

# JUSTIN H. ROBINSON – CURRICULUM VITAE

## CONTACT INFORMATION

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## EDUCATION

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<b>Georgia State University (GSU)</b> Ph.D., Astronomy Advisor: Dr. Misty Bentz	Expected 2022
<b>GSU</b> M.S., Physics Advisor: Dr. Misty Bentz	2020
<b>Saint Mary's College of California (SMC)</b> B.S. in Physics with Astrophysics Concentration Advisors: Dr. Ronald Olowin, Dr. Brian Hill	2017

## RESEARCH INTERESTS

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HI 21 cm emission line diagnostics; active galactic nucleus host galaxies; extragalactic distance determinations; galaxy baryonic/dynamical/dark matter mass determinations; relationships between galaxies and supermassive black holes; supermassive black hole mass measurements via reverberation mapping.

## PROFESSIONAL AFFILIATIONS

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Georgia Space Grant Consortium (GSGC)	2018-Present
American Astronomical Society (AAS) Member	2017-Present
Arecibo Legacy Fast ALFA (ALFALFA)	2014-2017
Arecibo Pisces-Perseus Supercluster Survey (APPSS)	2014-2017

## LEADERSHIP POSITIONS

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Astronomy Graduate Lab Coordinator, GSU	2019-2021
AstroPAL (Peer Advising Leader), GSU	2019-2021
Georgia Outreach Team for Space (GOT Space) Graduate Lead, GSGC	2018-2021
Graduate Student Liaison, AstroPAL & Physics Graduate Student Association, GSU	2018-2019
ALFALFA Undergraduate Research Leader, SMC	2017

## WORKSHOPS

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<b>Learning Science Through the Lens of Astronomy</b> Hosted professional development workshop for Georgia STEM teachers; interactive K-12 STEM presentations of astronomy-themed topics Recording available, <a href="#">click here</a>	2021
<b>Single Dish Training Workshop</b> Observational training and data analysis tools for the 100 meter Green Bank Telescope (GBT)	2018
<b>Undergraduate ALFALFA Workshop</b> Study of galaxy detections from radio spectrum, acquisition of detection characteristics and behavior from radio emission at the Green Bank Observatory	2016

## CURRENT POSITION

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**Graduate Research Assistant** 2017-Present  
GSU

## PREVIOUS EMPLOYMENT

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**Astronomy Graduate Lab Coordinator** 2019-2021  
GSU

**Mathematics Tutorial Teacher** 2016-2017  
Taught pre-calculus and calculus tutorial classes at SMC

**Laboratory Assistant** 2015-2017  
Assisted in the astronomy lab course at SMC

## SKILLS

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Proficient in IDL, Python, L<sup>A</sup>T<sub>E</sub>X, IRAF, DS9, MacOS, Windows, Microsoft Office Suite  
Knowledgeable in Linux, MaximDL  
CAMEL: geometric and dynamical modeling software of reverberation mapping data.  
Galfit: galaxy surface brightness modeling software.  
BusyFit: analytical modeling of emission line profiles.  
Green Bank Telescope GBTIDL: IDL suite for reduction and analysis of GBT spectral data.  
Remote observing, GBT  
Arecibo Radio Telescope IDL\_LBW: IDL suite for reduction and analysis of Arecibo spectral data.  
Remote observing, Arecibo Telescope

## PUBLIC OUTREACH

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**STEMapalooza Conference** 2021  
Presented GOT Space presentations and demonstrations to Georgia STEM teachers; ran virtual and augmented reality demonstrations

**10th Georgia NASA STEM Conference** 2020  
Presented professional development workshop to Georgia STEM teachers

**Scientific Consultant for “Race Through Space: Galaxy Edition” App** 2020  
Selected galaxies, provided physical information, and calculated distance scales for Science ATL and Atlanta Science Festival’s app  
[Click here for the app homepage](#)

**GSU Publicity & Outreach Committee Member** 2020-Present  
Reporting of outreach events and student groups in the GSU official newsletter.

