Yale’s
Nuclear and Particle Physics
(Experimentalists)

Graduate School Virtual Open House
February 24, 2022
Faculty Members

Keith Baker
Helen Caines
Reina Maruyama
Bonnie Fleming
David Moore
Sarah Demers
Karsten Heeger
Paul Tipton
Our Questions:

What does the invisible universe consist of?

What is dark matter?

What are the properties of neutrinos?

What is the structure of matter?

What are the states of matter in the early universe?
Some of our favorite things...

- Instrumentation
- Data Analysis & Machine Learning
- Collaboration
- Interdisciplinarity
- Public Engagement
Our Values

• Community
• Belonging
• Respect
• Mentoring
• Equity
• Diversity
• Inclusion
Research topics

• We’re engaged in many research projects – too much to cover in ten minutes – but I’ll give you a sense of the range of projects in
  • Relativistic Heavy Ions
  • Neutrinos
  • Fundamental Symmetries
  • Elementary Particles

• You’ll hear more from individual faculty members tomorrow, and you can find out more information on our websites
Relativistic Heavy Ions

ALICE at the LHC

STAR at Brookhaven

Engaged in a future electron-ion collider at Brookhaven National Lab

Helen Caines
Neutrinos

ArgoNeuT at Fermilab

LArIAT at Fermilab

MicroBooNE at Fermilab

Short Baseline Near Detector at Fermilab

DUNE
Neutrinos

PROSPECT

Project 8

Karsten Heeger
Neutrinoless Double Beta Decay and Fundamental Symmetries

nEXO

EXO-200

SIMPLE experiment
levitating microspheres

David Moore
Neutrinoless Double Beta Decay
Dark Matter Searches

CUORE at Gran Sasso

CUPID

Karsten Heeger, Reina Maruyama
Dark Matter

HAYSTAC at Yale

COSINE-100 in South Korea

DM-ICE

IceCube in Antarctica

Reina Maruyama
Thank you for your attention and have a great virtual visit!