

**Hannah Gulick**  
Iowa City, Iowa  
cell: 712.339.5904  
email: hannah-gulick@uiowa.edu

## **Education**

University of Iowa (2016 - Present)  
Majors: Astronomy, Physics, and English Creative Writing  
GPA: 3.90  
Spirit Lake High School, Spirit Lake, Iowa (2012-2016)  
Grade Point 4.0; Rank 1 of 114

## **Work**

- University of Iowa, Iowa City, Iowa -
  - HaloSat - A CubeSat to Study the Hot X-Ray Galactic Halo (2017 - Present)
    - Research assistant to Doctor Philip Kaaret
    - HaloSat is a NASA funded CubeSat that will map the mass and geometry of the Milky Way's halo through observations of X-rays from ionized oxygen  
My participation has included: assembly of flight hardware and ground support equipment, functionality testing, and data analysis/code production (Python)
  - Radio Astronomy: Thermal Gyrosynchrotron Radiation (2017 - Present)
    - Research assistant to Doctor Robert Mutel
    - We look for thermal gyrosynchrotron radiation on 8 stars with high coronal temperatures and magnetic field strengths. The paper is to be submitted to the *Astrophysical Journal* in Dec., 2017.
  - Ground radio contact for Univ. of Iowa satellite instrument HERCI (2017 - Present)
    - I use ham radio correspondence to command and receive data from HERCI (High Energy Radiation CubeSat Instrument), and create code (Python) to interpret data transmitted while in orbit.
  - First author on paper to be published in Journal of Double Star Obs. (2017)
    - "Neglected Northern Hemisphere Binary Star Systems with Updated Separations and Position Angles"
    - Paper refereed for April 2018 edition. We fit Gaussian models to 58 widely-separated binary star systems to find component separation and position angles  
We use this data with proper motions of components to determine whether each system was a true binary.
  - Radio Astronomy of the Galactic Center (2016 - 2017)
    - Research assistant to Doctor Cornelia Lang
    - We used images taken with the VLBA to determine the radiative origin of radio sources near the Galactic center

- Andøya Space Center, Andenes, Norway -
  - Canada-Norway Sounding Rocket School (CaNoRock) (2018)
    - Program where students cover an entire rocket campaign by designing, building, and launching a sounding rocket in four days. Accepted as 1 of 2 students at the University of Iowa to be the first American participants.
- Agco Corporation, Jackson, Minnesota (2016)
  - Intern, programmer on Proccedix for Google Glass

### **Achievements**

- Honor Roll (2013 - 2016)
- National Honors Society (2015, 2016)
- Accepted to Iowa Young Writers Studio (2015)
  - o One of the top international writing studios; accepted as 1 of 66
- Accepted to Junior Scholars Institute (2012)
  - o Creative writing
- Accepted to National Scholars Institute (2013 - 2015)
  - o Two years creative writing, one year astrobiology
- One of two school representative for HOBY (Hugh O'Brian Youth Leadership Seminar)
- Attendee of IGNITE (leadership seminar)
- Awarded state level Silver Key in Scholastic Arts and Writing Awards
  - o Astrophotography
  - o Poetry
- Awarded national level Gold Key in Scholastic Arts and Writing Awards
  - o Astrophotography
- Named to University of Iowa Dean's List
  - o Fall 2016

### **Publications**

- National poetry publication in anthology by New Jersey Live Poets Society (2015)
- National poetry publication in anthology by Creative Communications (2015)
- Astrophysical research paper in the Journal of Double Star Observations April edition; "Neglected Northern Hemisphere Binary Star Systems with Updated Separations and Position Angles" (2018)

### **Presentations**

- Undergraduate Colloquium speaker for work on HaloSat (2017)
- University Colloquium speaker for work on HaloSat (2017)
- Conference for Undergraduate Women in Physical Science (WoPhys'17) poster presenter for work on HaloSat (2017)
  - Awarded best poster/poster presentation
- Fall Undergraduate Research Festival (FURF) poster presenter for work on HaloSat (2017)
- APS Conference for Undergraduate Women in Physics (CUWiP) poster presenter for work on HaloSat (2018)

### **Scholarships**

- Barry M. Goldwater Scholarship campus nominee; National level is ongoing (2018)
- Named by the Department of Physics and Astronomy faculty as the junior recipient of the Myrtle K. Maier Scholarship (1,000 with chance for renewal) ( 2018)
- Awarded academic Old Gold Scholarship to attend University of Iowa
- Recipient of Vandergaard Scholarship - Spirit Lake High School (1,500) (2016, 2017)
- Recipient of Helen K. Fairall Scholarship - University of Iowa English Department (4,000) (2017)
- Recipient of Van Allen Grant - University of Iowa Department of Physics and Astronomy (2,000) (2017)
- Recipient of ICRU Grant - University of Iowa (2,000) (2017-2018)
- Awarded Iowa Space Grant Consortium Hands-On Grant (2016, 2017)

### **Interests / Activities**

- Youth advocate for Women in STEM - Speaker at conventions for young women to promote participation in STEM
  - Iowa Lakes Community College - Middle School STEM days (2015 - Present)
  - Girl Scout STEM events (2017 - Present)
  - High School events at the Van Allen Observatory (2017 - Present)
- Co-Director for “Stargazing with Scientists” at Univ. of Iowa Children’s Hospital (2017 - Present)
- Astronomy Club (2016 - Present)
- SPS (physics society) (2017 - Present)
  - Secretary to Project Eden (SPS project) (2017)
- Invited reader to student poetry readings (2017 - Present)

### **Helpful Skills**

- Proficient in Python Programming
- Certified Ham Radio Technician
- Proficient in CASA
- Proficient in LaTeX
- Proficient in Proceedix
- Proficient with eyewear technology and interactive simulations (i.e. Google Glass)
- Public speaking skills - Women in STEM conventions, colloquium
- Written communication skills