

Diversity, Equity, and Inclusion Efforts of the nEXO Collaboration

Erica Caden
SNOLAB Research Scientist
On behalf of the nEXO DEI Committee

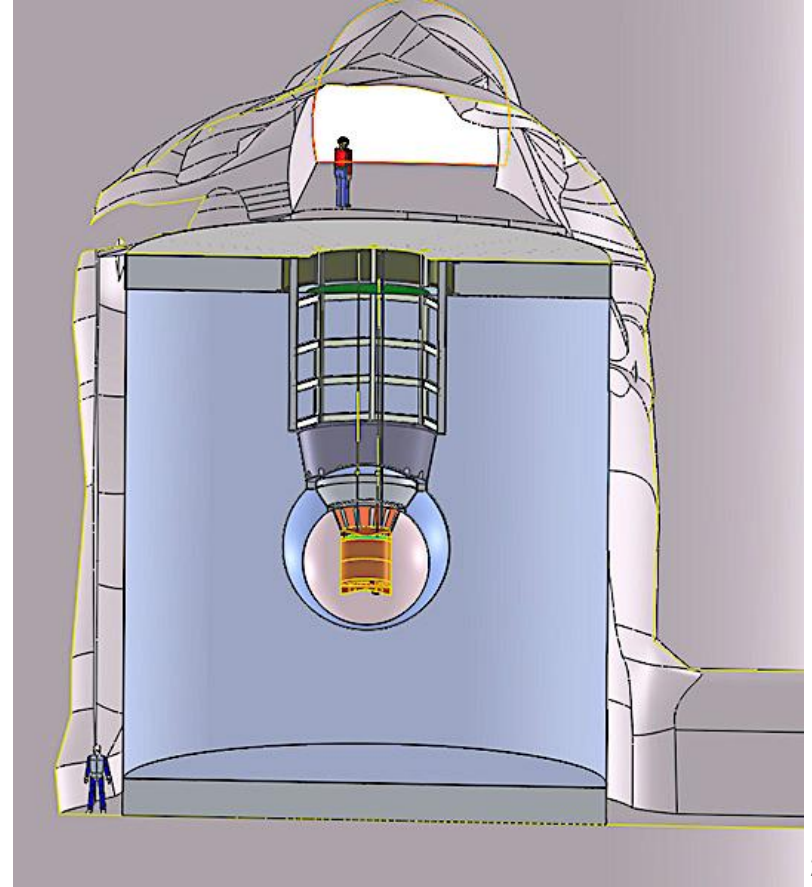


CAP Congress
19 June, 2023



The nEXO Experiment: <https://nexo.llnl.gov/>

- Ton scale experiment designed to observe $0\nu\beta\beta$
- Planned to be built deep underground at SNOLAB
- $0\nu\beta\beta$ is a hypothetical nuclear process that could lead to physics beyond the standard model
- Sensitivity projection:
 - $T_{1/2}^{0\nu} = 1.35 \times 10^{28}$ yr at 90% C.L.
- Detector includes:
 - Time Projection Chamber filled with 5000 kg of Liquid Xenon enriched to 90% in ^{136}Xe
 - 32 tonnes HFE-7200 contained in a double-walled cryostat
 - Water tank for instrumented for cosmic ray tagging and gamma shielding



The nEXO Collaboration



9 Countries | 34 institutions | ~180 collaborators

Other nEXO Presentations at CAP!

Dwaipayan Ray: Extraction of Ba ion from a liquid Xe volume *19 Jun 2023, 09:45*

Stephanie Bron: New photosensor assembly in the Light only Liquid Xenon (LoLX) experiment: design and measurement prospects *19 Jun 2023, 10:30*

Samin Majidi: Designing a Calibration System for the nEXO Experiment's Outer Detector *19 Jun 2023, 11:00*

Soud Al Kharusi: nEXO: Searching for Lepton Number Violation and Majorana Neutrinos *20 Jun 2023, 12:45*

Lisa Rudolph: A Xe-127 calibration source for liquid Xe experiments *20 Jun 2023, 16:30 (Poster)*

