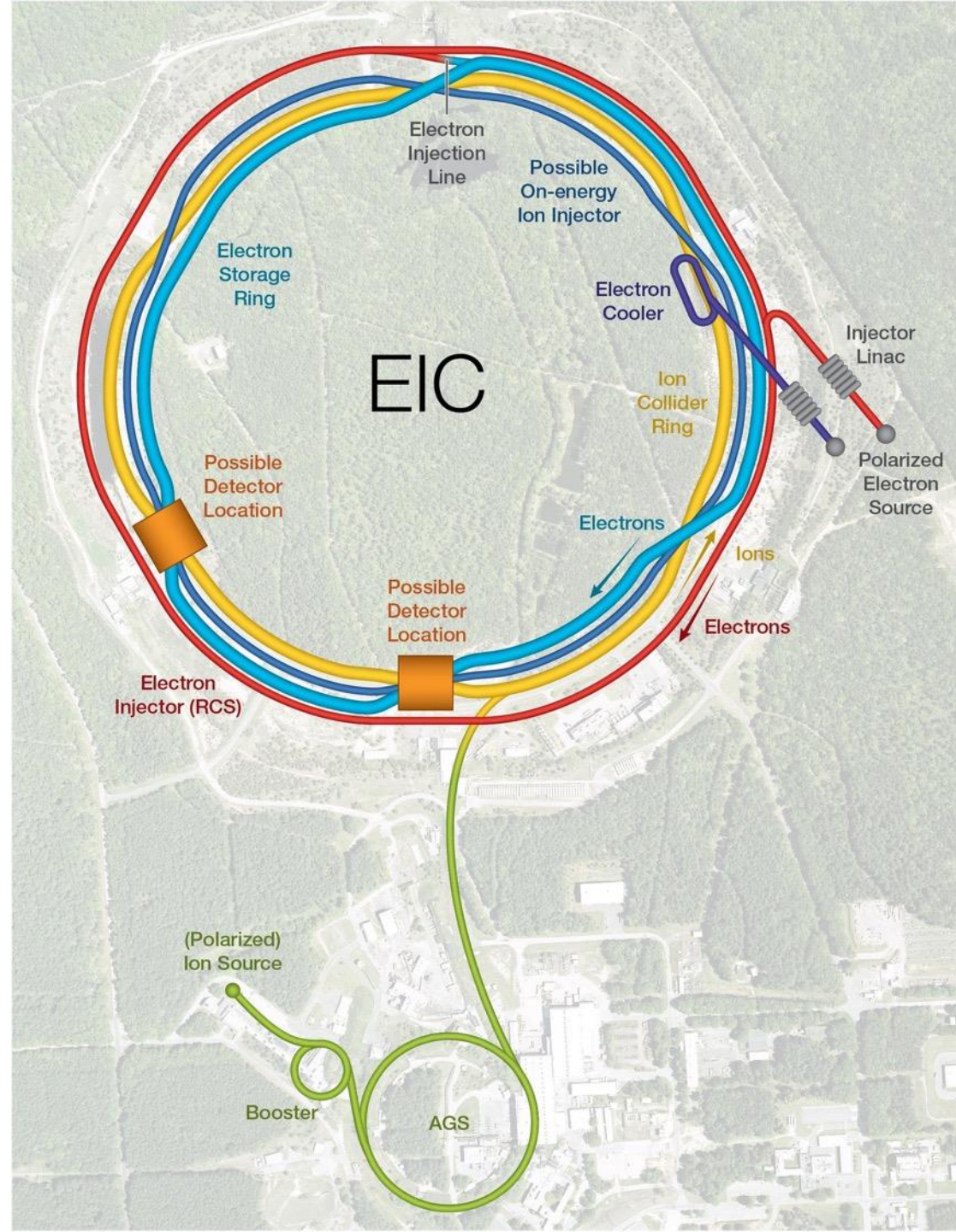
J. Shanklin, et al., *Plant Biotechnology Journal*



