
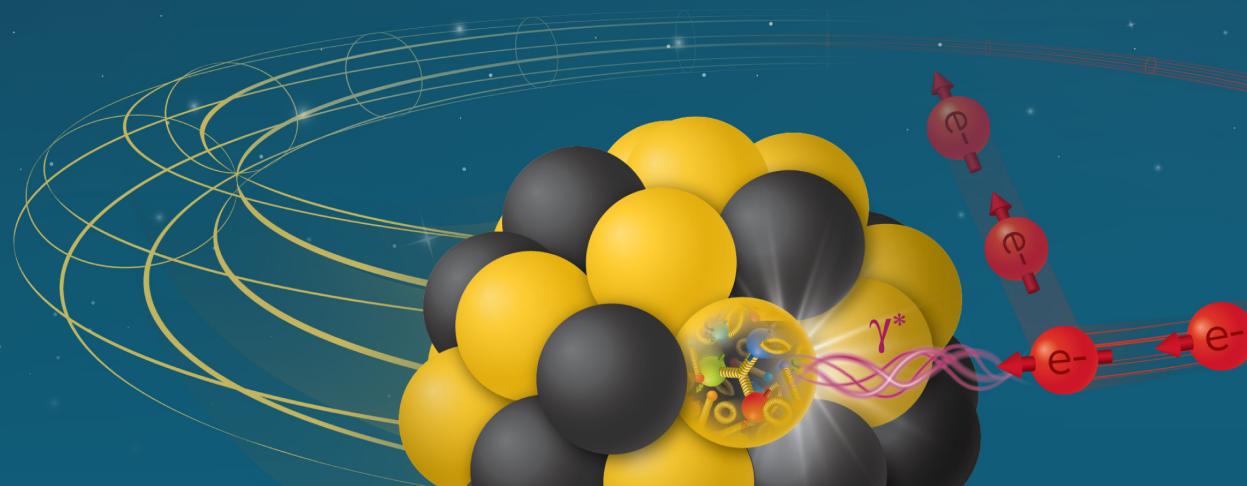


Outreach News

Marta Ruspa and Elke Aschenauer
on behalf of the EIC-UG/ePIC Outreach Group

ePIC Collaboration Meeting
Frascati, January 24th 2025

Electron-Ion Collider 



A EIC-UG/ePIC Outreach Group was born!

- Outreach concept presented by Elke at RRB meeting in June '24 and at Lehigh EIC-UG /ePIC <https://indico.bnl.gov/event/20727/contributions/93765/attachments/56042/95896/EIC.ePIC.OutReach.pptx>
- Asked for **endorsement forming a working group (WG) spanning the EIC-UG / ePIC** at the September EIC-UG steering committee meeting including the ePIC spokespeople
- Recruitment of the WG members: would like to avoid to have elections as it should be a group of volunteers endorsed by their country
 - contact country PIs to nominate a member
 - would like to have people from Asia, Europe, Afrika and Americas
 - everybody who wants to do real work is of course welcome
- **Following members have been nominated:**
 - Senegal Dr. Sokhna Bineta Amar
 - France: Dr. Silvia Niccolai
 - Czech Republic: Prof. Jana Bielcikova
 - Taiwan: Prof. Yi Yang
 - UK: Prof. Rachel Montgomery
 - Armenia: Dr. Hrachya Marukyan
 - India: Prof. Md Nasim
 - Japan: Prof. Taku Gunji
 - Israel: Prof. Zvi Citron
 - Italy: Marta Ruspa

Mailing list: eic-outreach-wg@lists.bnl.gov,

Website (soon): <https://wiki.bnl.gov/EPIC/index.php?title=EICOutreach>

First steps taken for/at this meeting

- **Poster contest**

Not only fun and people involvement but also way to collect

- **images documenting these early years**
- **material for outreach**

- **Photo contest**

→ **Proposal to have regular such contest calls at each collaboration meeting**

→ **Plan to organize a repository of the collected material**

First steps taken for/at this meeting

- **Poster contest**
 - Category 1: A poster on **EIC Science or the ePIC detector** for **high-school students**
 - Category 2: A poster on **EIC Science or the ePIC detector** for **scientists, not experts in ePIC, EIC or DIS**
 - Category 3: Accelerator - posters on the **EIC accelerator**, for **scientists, not experts in accelerators/colliders**

