# Erik Solhaug

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## Education

**University of Washington** Seattle, WA

*B.S. in Astronomy and Physics: Comprehensive Physics, cum laude* *September 2019 - June 2022*

- GPA: 3.91/4.00
- Honors in Astronomy, Honors in Physics
- Phi Beta Kappa (Honors Society)
- Dean's List: Autumn 2019, Spring 2020, Autumn 2020, Winter 2021, Spring 2021, Autumn 2021

## Experience

**Project on CGM emission - Prof. Matthew McQuinn** March 2021 – present

*Undergraduate research assistant* *incl. summer research internship*

- Produced models relating expected emission from the circumgalactic medium (CGM) of galaxies with properties such as temperature, density and ion abundances by running computer simulations in *CLOUDY*
- Co-lead author of research paper presenting emission intensity estimates and relating results to empirical constraints

**Project on kinematic alignment in the CGM - Prof. Jessica Werk** July 2021 – August 2021

*Undergraduate research assistant* *summer research internship*

- Developed program for visualizing and stacking plots of kinematic alignment of observed absorption lines in the circumgalactic medium and published code in GitHub repository
- Applied large datasets from the *COS-Halos* and *CGM*$^2$ surveys to connect absorption kinematics with galaxy properties

**Werk SQuAD - Prof. Jessica Werk** September 2020 – present

*Student Quasar Absorption Diagnosticians*

- Optimized Voigt profile fits of absorption lines in observed spectra from the Hubble Cosmic Origins Spectrograph (COS) and connected observable parameters in the spectral signatures of distant galaxies with physical properties of the gas
- Adapted scripts to identify true host galaxies of absorbers using catalogs of redshift

**Husky Satellite Lab at UW** September 2019 – March 2020

*Team Member*

- Designed and fabricated a Langmuir plasma probe for the PHAT-2 weather balloon experiment
- Developed scientific testing procedure and analyzed performance of pulsed plasma thruster (PPT) with the Langmuir probe in a 2x1m vacuum chamber

## Outreach and Leadership

**Undergraduate Research Program (URP)** September 2021 – present

*Undergraduate Research Leader*

- Visited first-year classes around campus to promote participation in undergraduate research across all disciplines
- Created and presented slides twice a month for audiences of around 30 undergraduate students

**Center for International Relations and Cultural Leadership Exchange (CIRCLE)** November 2019 – June 2021

*Student Advisory Board Member*

- Worked directly with staff and on-campus student organizations to address international student concerns
- Organized surveys and outreach events to promote intercultural exchange

**Associated Students of the University of Washington (ASUW)** September 2019 – April 2020

*Student Senator*

- Written, presented and passed legislation that successfully established a task force to develop a student government branch for international student advocacy, leading to the creation of the Office of International Student Advocacy (OISA)
- Organized student council meetings for and represented Lander Residence Hall in the ASUW student senate

## Publications

- Co-lead author of: Piacitelli, Daniel; **Solhaug, Erik**; Faerman, Yakov & McQuinn, Matthew. (2022). *Absorption-based circumgalactic medium line emission estimates.*

## Awards

- **Mary Gates Research Scholarship (2022):** $5,000 to support research on CGM emission

## Technical Strengths

**Computational:** Python, Matlab, Java, Mathematica, LaTeX, Git, SQL, HTML, CSS, Bash, SolidWorks, OnShape
**Experimental:** signal identification, non-Gaussian statistics, diagnostic signal plots, confidence intervals, oscilloscope

## Languages

**Norwegian, English, Swedish, Danish, French**