Credit: Thomas Fuchs

# Recent Milestones for the Electron-Ion Collider

- DOE Inflation Reduction Act Funding enables the start of long-lead procurement in 2024
- ePIC Collaboration members elected their first spokespeople:
  - Spokesperson John Lajoie
  - Deputy Spokesperson Silvia Dalla Torre
- Polarized electron source demonstrated EIC performance parameters with significant margin

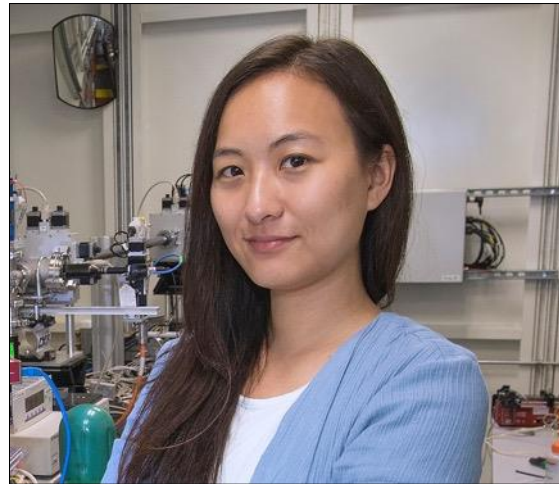


# Spotlight on Staff

## DOE Early Career Awards



**Elizabeth (Liza) Brost**  
Physics Department  
*'Shining Light on the Higgs Self-Interaction'*



**Esther Tsai**  
Center for Functional Nanomaterials  
*'Virtual Scientific Companion for Synchrotron Beamlines'*

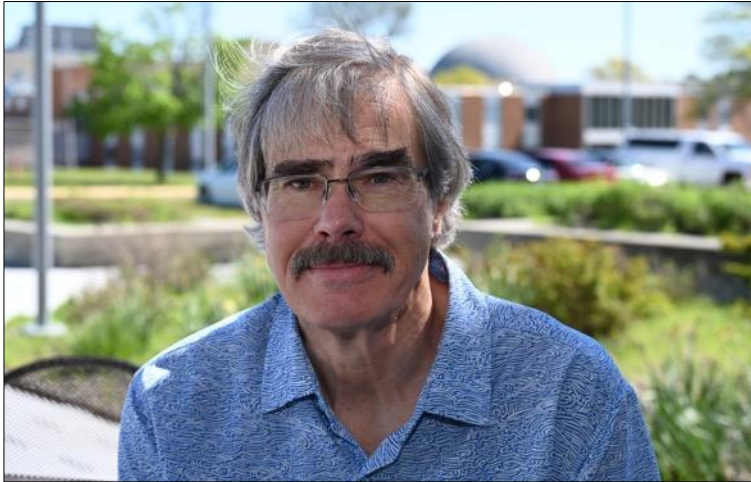


**Derong Xu**  
Electron-Ion Collider  
*'Luminosity Maximization with Flat Hadron Beams'*

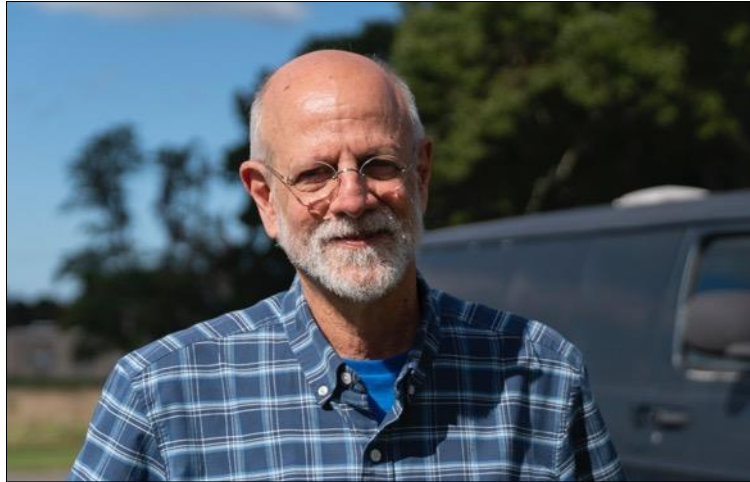


**Joanna Zajac**  
Instrumentation Division  
*'Interactions of QDs' Fast Light in Rb Vapors for Hybrid Quantum Information Science and Technology'*

