Amber Lennox

Urbana, IL, USA / Glasgow, Scotland

✉ arelennox@gmail.com
alennox2@illinois.edu

☎ +1 (217) 200-2761

Education

2017-   **Physics Ph.D.**
University of Illinois at Urbana Champaign, USA

2011-2016   **Theoretical Physics MSci. (1st Class)**
University of Glasgow, Scotland

2005-2011   *AAA*/AAA (*Advanced Higher*/**Higher**)
Woodfarm High School, Scotland
*Physics, Mathematics, Chemistry/*Biology, History, English

Profile

Candidate with a strong science background and a passion for sustainability, outreach and culture.

Particularly interested in:
Renewable energy
Science outreach
Data science

Skills

Hardware Knowledge:

Machine shop training:

- **Mills**
- **Lathes**
- **Brazing apparatus**

Additionally experienced in:

- **Power tools**
- **Soldering**
- **Electronics**
- **Cryogenics**
- **Microwave Optics**

Software Knowledge:

Comfortable using:

- **Python**
- **MATLAB**
- **C++**
- **Javascript**
- **HTML/CSS**
- **Serial commands**
- **SolidWorks**
- **Microsoft Office**

Current Ph.D. Research

University of Illinois at Urbana Champaign, USA

I research the **Cosmic Microwave Background (CMB)** in collaboration with the telescopes **SPT**, **BICEP/Keck** and **SPIDER**.

Some example topics of my research:

(i)   Characterizing various materials for integration with cryogenically-cooled, microwave optics.
(ii)   Measuring telescope response for calibration purposes.
(iii)   Power spectrum analysis of polarized light maps.
(iv)   Developing interfaces between software in different programming languages.
(v)   Performing data combination and statistical analysis.

Publications: arxiv.org "Lennox, A" (Click)

Undergraduate Research

06.15-08.15	**Fermi National Accelerator Laboratory, USA** Performed Python data fits and analysis to calibrate for the Cryogenic Dark Matter Search (CDMS).
10.15-05.16	**University of Glasgow, Scotland** Theoretical project investigating free parameters in the formulation of charge-parity-time reversal (CPT) symmetry.
06.14-08.14	**University of Münster, Germany** Generated PYTHIA simulations of high-energy particle collisions and performed data analysis using C++ to better understand collision dynamics.
10.13-03.14	**University of Glasgow, Scotland** Developed C++ software for the SMEE framework that uses machine learning techniques to identify and classify supernova signal candidates.

Awarded: Thomson Experimental Prize (2016)

Awarded on the "recommendation of the Professor of Natural Philosophy to students who have shown their zeal and ability in experimental investigations in the physical laboratory."

Work Experience (Volunteer/Science/Outreach)

2022-2023 Language Education Developer
Self-Employed

I use Python and Javascript to develop language-learning software in my spare time and share these resources with other learners for free via my website.

2011-2023 Teaching Assistant/Tutor
University of Illinois/Self-Employed

I have taught Mathematics, Physics and Chemistry at high-school and undergraduate levels, both in an appointed position via the university and privately.

Undergraduate courses taught: Classical Mechanics, Quantum Mechanics, Mechanics Lab (upper level)

2012-2013 Festival Director
North of the Wall

I was the first director of *North of the Wall* - a non-profit grassroots heavy metal festival in Glasgow. The event received favourable reviews from STV (Scottish Television) and Terrorizer (UK) magazine. It displayed strong longevity, taking place again in 2014 and recurring for several subsequent years.

2013-2016 Society Work
University of Glasgow

I was president of both the University Science Fiction and Rock & Metal Societies for one year apiece, managing the committees and activities.

Work Experience (Additional)

Nov 16 – Apr 17	**Retail Assistant**	HMV
Aug 16 – Nov 16	**Customer Service Assistant**	John Lewis
Jan 13 – Jun 13	**Current Student Representative**	Queen Margaret Union

Personal website:

amberlennox.github.io/

More info:

linkedin.com/in/amber-lennox-90084bb2/