

SHEENA CALIE SCHIER

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GOAL

My goal is to shift my career away from software development and to focus instead on education. I am committed to working with students from a broad range of backgrounds to help them grow a fluid understanding of physics and mathematical concepts and gain the self-confidence to trust themselves working through homework sets and test problems on their own.

EDUCATION

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| Ph.D. in Physics | 2012-2018 | University of California, Santa Cruz CA
<i>High Energy Experimental Particle Physics Specialization</i>
Thesis: <i>Searches for Electroweak Production of Compressed Supersymmetry in Events with Soft Leptons, Missing Transverse Momentum, and a Hard Jet in the ATLAS Detector</i> |
| | 2017 | CERN-Fermilab Hadron Collider Physics Summer School, Meyrin, Switzerland
<i>Advanced school targeted particularly at young postdocs and senior PhD students working towards the completion of their thesis project, in both Experimental High Energy Physics (HEP) and phenomenology.</i> |
| M.S. in Physics | 2012-2013 | University of California, Santa Cruz
<i>High Energy Experimental Particle Physics Specialization</i> |
| B.S. in Astrophysics | 2008-2011 | University of California, Santa Cruz
<i>Particle Physics Specialization</i>
Thesis: <i>Effect of Channel-To-Channel Variations On Pulse Efficiency And Noise Occupancy For The Use Of KPIX ASIC For Readout Of Silicon μ-Strip Sensors</i> |
| | 2004-2008 | Cabrillo College, Aptos
<i>Physics Transfer Track</i> |

PROFESSIONAL EXPERIENCE

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|---------------|--------------|---|
| Tagleaf, Inc. | 2019-Present | Data Scientist / Software Developer / Implementation Specialist <ul style="list-style-type: none">• Develop classification models to test internal data against public results, implement web-based visual analytics using standard visualization libraries, and customize software to meet clients' needs.• Lead both on-site and web-based training sessions and contribute to users manuals and focused quick guides. |
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TEACHING AND PEDAGOGY

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|---|------|---|
| Self-started Volunteer Program - Valley Haven, Santa Cruz | 2019 | Volunteer Instructor <ul style="list-style-type: none">• Led weekly learning sessions with elderly patrons needing help understanding their smart |
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devices to provide them with a better means of communication and social involvement.

2012-2014 Physics Teaching Assistant

*University of
California, Santa
Cruz*

- Instructed weekly lab sections for introductory physics classes covering topics: elementary mechanics, wave motion, optics, fluid mechanics, thermodynamics, electricity, and magnetism.
- Presented original lectures at the start of each lab to introduce key physics concepts, experimental methods, and grading criteria.
- Graded lab notebooks and provided pedantic feedback to teach and nurture the art of scientific writing.
- Held weekly discussion sections assisting students to understand the ideas and methods necessary to complete homework assignments.

2006-2008 Student Assistant, Physics Tutor / Lab Assistant

*Physics Learning
Center, Cabrillo
College*

- Helped students complete in-class physics applets and hand-written homework sets for classes in conceptual physics, introductory physics, and physics for scientists and engineers.
- Assisted students during in-lab experiments to set up equipment, understand equations for making predictions, apply error analysis to results, and write conclusions.

2004-2008 Student Assistant, Math Tutor

*Math Learning
Center, Cabrillo
College*

- Tutored drop-in sessions in arithmetic, algebra, trigonometry, and calculus.
- Adapted mathematical pedagogy to assist student comprehension with various learning abilities.

MENTORING AND OUTREACH

2017-2018 Society of Physics Students (SPS)

Graduate Mentor

- Mentored undergraduate women in physics and met weekly with each mentee to discuss their challenges, discover healthy perspectives, and define future goals.

2017 Santa Cruz County Science & Engineering Fair

Judge

- Graded science experiments based on ingenuity, depth, accuracy, and completion. Also participated in determining final winners.

2017 SPS 2016 Quadrennial Congress

UCSC Exhibit Rep

- Managed the UCSC physics booth to engage prospective students with exciting demonstrations and stimulating conversation about the world of physics.

