




# Alexander Gagliano

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## RESEARCH INTERESTS

Real-time transient classification for large surveys • Transient-host galaxy correlations • Early-time transient phenomena (CSM interaction, flash-ionization, shock-breakout) • SN Ia cosmology • galaxy simulations • data analysis & visualization tools

## EDUCATION

### University of Illinois at Urbana-Champaign

PhD in Astronomy (expected)

Advisor: Gautham Narayan

Cum. GPA: 3.96/4.00.

Champaign, IL

Aug 2018 – Present

### Virginia Polytechnic Institute & State University

BS in Computational Modeling & Data Analytics

Summa Cum Laude

Physics Minor, Honors Scholar

In-Major GPA: 4.00/4.00.

Blacksburg, VA

Aug 2013 – June 2017

## RESEARCH POSITIONS

### NSF Graduate Fellow | UIUC/NCSA

Advisor: Gautham Narayan

*An Early-Time Optical and Ultraviolet Excess in the type-Ic SN 2020oi  
Using Host Galaxy Information to Accurately Distinguish Supernovae*

Aug 2018 – Present

### Post-Bac. Researcher | Los Alamos National Lab

Advisors: Joseph Smidt, Aycin Aykutalp

*Waternet: A Chemical Network for Cosmological-Scale Molecular Studies*

Sept 2017 – Aug 2018

### Comp. Physics Intern | Los Alamos National Lab

Advisors: Joseph Smidt, Brandon Wiggins

*Probing The Cosmological Origins of Earth's Water*

June 2017 – Sept 2017

### Undergraduate Researcher | Social & Decision Analytics Lab.

Advisor: Stephanie Shipp, Gizem Korkmaz

*Quantifying the Impact of Open Source Packages in R*

Aug 2016 – May 2017

### Software Intern | Network Dynamics & Simulations Lab.

Advisor: Eric Nordberg, Henning Mortveit

*Designing a Third-Generation Survey for Gravitational Microlensing Events*

Sept 2016 – May 2017

### Undergraduate Researcher | Virginia Tech

Advisor: Shunsaku Horiuchi

*Analyzing Gamma Ray Emission from Nearby non-AGN Galaxies*

Aug 2015 – May 2017

### Undergraduate Researcher | Cerro-Tololo Observatory

Advisor: Juan Madrid

*A Wide-field Map of Intracluster Globular Clusters in Coma*

Jan 2015 – Mar 2015

### High-School Intern | NASA Goddard

Advisor: Jeremy Schnittman

*Designing a Third-Generation Survey for Gravitational Microlensing Events*

Aug 2011 – June 2013

## FELLOWSHIPS AND AWARDS

- NSF Graduate Research Fellowship (\$102k) 2020-2023
- Illinois Distinguished Fellowship (\$75k) 2018-2022
- Center for Astrophysical Surveys Fellowship (\$30k) 2019
- ASA Astrostatistics Interest Group Best Paper Award, Finalist 2021

• ASP Conference Scholarship	2020
• DPS/AAS Education and Outreach Grant (awarded for astro[ <a href="#">sound</a> ]bites)	2020
• University-wide Fellowship Application Competition Award	2019
• SC18 Supercomputing Visualization Showcase (2 <sup>nd</sup> )	2018
• University of Illinois Travel Grant (\$350)	2018
• Virginia Tech Rhodes & Marshall Scholarship Nominee	2017
• Academy of Integrated Science Distinguished Senior (\$1.4k)	2017
• College of Science Outstanding Senior, Finalist (Top 1%)	2017
• Mathematical Contest in Modeling, Meritorious Winner (Top 7% Globally)	2017
• Astronomy Society of the Pacific Meeting Travel Grant	2016
• Wayne & Claire Horton Fellowship (\$10k)	2015
• Best Presentation, Virginia Honors Council	2015
• Sigma Phi Epsilon Balanced Man Scholarship (\$1k)	2015
• University Honors Norrine Bailey Spencer Strong Start Award	2013
• Loudoun Future Leaders Scholarship (\$1.5k)	2013
• International Space Olympics, Astrophysics Category (1 <sup>st</sup> /200)	2012
• Moody's Mega Math Competition, Honorable Mention (\$1k)	2012

