

Cameron Poe

1644 Oxford St., Apt 16, Berkeley, CA 94709
☎ (469) 363-2243 | ✉ cameronpoe@berkeley.edu

Education

The University of California, Berkeley
PH.D. PHYSICS

Berkeley, CA
Aug. 2024 - Present

The University of Chicago
A.B. PHYSICS, CUM LAUDE

Chicago, IL
Oct. 2019 - Jun. 2023

Employment

Enrico Fermi Institute, Henry Frisch Group

Chicago, IL

RESEARCHER

Mar. 2022 - Jun. 2024

- Helped design a new way to manufacture MCPs out of thin, patterned laminae for gamma ray detection without scintillators or photocathodes.
- Simulated in Geant4 and TOPAS two novel time-of-flight positron emission tomography scanners, one using a low-atomic number liquid scintillator and the other based on laminar MCPs.
- Calibrated PSEC₄/ACDC rev. C electronics and coded the offline analysis for the LAPPD time-of-flight particle ID upgrade at the Fermilab Test Beam.

Quantum Opus

Novi, MI

JEFF METCALF SUMMER INTERN

Jun. 2021 - Sep. 2021

- Designed an SQL database to organize product inventory and streamline the fabrication process of superconducting nanowire single-photon detectors (SNSPDs).
- Created Python modules for database querying and visual characterization of SNSPDs.

Publications

PUBLISHED

K. Domurat-Sousa, **C. Poe**, H. Frisch, B. Adams, C. Ertley, and N. Sullivan. Low-dose TOF-PET based on surface electron production in dielectric laminar MCPs. *Nucl. Instrum. Methods*, 1057:168676, 2023, <https://doi.org/10.1016/j.nima.2023.168676>

K. Domurat-Sousa and **C. Poe**, Methods for simulating TOF-PET in TOPAS using a low-Z medium. *Nucl. Instrum. Methods*, 1057:168675, 2023, <https://doi.org/10.1016/j.nima.2023.168675>

K. Domurat-Sousa, **C. Poe**, H. Frisch, B. Adams, C. Ertley, and N. Sullivan. Surface direct conversion of 511 keV gamma rays in large-area laminated multichannel-plate electron multipliers. *Nucl. Instrum. Methods*, 1055:168538, 2023, <https://doi.org/10.1016/j.nima.2023.168538>

Conference Presentations

CONTRIBUTED TALKS

Low-Dose Total-Body Time-of-Flight PET Using High-Resolution Gamma Ray Multiplier Tubes. 10th Conference on PET, SPECT, and MR Multimodal Technologies, Total Body and Fast Timing in Medical Imaging (PSMR), May 23, 2024.

Low-dose TOF-PET based on surface electron production in dielectric laminar MCPs. IEEE NSS MIC RTSD Ultra-low-dose PET Imaging Workshop, Nov. 11, 2023.

Low-dose TOF-PET based on surface electron production in dielectric laminar MCPs. Coordinating Panel for Advanced Detectors (CPAD) Workshop, Nov. 7, 2023.

Constructing microchannel plates from thin patterned laminae. Coordinating Panel for Advanced Detectors (CPAD) Workshop, Nov. 8, 2023.

POSTER PRESENTATIONS

High-Res Gamma Ray Multiplier Tubes (HGMTs) Based on Surface Direct Conversion in Laminar MCPs. 16th Pisa Meeting on Advanced Detectors, May 26, 2024.

A user-friendly, highly-extendable Geant4 wrapper for process-based detector development. Coordinating Panel for Advanced Detectors (CPAD) Workshop, Nov. 7, 2023.

Honors

Nathan Sugarman Award for Excellence in Undergraduate Research May 2023

ENRICO FERMI INSTITUTE, THE UNIVERSITY OF CHICAGO

- Awarded to K. Domurat-Sousa and **C. Poe** “for their ground-breaking work as a team developing Compton-based Time-of-Flight Positron-Emission Tomography cameras capable of reducing the radiation dose to patients by factors up to 1000. Possible new applications include pediatric diagnosis, routing oncological screening, and dynamic movies.”

John Haeseler Lewis Prize May 2023

DEPARTMENT OF PHYSICS, THE UNIVERSITY OF CHICAGO

- “Awarded by the Physics Fellowship’s Committee to the ‘best graduating senior in physics.’”

Quad Undergraduate Research Scholar 2022-2023

THE UNIVERSITY OF CHICAGO

- University grant to fund research during Fall 2022 and Winter 2023.

University Scholarship Award 2019-2023

THE UNIVERSITY OF CHICAGO

- “Scholarship recognizing student’s achievements and leadership.”

Dean’s List 2022, 2023

THE UNIVERSITY OF CHICAGO

- Recognition for being in the top 20% of students during the 2021-2022 and 2022-2023 academic years.

Extracurricular

General Chair Chicago, IL

DOCUMENTARY FILM GROUP

Sep. 2021 - Apr. 2023

- Led 10-person executive board and organized over 100 volunteers to staff the cinema of the oldest student-run film society in the U.S.
- Helped secure over \$40,000 in fundraising and grants for projection booth equipment upgrades.

Web Chair Chicago, IL

DOCUMENTARY FILM GROUP

May 2021 - Apr. 2023

- Fully redesigned a static, eight-year-old HTML website into a dynamic PHP site.
- Created a MySQL screening database to document past shows.

Technical Strengths

Software Languages

Python, HTML, C, SQL, C++, PHP

Monte Carlo Packages

TOPAS, Geant4