Kurtis Raymond: Laser Stimulated emission of SiPMs *21 Jun 2023, 09:45*

Lucas Darroch: The stability of HPK VUV4 SiPMs following a large dose of VUV radiation *21 Jun 2023, 13:30*

Hussain Rasiwala: Ion trapping for a Ba-tagging technique *22 Jun 2023, 08:00*

Creation of Code of Conduct and DEI Committees

Early 2018

Ad hoc Code of Conduct (CoC) committee is created

Late 2018

Code of Conduct adopted by the collaboration board
Two ombuds are elected

Early 2019

Ad hoc CoC committee converted to standing committee

Late 2020

nEXO-wide DEI committee is formed

DEI Committee Details

- The nEXO DEI Committee meets monthly online to hear updates from subcommittees and brainstorm new ideas
- 15-20 active members
- Membership open to entire collaboration
- Committee Leadership
 - Two co-chairs
 - Selected by collaboration-wide elections conducted on staggered, two year terms
- Subcommittees are led by volunteers who organize the work during the month



Inaugural Ask-Me-Anything panel with senior scientists.

DEI Committee



Current Initiatives

- Mentorship Program
- DEI Seminar Series
- Publication Equity
- Showcasing Young Researchers
- Information Hub and Newsletter
- Collaboration DEI Statement
- Social Media



Dear nEXO collaborators,

In honor of Women's History Month, we highlight some women in Physics, along with some news and opportunities in the [DEI News & Resources](#) section of this March 2023 edition of the newsletter.

The DEI committee formed an Information Hub sub-committee, in charge of creating a collection of resources for DEI hiring and disseminating general DEI resources within the collaboration. We found that the best way to share these great resources was to create a monthly newsletter. This newsletter is meant to promote opportunities for our community, such as job listings or award opportunities, share relevant news and resources, but also to stay up-to-date with upcoming conferences deadlines and celebrate our collaborators' accomplishments.

We invite you to submit any item to be shared in our next newsletter using our [submission form](#) or by emailing nexo-hub-subcommittee@llnl.gov.

[DEI News & Resources](#)

[Publications from xenon-related experiments](#)

[nEXO Instagram](#)

[Open Applications](#)

[Funding Opportunities](#)

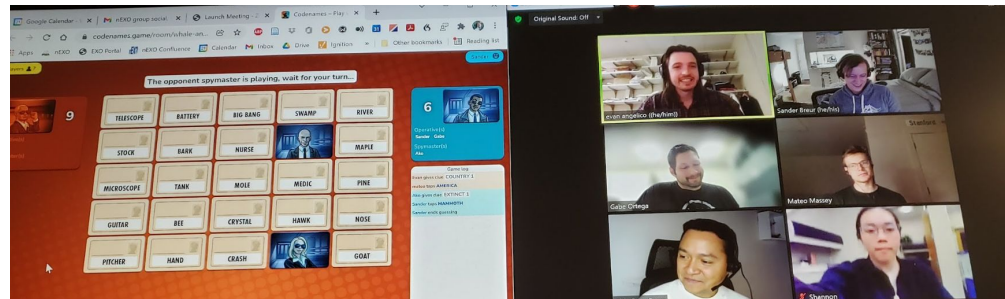
[Internship Opportunities](#)

[PhD Opportunities](#)

Mentorship Program

- Make new role models within the nEXO collaboration
- Ask questions and get advice from a diverse group of people, not just their direct P.I. or group members
- Build community within nEXO that makes it a happy environment to do physics
- Show emerging scientists that they are welcome and represented within nEXO
- Link to testimonial video: https://youtu.be/O8UGn_E5F4g

Since Summer 2021, 40 mentees and 37 individual mentors have participated!