## REFEREED PUBLICATIONS

### FIRST AUTHOR:

3. **An Early-Time Optical and Ultraviolet Excess in the type-Ic SN 2020oi.**  
[Gagliano, A.](#) , Izzo, L., Kilpatrick, C.D., et al., 2021.  
*arxiv pre-print*, doi:2105.09963.
2. **GHOST: Using Only Host Galaxy Information to Accurately Associate and Distinguish Supernovae.**  
[Gagliano, A.](#) , Narayan, G., Engel, A., and Kind, M.C., 2021.  
*The Astrophysical Journal*, 908(2), p.170.
1. **Waternet: A Non-Equilibrium Chemical Model for Tracking Molecules in Cosmological Simulations.**  
[Gagliano, A.](#) , Smidt, J., Bialy, S., Jones, S., Wiggins, B., and Fields, J., 2021.  
*in prep.*

### CO-AUTHOR:

4. **Simulating Transient Host Galaxies for the PLASTiCC v2 Challenge.**  
Lokken, M. and [Gagliano, A.](#) , 2021. *in prep.*
3. **Statistical Modeling of Galaxy Catalogs with Normalizing Flows.**  
Crenshaw, J.F. Kalmbach, B., Malz, A. et al. (incl. [Gagliano, A.](#) ), 2021. *in prep.*
2. **The Young Supernova Experiment: Survey Goals, Overview, and Operations.**  
Jones, D.O., Foley, R.J., Narayan, G., et al. (incl. [Gagliano, A.](#) )  
*The Astrophysical Journal*, 908.2 (2021): p.143.
1. **A Wide-field Map of Intracluster Globular Clusters in Coma.**  
Madrid, J.P., O'Neill, C.R., [Gagliano, A.T.](#) and Marvil, J.R., 2018.  
*The Astrophysical Journal*, 867(2), p.144

## TELESCOPE PROPOSALS

James Webb Space Telescope (JWST) – 17.2 hours awarded (col) <i>Nucleosynthesis, Astrophysics, and Cosmology with IR Observations of a Gravitational Wave Counterpart</i>	GO Cycle 1, 2021
James Webb Space Telescope (JWST) – 9.3 hours awarded (col) <i>Detecting the Synthesis of the Heaviest Elements with Photometry of a Kilonova in the Optically Thin Phase</i>	GO Cycle 1, 2021
James Webb Space Telescope (JWST) – 14.9 hours awarded (col) <i>Nebular Spectroscopy of a Kilonova with JWST</i>	GO Cycle 1, 2021

## SEMINARS & COLLOQUIA

LSST Transient and Variable Science Plenary, invited ( <i>online</i> )	June 2021
DESC Photo-z Working Group, invited ( <i>online</i> )	April 2021
DESC Supernova Working Group, invited ( <i>online</i> )	April 2021
NCSA, invited ( <i>Champaign, IL, USA</i> )	March 2020

## CONFERENCE RESEARCH TALKS

JSM2021, invited ( <i>Seattle, WA, USA</i> )	Aug 2021
Illinois Astrofest #2 ( <i>online</i> )	May 2021
LSSTC Enabling Science Broker Workshop II, invited ( <i>online</i> )	Apr 2021
LSST DESC plenary, invited ( <i>online</i> )	Feb 2021
Rubin Project and Community Workshop ( <i>online</i> )	Aug 2020
EAS 2020 ( <i>online</i> )	Jul 2020
LSST DESC ( <i>Tucson, AZ, USA</i> )	Jan 2020
American Astronomical Society Meeting #233 ( <i>Seattle, WA, USA</i> )	Jan 2019
Los Alamos National Laboratory Student Symposium ( <i>Los Alamos, NM, USA</i> )	Aug 2017
International Space Olympics, invited ( <i>Korolyov, Russia</i> )	Oct 2012