Call will be left open until mid June and posters awarded in summer EIC-UG/epic meeting

- **Photo contest**

Instructions for poster contest

If you are interested to participate please enter your information into the following word file PosterContest.docx

https://brookhavenlab.sharepoint.com/:w:/s/EICPublicSharingDocs/Ec0kq7PEzqNCq1CLMZbwDZgBz_fpveRuLlJjaR1u5HYrBA?e=9oeAg8

To submit your poster please post to

Category 1:

<https://brookhavenlab.sharepoint.com/:f:/s/EICPublicSharingDocs/EhmXoa-n2j1lgRnDBuh-foEBrd9dD4vr6I9xell0D3UuvA?e=ISfaQb>

Category 2:

https://brookhavenlab.sharepoint.com/:f:/s/EICPublicSharingDocs/EgrUHNNbNT1Cm-iV_8rqVPOBUtKw82qNv03oLJKaFqib7Q?e=htnozO

Category 3:

<https://brookhavenlab.sharepoint.com/:f:/s/EICPublicSharingDocs/EjlAVcbPJYpCsisLTVKELtQBJmzV3i-QDWWHV818RHVUVg?e=lvqcLT>

The name of the file should please contain your name, the category you want to submit to as well as if it is a poster on science or the detector. >

Call will be left open until mid June and posters awarded in summer EIC-UG/epic meeting

Photo contest



Photos to be submitted
by a member of ePIC
Max 3 photos per member.

Max two preferences could
be expressed.

15 photos received
129 people voted



Photo contest



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Survey of existing initiatives

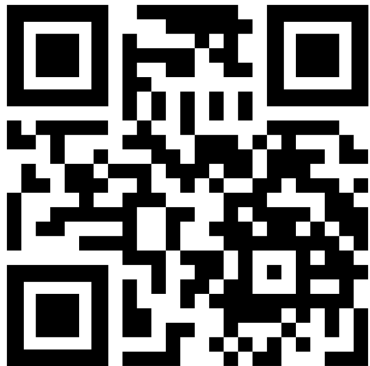


s.google.com/forms/d/e/1FAIpQLScBL8BPAY2-kgbu2blvhrYAqX_e6b660vEidaFvEw_4oFFI

COVID-19 – Doman... 10 scoperte scientif... INFN-Kids – La fisic... Siti nucleari – Arpa ...



EIC-UG/ePIC Existing Outreach



Institute *
Your answer

Your name and e-mail address *
Your answer

Other outreach materials or resources
(e.g.photos, posters, brochures, leaflets, public talk materials, demonstration activities/physical demonstration kits)
Your answer

Websites
(e.g. public outreach sections of university/laboratory/fundamental research dedicated EIC related websites ...)
Your answer

Funding opportunities
(e.g. student projects/internships, student travel, outreach events, material development)
Your answer

Social media accounts
(e.g. instagram, tik tok)
Your answer

Other outreach materials or resources
(e.g.photos, posters, brochures, leaflets, public talk materials, demonstration activities/physical demonstration kits)
Your answer

Any student learning materials or products
(e.g. Summer schools, masterclasses)
Your answer

Social media accounts
(e.g. instagram, tik tok)
Your answer

Other online media
(e.g. podcasts YouTube videos)
Your answer

Other topics (e.g. not covered by above)
Your answer

Submit Clear form

Next steps

When we will have a picture of all existing initiatives we will

- **organize** material in categories/repositories
- make, when possible, material/initiatives **shareable/usable by all collaborators** in their counties
- start promoting/organizing **new initiatives**

EXAMPLE OF EXISTING ACTIVITIES INSIDE ePIC

Hands-on

Interesting suggestion from Fernando Flor (Yale Univ)

