

# CURRICULUM VITAE

## GIANNI SIMS

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### EDUCATION

#### PhD in Physics

Florida Atlantic University, Boca Raton, FL

August 2021 - Present

#### B.S. Astrophysics Major with Philosophy Minor

The Pennsylvania State University, State College, PA

August 2017 - May 2021

#### High School Diploma in Vocal

Fiorello H. LaGuardia High School of Music and Art and Performing Arts, New York, NY

June 2017

### RESEARCH EXPERIENCE

#### Florida Atlantic University – Boca Raton, FL

*Research Assistant with Dr. Vicki Sarajedini*

May 2022 – Present

- The active galactic nucleus (AGN) occupation fraction as a function of galaxy mass can be used to discern models for the seeding mechanism of supermassive black holes. We compute the AGN occupation fraction using over 1 million galaxies in the combined Extended Chandra Deep Field South (ECDFS), the XMM Large Scale Structure Survey (XMM-LSS), and Elais-S1 (ES1) extragalactic fields. AGN fraction and galaxy masses were determined from the SED fitting published for the LSST Deep-Drilling Fields. We present our preliminary results for AGN selected via the SED fits, X-ray and mid-IR color selection and discuss their implications on supermassive black hole seeds.

#### The Pennsylvania State University – University Park, PA

*Undergraduate Research Assistant with Dr. Martin Bojowald*

October 2018 – May 2021

- Gathered information on loop quantum gravity
- Summarize, interpret, and gathered information
- Consulted and theorized findings with research professor
- Calculated the equations of motions from Poisson's brackets
- Treating quantum fluctuations as small perturbations and create space-time model mathematically describe quantum fluctuation
- Currently pre-published a copy of the research paper

#### The Intrepid Museum – New York, NY

*Research Intern with Dr. Jennifer Haghpanah*

December 2016 – June 2017

- Team member of a college-level research group.

- Conducted experiments and recorded research.
- Participated in planning meetings.
- Performed online research: into food chemistry comparing two proteins used in food (Bovine Albumin Serum and Casein) and effects on spices.

## WORK EXPERIENCE

**Onaketa Tutors** August 2022 - Present  
*Mid-Level Math Tutor*

- Tutoring mid-level math courses online towards under-served students of color.
- Mentoring under-served students of color to encourage their goal in mastering STEM topics.

**Florida Atlantic University – Boca Raton, FL** August 2021 - Present  
*Laboratory Teaching Assistant*

- teaching General Physics Lab 1 (Physics 2048L) and General Physics Lab 2 (Physics 2049L) courses
- provide 30 minute lecture before students perform experiments
- grade various assignments including lab reports and quizzes
- assessing student performances

**The Pennsylvania State University – University Park, PA** August 2020 - May 2021  
*Resident Assistant*

- assist and engage with residents to develop a meaningful community
- educate residents about their role to abide by university regulations and policies
- Understand, abide by, and enforce all University regulations and policies in a fair and consistent manner.
- Conduct rounds of the assigned housing area in accordance with protocol.

**The Pennsylvania State University – University Park, PA** June 2020 - August 2020  
*LEAP Mentor*

- Mentors plan social and academic virtual programming for their pride throughout the summer.
- Attend weekly virtual staff meetings, participate in evening and weekend virtual activities, attend one information session and attend mandatory Summer Mentor Training from June 25-28.

**The Intrepid Museum – New York, NY** May 2019 - August 2019  
*Membership Intern*

- Assisting Membership team with day to day activities, including members-only events, Box Office assistance, and programs during Museum festivals.
- Working with IA Coordinator on data cleanup in our database, Tessitura.

**The Intrepid Museum – New York, NY** June 2018 - July 2018  
*Special Events Intern*

- Assist with the coordination of office organizational projects including inventory management while updating current team templates, event folders and digital files

- Provide administrative support for the Event Sales Managers in the following areas: telephone calls, emails and filing research on venues, new vendors, potential clients, trends and other subjects as needed

**The American Museum of Natural History – New York, NY**    November 2015 - August 2017

*SALTZ Intern*

- Presented and explained museum artifacts to visitors.
- Conducted experiments and explained outputs to visitors.

## **HONORS AND AWARDS**

ARISTA National Honors Society, Fiorello H. LaGuardia High School of Music and Art and Performing Arts    2017

Japanese Honors Society, Fiorello H. LaGuardia High School of Music and Art and Performing Arts    2015

## **SCIENTIFIC TALKS**

### *Conferences Attended*

NEXUS Workshop through the National Society of Black Physicists (August 2022)

Advancing Graduate Leadership Conference (August 2022)

The Conference for Undergraduate Underrepresented Minorities in Physics (January 2021)

The Conference for Undergraduate Women in Physics (January 2020)

The National Society of Black Physicists (November 2019, November 2021)

### *Conferences Presented*

American Astronomical Society (June 2023)

### *Colloquium*

Panelist for the Colloquium from the Physics and Astronomy for Women's Club (PAW+) and the Climate Committee (September 2020)

## **AWARDS**

Black in Astro Travel Grant (June 2023)

One-time GTA award (December 2022)

## **EXTRA-CURRICULAR**

Member of the American Astronomical Society    June 2023 - Present

Member of The National Society of Black Physicists, member of NeXus    September 2021- Present

Professional Development Chair of The Physics and Astronomy for Women Club

(PAW +), The Pennsylvania State February 2020 - May 2021  
Member of Creative Writing Club, The Pennsylvania State January 2019 - May 2021  
Co-President of The Scientific Method Club Workshop Leader, LaGuardia High School  
September 2015 - June 2017

## **VOLUNTEER**

Science Olympiad Volunteer, Florida Atlantic University	October 2021
Middle School Math Tutor, New York Cares	January 2020
Beautifier of Inwood Park, New York Cares	July 2018, May 2019
Career Fair Helper, Penn State	August 2017
Expeditor, Susan G. Komen	September 2016
Meal Server, New York Cares	March 2016 - April 2016

## **TECHNICAL SKILLS**

Python, Mathematica, C/C++,  $\text{\LaTeX}$