## JOURNAL CLUB TALKS

Yale Galaxy Lunch, invited ( <i>online</i> )	Mar 2021
UIUC Journal Club	May 2021
—	Feb 2019

## CONFERENCE POSTERS

Illinois Astrofest #1 ( <i>Champaign, IL, USA</i> )	Apr 2019
Water Workshop ( <i>Zurich, Switzerland</i> )	Feb 2018
American Astronomical Society Meeting #231 ( <i>Baltimore, MD, USA</i> )	Jan 2018
Virginia Biocomplexity Institute Research Symposium ( <i>Blacksburg, VA, USA</i> )	Nov 2016
American Astronomical Society Meeting #227 ( <i>Kissimmee, FL, USA</i> )	Jan 2016
National Science Foundation REU Symposium ( <i>Arlington, VA, USA</i> )	Oct 2015
Virginia Tech Undergraduate Research Symposium ( <i>Blacksburg, VA, USA</i> )	Jul 2015
Virginia Collegiate Honors Council Spring Conference ( <i>Richmond, VA, USA</i> )	Apr 2015

## WORKSHOPS & SUMMER SCHOOLS

LSSTC Enabling Science Broker Workshop II ( <i>online</i> )	Apr 2021
KROME Astrochemistry Bootcamp ( <i>online</i> )	Feb 2021
LSSTC Enabling Science Broker Workshop I ( <i>online</i> )	Oct 2020
DotDotAstronomy ( <i>online</i> )	Aug 2020
GPAP Plasma Physics Summer School ( <i>Swarthmore, PA, USA</i> )	Apr 2019
Summer School in Statistics for Astronomers XV ( <i>State College, PA, USA</i> )	Jun 2019
La Serena School for Data Science ( <i>La Serena, Chile</i> )	Aug 2018

## SELECTED OUTREACH

<b>Astro[Sound]Bites  </b> Founder and Co-Host	Nov 2019–Present
<ul style="list-style-type: none"> <li>• Founded bi-weekly technical astronomy podcast</li> <li>• 36 episodes, &gt;7k downloads, 200 listeners/episode in 55 countries</li> </ul>	
<b>Astronomy on Tap, Champaign-Urbana  </b> Organizer	Aug 2020–Present
<ul style="list-style-type: none"> <li>• Designing posters, emceeing and scheduling speakers for monthly public talks (remote as of 2020)</li> </ul>	
<b>Astronomical Society of the Pacific  </b> Design Tester	Mar 2019 – May 2020
<ul style="list-style-type: none"> <li>• Evaluated new outreach strategies for improving audience engagement in STEM events</li> </ul>	
<b>Education Justice Project  </b> Workshop Coordinator	Jan 2019 – Present
<ul style="list-style-type: none"> <li>• Designing data science workshops at Danville Correctional Center for 30 incarcerated students</li> </ul>	
<b>Universe Awareness  </b> Astronomy Ambassador	Jan 2017 – Jun 2018
<ul style="list-style-type: none"> <li>• Coordinated research talks, stargazing events in Los Alamos</li> </ul>	
<b>The Story Of Foundation  </b> Exhibit Researcher	Dec 2016 – Dec 2017
<ul style="list-style-type: none"> <li>• Spearheaded creation of sound-based astronomy exhibit in Goa, India using Python, Arduino; viewed by &gt;2k students</li> </ul>	
<b>Computational Modeling Club  </b> Vice President	Aug 2016 – May 2017
<ul style="list-style-type: none"> <li>• Created and led student mentorship program</li> <li>• Coordinated 3-day hackathon of 100 students</li> </ul>	