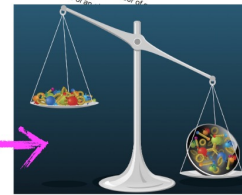
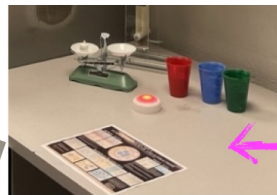
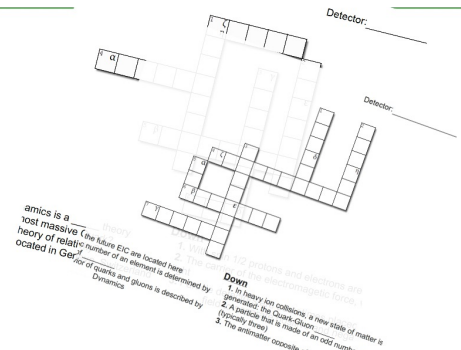
<https://indico.jlab.org/event/855/sessions/2866/#20240722>

- «Let us smash some protons»
exercize with Jupiter Notebook

The collage includes several educational components:

- Computer Programming:** A Jupyter Notebook interface showing Python code for histograms and a question: "Question: What grade are you?".
- Energy/Momentum Conservation:** A diagram showing an electron and a proton before and after an interaction, with a "Fundamental constraint" box.
- Let's "smear" our results:** A code snippet for creating a 2D histogram of detector vs. True Energy.
- Where does the hadron mass come from?:** A diagram of a proton showing its internal quark structure (u, d, u) and associated masses: "Up quark mass - 2 MeV", "Down quark mass - 5 MeV", and "Proton mass - 1000 MeV". It also asks "Where does the 'missing' mass of the proton come from??"

- Escape room



ePIC Outreach News

Videogames

<https://gamedev.msu.edu/quantum3/>

TEAM

Huey-Wen Lin – Principal Investigator

Brian Winn – Executive Producer

William Jeffery – Producer

Tristan Özkan – Game Designer and Programmer

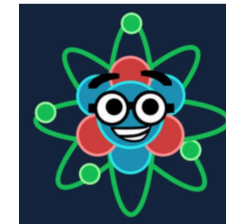
Harrison Sanders – Game Designer and Programmer

Rebecca Roman – Sound Designer

Roman Firestone – Artist

Colleen Little – Artist

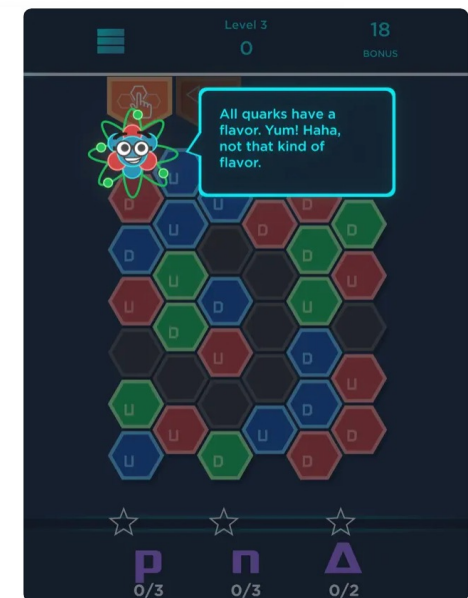
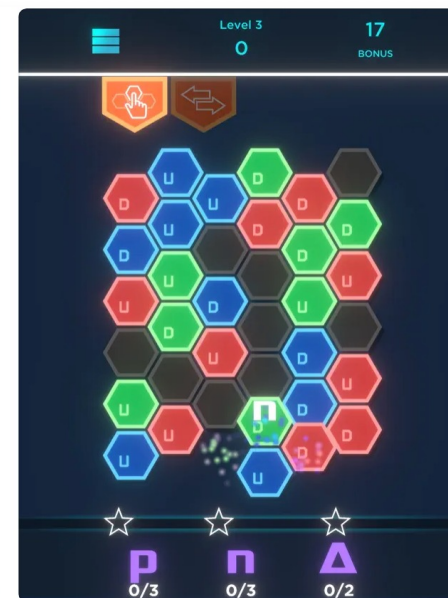
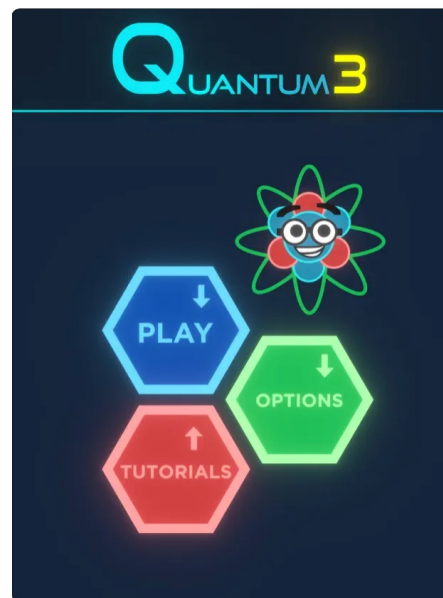
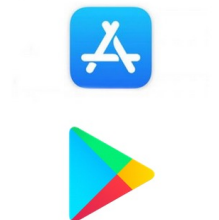
Quantum 3




