John Franklin Crenshaw

Contact Information

Email: jfc20@uw.edu
Web: jfcrenshaw.github.io
ORCID: 0000-0002-2495-3514

University of Washington Physics Dept
Box 351560
Seattle, WA 98195

Education

University of Washington, Seattle, WA USA
Ph.D. in Physics, expected May 2025
M.S., Physics, December 2020
Advisor: Andrew Connolly

Duke University, Durham, NC USA
B.S. in Physics, May 2019
summa cum laude with Highest Distinction
Advisor: Kate Scholberg
Thesis: Sensitivity of the Helium and Lead Observatory to Core-Collapse Supernova Neutrino Bursts

Research Experience

Graduate Research Assistant — Aug 2019 –
DiRAC Institute, University of Washington
Vera C. Rubin Observatory
Dark Energy Science Collaboration (DESC)
Informatics and Statistics Science Collaboration (ISSC)
Advisor: Andrew Connolly

Undergraduate Research Assistant — Aug 2016 – May 2019
Duke University, Neutrino and Cosmology Group
HALO Supernova Neutrino Detector
Advisor: Kate Scholberg

Undergraduate Research Assistant — May - Aug 2018
Karlsruhe Institute of Technology, Institute for Nuclear Physics
IceTop Cosmic Ray Detector
Advisor: Andreas Haungs

Fellowships & Awards

Rubin Observatory ISSC Ambassador	2021 – 2022
DOE Scholar	2021
NSF Graduate Research Fellowship Honorable Mention	2021
Duke Faculty Scholar	2018 – 2019
Daphne Chang Memorial Award, Duke Physics Department	2019
Highest Distinction for Undergraduate Thesis Research	2019
DAAD RISE Research Exchange Scholarship	2018

First Author Publications

1. Learning Spectral Templates for Photometric Redshift Estimation from Broadband Photometry
Crenshaw, J.F. & Connolly, A.J. 2020 *AJ*, 160, 191.

Co-Author Publications

2. The Sensitivity of GPz Estimates of Photo-z Posterior PDFs to Realistically Complex Training Set Imperfections
Stylianou, N., Malz, A., Hatfield, P., **Crenshaw, J.F.**, Gschwend, J. *PASP in press* (2022)

1. An information-based metric for observing strategy optimization, demonstrated in the context of photometric redshifts with applications to cosmology
Malz, A.I., Lanusse, F., **Crenshaw, J.F.**, Graham, M.L. *arXiv* (2021)

Invited Talks

AAS Astronomers Turned Data Scientists (ATDS) Meeting (*online*) — March 2022
Simulating Astronomical Data with True Posteriors using Normalizing Flows

DESC Winter Meeting (*online*) — Feb 2022
Deep Generative Modeling for the Photo-z RAIL Pipeline

Gruen Weak Lensing Group, KIPAC, SLAC National Lab (*online*) — Sep 2020
Deconvolving Galaxy Spectra from Broadband Photometry

Contributed Talks

DESC Winter Meeting (*online*) — Feb 2021
Rubin Observatory Project & Community Workshop (*online*) — July 2020
DESC Winter Meeting (*Tucson, AZ*) — Jan 2020

Research Posters

AAS 238th Meeting (*online*) — June 2021
SCMA VII Meeting (*online*) — June 2021
Duke Physics Undergraduate Research Symposium (*Durham, NC*) — April 2019
5th Joint Meeting of APS and Physical Society of Japan (*Waikoloa, HI*) — Oct 2018
Neutrino 2018 (*Heidelberg, Germany*) — June 2018

Teaching Experience

Undergraduate Reading Course Instructor, ΛCDM Cosmology — 2021 –
Teaching Assistant, Intro Physics Courses, Duke University — 2016 – 2019
Physics and Math Tutor, Duke University — 2016 – 2019

Outreach

STEM Pals organizer & pedagogical simulation developer — 2021
Duke University Teaching Observatory, volunteer — 2018 – 2019
Duke University Public Lecture: *Where Did We Come From and Are We Alone: cosmic origins and the search for life* — January 2018

Service & Leadership

Undergraduate Reading Course Leadership Committee, UW — 2022 –
Physicists for Inclusion and Equity (PIE) Officer, UW — 2020 – 2021
Departmental Review Student Committee, Duke Physics Department — 2018

Professional Societies

American Astronomical Society (AAS)
American Physical Society (APS)
Phi Beta Kappa
Duke Society of Physics Students (SPS)

Last updated: March 30, 2022