# Spotlight on Staff



**John Tranquada**  
Elected to the  
National Academy of Sciences



**Steve Musolino**  
Presented the Secretary of Energy  
Achievement Award for the  
Ukraine Detection Assistance  
Team



**Stasia Scocca**  
Named an Employee of the Year  
by *CAREERS & the disABLED*  
*Magazine*

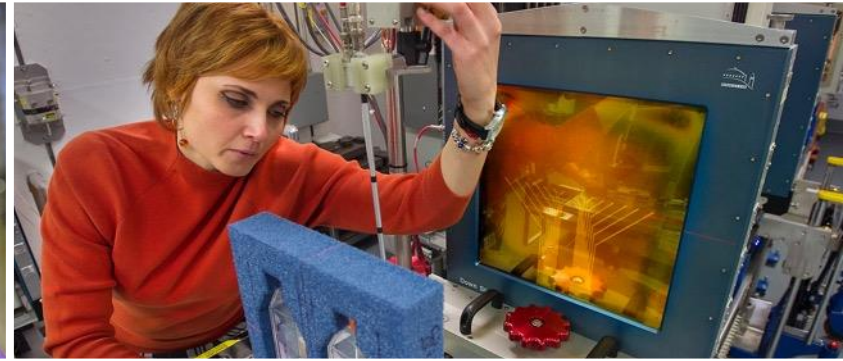
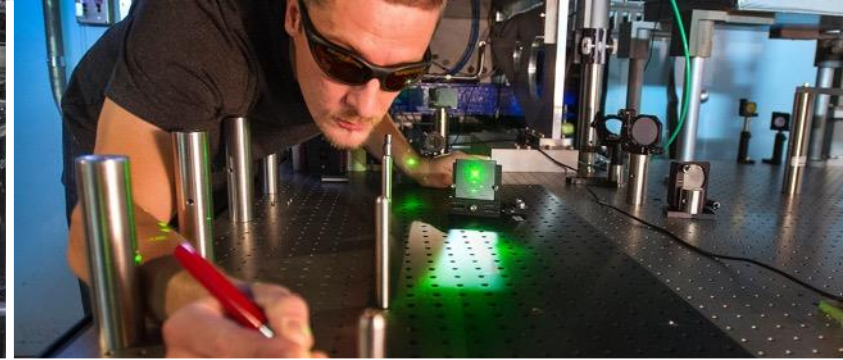
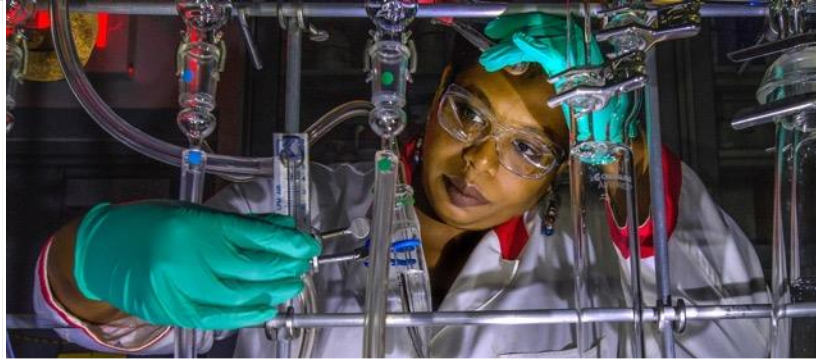
# Spotlight on Staff

## Brookhaven Lab and Brookhaven Science Associates

Named United Way of Long Island's  
Corporate Champion of the Year

*'For their ability to mobilize and enhance the  
community through innovation as well as its  
decades of support for neighbors in need.'*





**Thank you for coming.  
And thank you for welcoming me.**