Quantum 3 is an educational match-3 game for all ages where fun meets quantum physics!

Learn about quarks and baryons, learn about the mysteries of fundamental physics and deploy antimatter to clear the way! You'll match and swap quarks (and learn about) the baryons you need for each objective. Puzzle out the quantum properties of color, flavor and spin. So get in and start your quantum-venture! Quantum 3 is puzzle-matching at its finest and a great intro to the world of particle physics!

Release Date: January 2019





Podcasts





[Home](#) [About](#) [Feedback](#) [Episodes](#) [Guests](#)

Strong Interactions is a podcast about exploring a new frontier in nuclear physics at the upcoming Electron-Ion Collider, by Maria Żurek and Markus Diefenthaler.

LISTEN ON  Spotify

 Listen on Apple Podcasts

Listen on  amazon music

 PodBean

Summer schools

- CFNS EIC QCD Summer School at Stoney Brook since 2019
- Summer School in **Europe**:
[Calabria, Italy 2023](#)
[Spain 2025](#) (see Charlotte's talk on Monday)
- 1st EIC QCD School for **Asia**: [India 2024](#) – to be run across Asian EIC participating countries

EIC Latin America

Pachuca, Hidalgo → at the “Outskirts” of Mexico City. About 1 hour drive from any of the two Mexico City airports

Slide from Daniel (jdtt@ku.edu)

<https://indico.ku.edu/event/478/>

Program: May 19 – 21, 2025

- Scientific program starts on May 19 in the morning
- Excursion to the Teotihuacan pyramids on Tuesday, May 20 in the afternoon
- On May 21 overlaps with the annual meeting of the Mexican Physical Society high-energy particle and nuclear physics division (May 21-23). The EIC Latin America meeting will finish on May 21, around lunch time, but all are invited to join the “Mexican APS DNP”



IDEAS FOR NEX INITIATIVES

more in Elke's previous talks, e.g.

<https://indico.bnl.gov/event/20727/contributions/93765/>

Mobility programs

- Summer programs for Undergrads and PhD students both **Scientists and Engineers**

US: most DOE sponsored programs are only for US nationals & green card holders

→ establish an exchange program to spend a summer at a **US national lab involved in EIC**

Develop mobility program such that **student from country A participates in project at country B** → hardware / engineering projects might be beneficial

- Opportunities for **Scientist at all career stages**

(Support for visiting scientist program has long tradition both at BNL and Jlab)

Getting inspired by LHC-related activities

- could join the **International Particle Physics Outreach Group (IPPOG)**

- a recognized pillar for HEP → integrated in European Strategy for Particle Physics

2013: Outreach and communication in particle physics should receive adequate funding and be recognized as a central component of the scientific activity. **EUROPEAN PARTICLE PHYSICS COMMUNICATION NETWORK (EPPCN)** and IPPOG should both report regularly to the Council

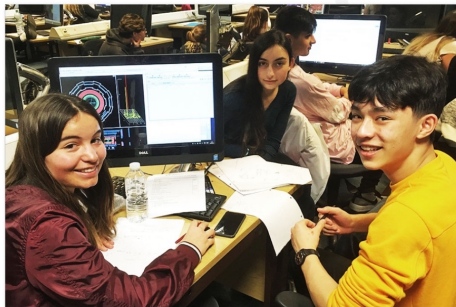
Two related domains & groups

Communication: EPPCN

- Develop messages & strategies
- Optimise platforms & networks
- Create effective material

Education & Outreach: IPPOG

- Further develop **direct contact with public**
- Build trust in & understanding of scientific process
- Train the next generation of scientists
- **Share good practises across the community**