<b>IAU Office of Astronomy for Development   Intern</b>	Aug 2016 – Sept 2016
<ul style="list-style-type: none"> <li>Designed and led secondary school science activities for National Science Week with SAAO, reaching &gt;1.2k students</li> </ul>	
<b>American Astronomical Society   Astronomy Ambassador</b>	Jan 2015 – Jan 2016
<ul style="list-style-type: none"> <li>Participated in 2-day outreach training</li> <li>Hosted stargazing nights at Virginia Tech (in English) and Berthe et Jean, Gabon (in French)</li> </ul>	

## OUTREACH TALKS

Virginia Tech Society of Physics Students, invited ( <i>online</i> )	Aug 2021
Communicating Astronomy with the Public ( <i>online</i> )	May 2021
Bay Area Science Festival, invited ( <i>online</i> )	Oct 2020
Champaign-Urbana Astronomical Society, invited ( <i>online</i> )	Oct 2020
PechaKucha Night Vol. 31, invited ( <i>Champaign, IL, USA</i> )	Mar 2020
Astronomy on Tap Champaign-Urbana ( <i>Champaign, IL, USA</i> )	Feb 2020
AAS Astronomy Ambassadors Alumni Panel, invited ( <i>Seattle, WA, USA</i> )	Jan 2020
Communicating Astronomy with the Public ( <i>Fukuoka, Japan</i> )	Mar 2018
UNM Community Education Program, invited ( <i>Los Alamos, NM, USA</i> )	Feb 2018
The Story of Space, invited ( <i>Goa, India</i> )	Nov 2017
Academy of Science Commencement Address, invited ( <i>Sterling, VA, USA</i> )	Jun 2017
CMDA Commencement Address, invited ( <i>Blacksburg, VA, USA</i> )	May 2017
Spark, Virginia TEDx Event ( <i>Blacksburg, VA, USA</i> )	Nov 2016

## ACADEMIC SERVICE

<b>LSST/DESC APS-IDEA Team   Member</b>	Jan 2021–Present
<ul style="list-style-type: none"> <li>Discuss collaboration-wide initiatives for increasing diversity</li> </ul>	
<b>Society for Equity in Astronomy   Journal Club Lead</b>	Jan 2021–Present
<ul style="list-style-type: none"> <li>Lead monthly department-wide discussions on DEI topics</li> </ul>	
<b>Graduate Student Astro-ph   Organizer</b>	Aug 2019–Aug 2020
<ul style="list-style-type: none"> <li>Coordinated graduate student presentations and discussions of recent publications</li> </ul>	
<b>VT Honors Odyssey Fellowships   Selection Committee Member</b>	Mar 2018

## MEDIA

PechaKucha Night CU. (2020). <a href="#">Alex Gagliano</a> . YouTube.	
NCSA (2020). <a href="#">NCSA and U of I Announce new Center Surveys</a> . NCSA/UIUC.	
Hille, K. (2018). <a href="#">Hubble Uncovers Thousands of Globular Star Clusters</a> . NASA.	
UNAWWE. (2017). <a href="#">'Story Of Space' Astronomy Festival By UNAWWE Ambassador</a> . UNAWWE.	
VT (2017). <a href="#">Scholarship winners Alex Gagliano and Amy Harris honored</a> . VT.	
TEDxTalks. (2017). <a href="#">Looking out to Look in</a> . YouTube.	
Mackay, S. (2017). <a href="#">Undergraduates assist in economic impact study</a> . Virginia Tech.	
Angelus, A. D. (2017). <a href="#">Virginia Tech group overcomes cultural seclusion</a> . Collegiate Times.	
Madrid, J. (2016). <a href="#">Alex Gagliano presenting his AAS Poster</a> . ATNF.	
Geddie, J. L. (2013). <a href="#">Alex Gagliano extends talent towards to the stars</a> . Loudoun Times.	

## ACTIVE COLLABORATIONS

LSST Transient and Variable Stars (TVS) Collaboration • Dark Energy Science Collaboration (LSST/DESC) • Young Supernova Experiment (YSE) • the ANTARES Project • the PLAsTiCC Team	
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