2016-2017 SCIPP/Quarknet Masterclass

Mentor

- Facilitated highschool students in learning about particle physics during a 1-day hands-on class spent analyzing actual data from the Large Hardon Collider and sharing results with masterclasses in different areas.

2015 American Physical Society Conference for Undergraduate Women in Physics

Panel Member

- Took part in an all-female graduate student panel discussion with undergraduate women pursuing careers in physics. Conversations were aimed at helping undergraduate women obtain the tools needed to overcome challenges and gain a positive outlook towards future opportunities.

2014 Particle Fever, Film Premier

Panel Member

- Joined a panel of physics professors and postdoctoral fellows to answer questions about particle physics and the broad concept of the universe with Santa Cruz community members after the showing of an independent film produced at the Large Hadron Collider.

2012-2014 Endeavor Institute Balloon Fest

Mentor

- Helped groups of 3-4 high school students design sophisticated physics experiments using weather balloons. During a 2-day exhibition, students executed the experiment, analyzed the data, interpreted the results, and presented the entire process with PowerPoint slides.

RESEARCH EXPERIENCE

Graduate Research	2016–2018	ATLAS COLLABORATION	Developed a search for new physics in compressed electroweak scenarios that provide a viable candidate for dark matter with the ATLAS detector at the Large Hadron Collider.
	2015–2016	ATLAS COLLABORATION	Characterized pixel cluster properties and track impact parameter resolution to study charged particle trajectories in the ATLAS inner-detector using both simulated and test beam data.
	2013–2015	ATLAS COLLABORATION	Estimated QCD and electroweak backgrounds in the search for photonic signatures of gauge-mediated supersymmetry in 8 TeV proton-proton collisions with the ATLAS detector.
Junior Specialist	2011–2012	Junior Specialist Research, UC SANTA CRUZ	Designed a common-mode electronic noise filtering circuit board as part of the International Linear Collider detector readout electronics research and development.
Undergraduate Research	2009–2011	Undergraduate Research, UC SANTA CRUZ	Modeled electronic pulse shape and gain in C++ programming language and statistical modeling software ROOT for International Linear Collider detector readout electronics research and development.

PUBLICATIONS

Phys. Rev. D	M. Aaboud, S. Schier <i>et al.</i> (2018) Search for electroweak production of supersymmetric states in scenarios with compressed mass spectra at 13 TeV with the ATLAS detector <i>Phys. Rev. D</i> 97 (2018) 052010
Phys. Rev. D	M. Aaboud, S. Schier <i>et al.</i> (2015) Search for photonic signatures of gauge-mediated supersymmetry in 8 TeV <i>pp</i> collisions with the ATLAS detector <i>Phys. Rev. D</i> 92 (2015) 072001
NSS/MIC	J. Brau, S. Schier, B. Schumm, <i>et al.</i> (2012) KPIX - A 1,024 channel readout ASIC for the ILC <i>Nuclear Science Symposium and Medical Imaging Conference (NSS/MIC)</i> , 2012 IEEE 6551433

PRESENTATIONS

Talk	April 2018	American Physical Society April Meeting
		<i>Searches for Electroweak Production of Compressed Supersymmetry with Soft Leptons and Missing Transverse Momentum in pp Collisions at $\sqrt{s} = 13$ TeV with the ATLAS Detector</i>
Talk	Nov. 2015	ATLAS Tracking CP Workshop
		<i>IBL Hit Errors and Track Impact Parameter Covariance Matrix Rescaling</i>
Poster	April 2012	American Physical Society April Meeting
		<i>Implementing an External Charge Injection System into the ILC-SiD KPIX ASIC for Charged-Particle Track Characterization</i>
Poster	Jan. 2012	American Physical Society Conference for Undergraduate Women in Physics
		<i>Implementing an External Charge Injection System into the ILC-SiD KPIX ASIC to Characterize for Single-Particle Tracking</i>

HONORS AND AWARDS

Thesis Award	June 2011 · Dean's Award for Undergraduate Research
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