EPPCN: <https://espace.cern.ch/EPPCN-site/layouts/15/start.aspx> - [/EPPCN Web Page/Home.aspx](#)

IPPOG: <https://ippog.org>

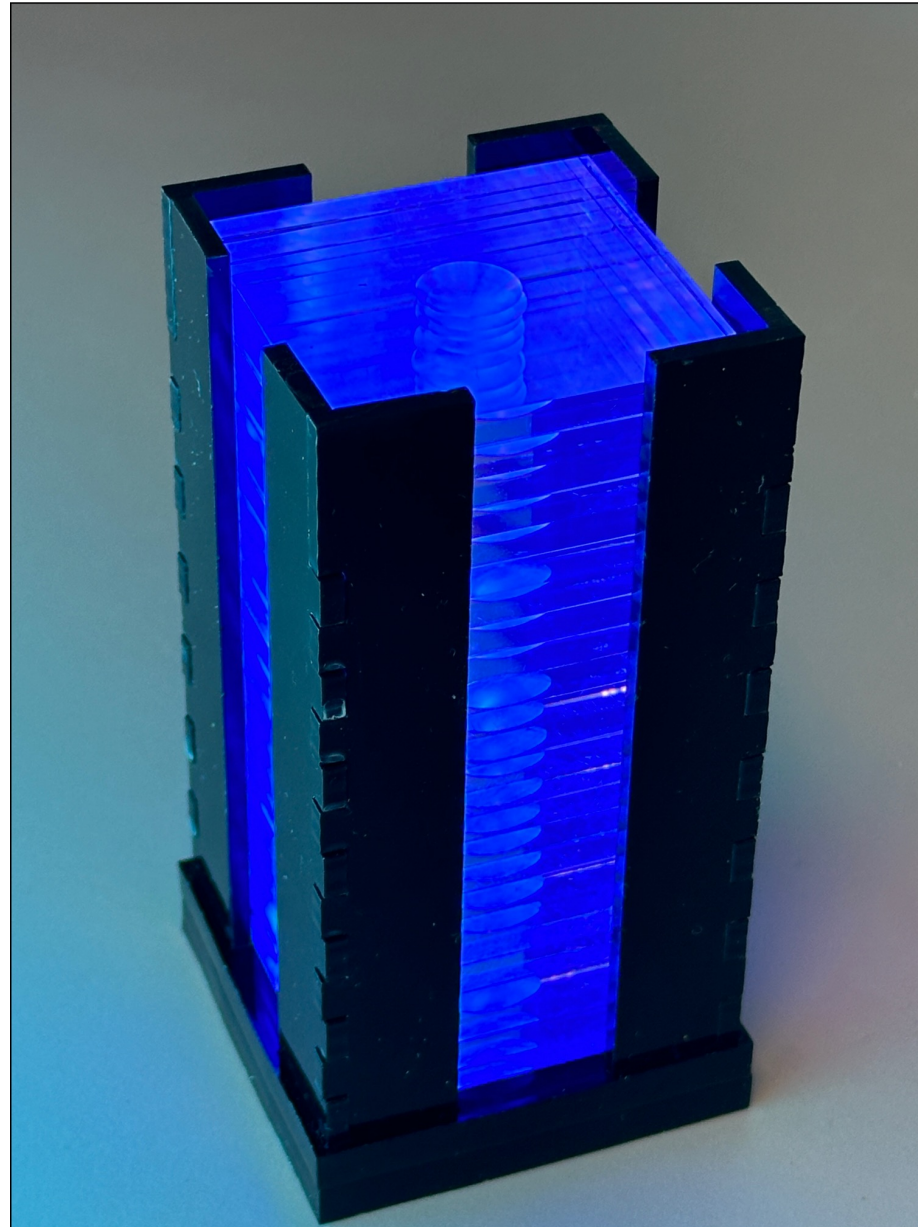
A world map composed of white dots on a blue background. Several red location pins are placed on the map, with red dashed lines connecting them in a path across the globe.