**GOT Space Graduate Lead** 2018-2021  
GOT Space Program lead ambassador in association with the GSGC  
[Click here for GOT Space’s website](#)

## EVENTS

**GOT Space Virtual Presentations: Frederick Douglass High School** 2021  
Organized presentations for 5 classes, presented for 1

**GOT Space Virtual Presentations: Trip Elementary School** 2021  
Organized presentations for 7 classes

**GOT Space Virtual Presentations: Northside Elementary School** 2021  
Presented for 3 classes

**GOT Space Virtual Presentations: Wolf Creek Elementary School** 2020  
Organized demonstrations and presentations for 2 classes

**GOT Space Virtual Presentations: Stone Mountain Middle School** 2020  
Organized presentations for 4 classes

<b>GOT Space Virtual Presentations: Flat Shoals Elementary School</b>	2020
Presented for 2 classes	
<b>GOT Space Virtual Presentations: Jean Childs Young Middle School</b>	2020
Organized virtual presentations for 6 classes	
<b>GOT Space Virtual Presentations: Maynard Holbrook Jackson High School</b>	2020
Organized virtual presentations for 3 classes	
<b>Virtual GOT Space Public Talk</b>	2020
Hosted virtual talk and Q&A: “Building M87’s Supermassive Black Hole Image”	
Recording available, <a href="#">click here</a>	
<b>Atlanta Science Festival “Imagining the Future” Event</b>	2020
Presented for 4 classes at Jean Childs Young Middle School	
<b>NASA National Space Grant 30th Anniversary Event on Capitol Hill</b>	2020
1 of 3 representatives of Georgia outreach and GSGC; ran virtual and augmented reality demonstrations; met with 2 Georgia representatives to discuss impact and future funding	
<b>Trip Elementary School STEM Night</b>	2020
Organized science demonstrations and telescope observations, answered questions for several hundred students	
<b>GOT Space Presentations: Maynard Holbrook Jackson High School</b>	2020
Organized presentations for 6 classes	
<b>Carver Early College Science &amp; Engineering Fair</b>	2019
Organized 3 GOT Space ambassadors and I’s participation as science fair judges	
<b>GOT Space presentations: Maynard Holbrook Jackson High School</b>	2019
Organized presentations for 6 classes	
<b>STEM Undergraduate Ambassador Training Co-Facilitator</b>	2019
1 of 2 graduate lead facilitators for training of 18 undergraduate GOT Space ambassadors	
<b>Atlanta Race Through Space 5K</b>	2019
Ran GSGC sponsor tent	
<b>GOT Space presentations: Lanier High School</b>	2019
Organized presentations for 3 classes	
<b>Trip Elementary School STEM Night</b>	2019
Ran science demonstrations and answered questions for several hundred students	
<b>GOT Space presentations: Maynard Holbrook Jackson High School</b>	2019
Organized presentations for 4 classes	
<b>GOT Space presentations: Alpharetta High School</b>	2018
Lead presentation for Alpharetta Astronomy Club meeting	
<b>GOT Space presentations: Cristo Rey Jesuit High School</b>	2018
Organized presentations for 5 classes	
<b>Hard Labor Creek Observatory Volunteer</b>	2018-Present
Operate telescopes & answer public questions during open houses	
<b>SMC On-campus APPSS Research Display</b>	
<b>SMC Physics Outreach Program Member</b>	2015-2017
Research presentations at Saint Mary’s High School, Stockton CA and Athenian High School, Danville CA	
<b>SMC Physics &amp; Engineering Program Recruitment</b>	2015-2017
Represented the physics department on preview days for prospective students	

## INVITED TALKS AND COLLOQUIA

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<b>Space Telescope Science Institute Galaxies and AGNs Journal Club Guest Presenter</b>	2021
“Distances and Masses for 24 Host Galaxies of Reverberation-Mapped AGN”	

**United States Naval Observatory Journal Club Guest Presenter** 2021  
“Tully-Fisher Distances and Dynamical Mass Constraints for 24 Host Galaxies of Reverberation-Mapped AGN”

**Bradley Observatory at Agnes Scott College Open House** 2021  
“Probing Nearby Active Galaxies: Distance, Masses, Dark Matter, and Black Holes”  
Recording available, [click here](#)

## CONFERENCE TALKS

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**237th AAS Meeting, Talk Number 209.01** 2021  
“Dynamical Masses for the Host Galaxies of Reverberation-Mapped AGN”

**J. Robinson**, M. Bentz

**236th AAS Meeting, Talk Number 225.03** 2020  
“Fundamental Properties of Active Galaxies: Distances and Masses of Nearby Seyferts,”