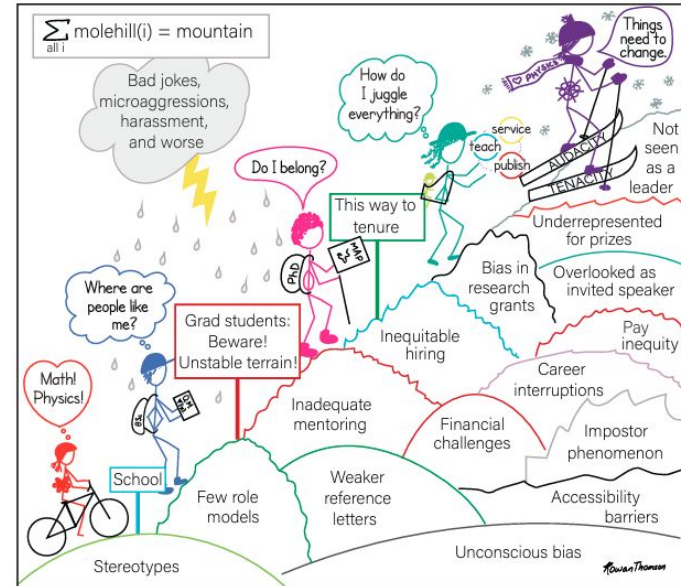


DEI Seminar Series

- Learn more about DEI from experts
- Learn physics from those who identify as minorities
- Develop awareness within the collaboration to inspire action and cultural change; motivate involvement in DEI activities/subgroups

Monthly seminars on a wide array of topics given by internal and external speakers

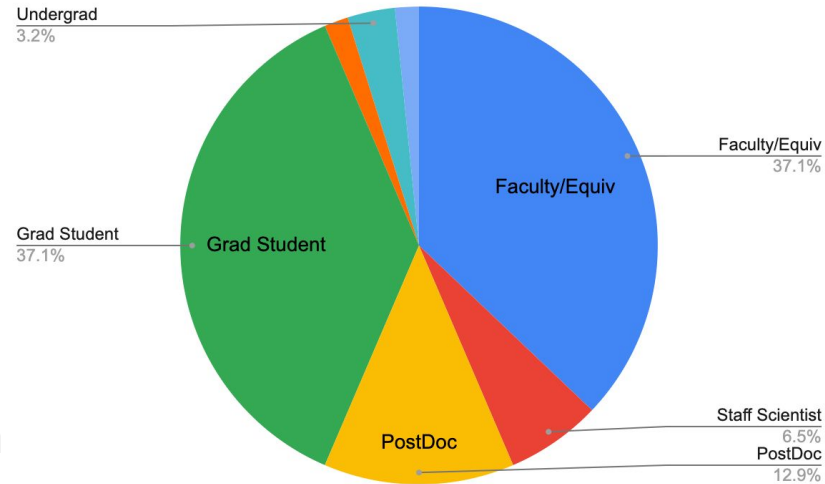
- Gender, Implicit Bias & Power Structures in STEM
- Systematic barriers and challenges faced by queer and transgender people in STEM
- Education in the U.S. Prison System
- Imposter Syndrome
- Advancing Equity, Diversity, and Inclusion: A How-to Guide



Physics Today 75, 1, 42 (2022); doi: 10.1063/PT.3.4921

Publication Equity Subcommittee

- Analyze nEXO's Publications Policy; check for DEI issues
- Assess publication policies of other nuclear/particle physics collaborations & compare to ours
- Analyze nEXO's past publication timelines to check for fairness and timeliness
- Analyze nEXO's past publications' review processes: were they "good enough" or can we improve?
- Recently completed a collaboration-wide survey regarding our opt-in policy, with 85% participation and 58% satisfied with current policy.



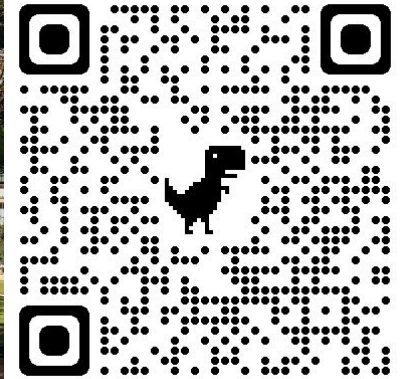
Work in Progress and Planned Initiatives

- Climate Survey - planned for Summer 2023
- Early Career Board Representative (ECBR)
- Student Caregiver Travel Grants
- Ombudsperson Training
- Targeted Job Boards for Underrepresented Groups
- DEI Seminar Series Speaker Support
- DEI Workshop for Collaborations - tentatively planning for Summer 2025
- Funding - Recently Applied for DOE RENEW Grant

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Feel free to contact me with questions/comments: ecaden@snolab.ca