NETWORKS WORLDWIDE

Elke's talk at the Summer 2024 Lehigh Joint EICUG-ePIC session
<https://indico.bnl.gov/event/20727/contributions/93765/>

PHOTO CONTEST AWARDS





Glowing in the «Dark Light»

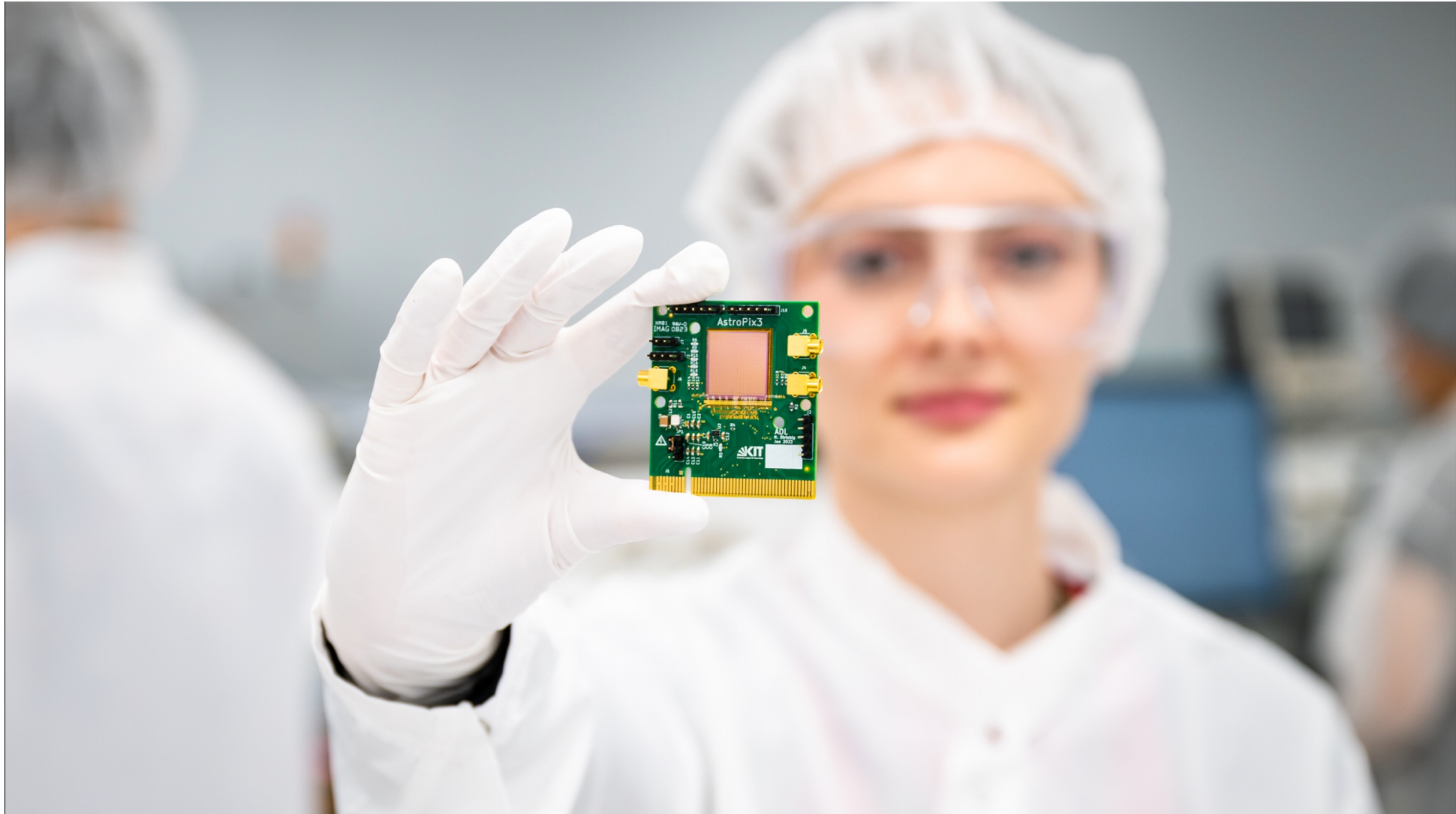


Praktar Garg



Installing the Baby BCAL at Fermilab

Sylvester Joosten



AstroPix: Innovation at My Fingertips

Maria Zurek



**A
W
A
R
D
S**