**J. Robinson**, M. Bentz

Recording available, [click here](#)

**7th Perimeter Astronomy Conference** 2019  
“Connecting AGN Host Galaxies to the Cosmic Distance Ladder”

**Georgia Regional Astronomers Meeting** 2018  
“HI Spectroscopy of Reverberation-Mapped Active Galactic Nuclei”

Recording available, [click here](#)

**6th Perimeter Astronomy Conference** 2018  
“HI Spectroscopy of Reverberation-Mapped Active Galactic Nuclei”

Recording available, [click here](#)

**5th Perimeter Astronomy Conference** 2017  
“The Radio View of Galaxies in the Nearby Universe”

## ACCEPTED PROPOSALS

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**“HI Spectroscopy of Active Galaxies with Direct Black Hole Mass Measurements”**

GBT Project ID: GBT18B-258

Hours allocated: 208.25

## PEER-REVIEWED PUBLICATIONS

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**“Tully-Fisher Distances and Dynamical Mass Constraints for 24 Host Galaxies of Reverberation-Mapped AGN”**, Justin H. Robinson, Misty C. Bentz, Hélène M. Courtois, Megan C. Johnson, D. M. Crenshaw, Beena Meena, Garrett E. Polack, Michele L. Silverstein, Dading Chen 2021, ApJ, 912, 160

[Click here for the abstract](#)

**“HI Spectroscopy of Reverberation-Mapped Active Galactic Nuclei”**, Justin H. Robinson, Misty C. Bentz, Megan C. Johnson, Hélène M. Courtois, Benjamin Ou-Yang 2019, ApJ, 880, 68

[Click here for the abstract](#)

## RESEARCH EXPERIENCE

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**Undergraduate Research Mentor, GSU** 2019  
Trained and mentored undergraduate in current research project; calibration of galaxy distance measurement method

**SMC ALFALFA Research Leader** 2017  
Independent leader and trainer of 7 undergraduates from SMC and University of San Francisco (USF)  
Data reduction and analysis of galaxy detections from radio frequency

<b>APPSS Research Poster</b>	2016
Poster presentation at SMC Research Symposium	
<b>APPSS Independent Research</b>	2015-2016
NSF grant funded project; Statistical analysis of blank-field galaxy target outliers from APPSS	
<b>APPSS SMC Undergraduate Team Research</b>	2015
NSF grant funded project; galaxy classification, analysis, and cross-reference through use of radio and optical detections of targets	
Country-wide collaboration with Cornell University, Union College, USF, West Texas A&M, and others	

## OBSERVING EXPERIENCE

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100m GBT: Green Bank Observatory, Green Bank WV  
 305m Arecibo Telescope: Arecibo Observatory, Arecibo PR  
 3.5m A.R.C. Telescope: Apache Point Observatory, Sunspot NM  
 0.5m A.R.C.S.A.T. Telescope: Apache Point Observatory, Sunspot NM  
 20m Green Bank Telescope: Green Bank Observatory, Green Bank WV  
 0.60m Miller Telescope: Hard Labor Creek Observatory, Rutledge GA  
 0.4m Meade Schmidt-Cassegrain Telescope: Geissberger Observatory, Moraga CA

## TEACHING EXPERIENCE

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<b>GSU Substitute Lecturer</b>	2019
Taught 7 astronomy lectures as a substitute instructor	
<b>Astronomy Lab Instructor</b>	2017-2020
Taught 1010 and 1020 labs for introductory astronomy courses at GSU	
<b>Mathematics Tutorial Teacher</b>	2016-2017
Taught pre-calculus & calculus tutorial classes at SMC	
<b>Mathematics Tutor</b>	2016-2017
Student tutor at SMC	
<b>SMC Substitute Lecturer</b>	2016-2017
Taught 2 astronomy lectures as a substitute instructor	
<b>Teaching Assistant, Astronomy</b>	2015-2017
<b>Mathematics Private Tutor</b>	2013-2015

## DEPARTMENTAL SERVICE

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<b>Online Instruction Material Development</b>	2020
Built online curriculum for 1010 and 1020 introductory astronomy labs	
<b>Workshop Development for Graduate Students Through AstroPAL</b>	2019-2021
Developed material for 1st and 2nd year graduate students (qualifying exam preparation, coding, scientific writing, etc.)	

## REFERENCES

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