

Cole D. Pruitt

PHD CANDIDATE IN CHEMISTRY · DOCUMENTARY FILMMAKER

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Education

Washington University in St Louis

PHD IN CHEMISTRY (EXPECTED MARCH 2019)

Dissertation: "Neutron Scattering as Probe of the Asymmetry Dependence of the Nuclear Potential"

St Louis, MO

Aug 2013 - Present

Brown University

BACHELOR OF SCIENCE IN BIOPHYSICS WITH HONORS, MAY 2011

Honors Thesis: "Design and Implementation of a DNA-Sequencing Mass Spectrometer"

Providence, RI

Aug 2007-Aug 2011

Experience

Radiochemistry Group, Washington University in St Louis

RESEARCHER AND INSTRUCTOR

- Developed and directed multi-year campaign of neutron cross section measurements at Los Alamos and Triangle Universities Nuclear Lab, including four experiments as Principle Investigator (PI).
- Rewrote theoretical physics and visualization package from scratch (10,000 LOC of C++/Python, publication in preparation); enhanced runtime stability and model accuracy, with special emphasis on human-readability of the codebase.
- Taught three advanced undergraduate courses in quantum mechanics, thermodynamics, and radiochemical techniques, including one as head teaching assistant and one as the primary laboratory instructor.

St Louis, MO

Jan. 2014 - Present

Moyo Pictures, LLC

FOUNDER AND MANAGER

- Co-directed/produced THE SURROUNDING GAME, the first feature documentary on the Asian game of Go, from 2012-2018.
- Hired and managed 20+ person production team; managed shoot schedule in China, Korea, Japan, and the US; executed successful multi-year fundraising campaign; designed marketing and promotional materials; negotiated and closed international distribution deals; coordinated film translation into 13 languages.
- Featured in WIRED magazine, the Huffington Post, and the New Yorker.
- Premiere at American Documentary Film Festival (Apr. 2017); released on iTunes, Amazon, Google Play (Mar. 2018), Netflix (Aug. 2018).

St Louis, MO

May 2016 - Present

KopiNYC, LLC

MANAGER

- Managed construction, opening, and operation of successful specialty coffeeshop generating over \$500,000 in annual revenue.

New York, New York

Nov 2012-June 2013

Honors & Awards

ACADEMIC

- | | | |
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| 2016 | SCGSR Award Recipient , Department of Energy, Office of Science | Los Alamos, NM |
| 2016 | Dean's Award for Teaching Excellence, Honorable Mention , Washington University in St Louis | St Louis, MO |
| 2015 | SCGSR Award Recipient , Department of Energy, Office of Science | Los Alamos, NM |
| 2014 | Annual Award for Outstanding Teaching , Chemistry Dept., Washington University in St Louis | St Louis, MO |

NON-ACADEMIC

- | | | |
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| 2016 | Doroghazi Eagle Scout Award , Great Rivers Council, Boy Scouts of America | Columbia, MO |
| 2014 | AmDocs Film Pitch Award , American Documentary Film Festival | Palm Springs, CA |



Skills

Programming C/C++, Python, bash scripting, \LaTeX

Analysis and Visualization ROOT (CERN data analysis framework) with C++, matplotlib with Python, gnuplot, GIMP, Inkscape

Selected Presentations

Texas A&M University Cyclotron Institute Seminar Series

College Station, TX

INVITED SEMINAR: "USING NEUTRON σ_{tot} TO CONSTRAIN THE ASYMMETRY DEPENDENCE OF OPTICAL POTENTIALS"

Sept 31, 2018

Presented new neutron scattering measurements and Dispersive Optical Model fit status

Washington University Physics Seminar

St Louis, MO

PRESENTER: "THE 2018 NUCLEAR POSTURE REVIEW"

Sept 1, 2018

Introduced Dispersive Optical Model (DOM) formalism and described preliminary neutron total cross section results from LANSCE

Los Alamos Neutron Science Center Nuclear Data Seminar

Los Alamos, NM

INVITED SEMINAR: "CONSTRAINING THE DISPERSIVE OPTICAL MODEL WITH NEUTRON TOTAL CROSS SECTIONS"

Feb 1, 2017

Introduced Dispersive Optical Model (DOM) formalism and described preliminary neutron total cross section results from LANSCE

UltraCondensed Science: "Where We Come From"

Washington University in St Louis

WRITER AND NARRATOR

2015

A short introduction to nuclear astrophysics and how the matter on Earth came to be. Illustrated by Jorge Cham, creator of PhD Comics.

Selected Publications

Intermediate-energy Neutron Total Cross Sections on Isotopic Targets (in preparation)

Physical Review C

NEUTRON σ_{tot} ON $^{16,18}\text{O}$, $^{58,64}\text{Ni}$, AND $^{112,124}\text{Sn}$

Spring 2019 (expected)

An Open-Source Code for the Dispersive Optical Model (in preparation)

Computer Physics Communications

PHYSICS, VISUALIZATION, AND FITTING ROUTINES FOR EXTRACTING NUCLEAR STRUCTURE AND REACTION DATA WITH THE DISPERSIVE OPTICAL MODEL (DOM)

Summer 2019 (expected)

Large Longitudinal Spin Alignment of Excited Projectiles in Intermediate Energy Inelastic Scattering

Physical Review Letters

Dec 2017

The nanopore mass spectrometer

Review of Scientific Instruments

DESIGN AND OPERATION OF A NOVEL ION PRODUCTION MECHANISM FOR MASS SPECTROMETRY

Nov 2017