




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 Champaign, IL
PhD in Astronomy (expected) Aug 2018 – Present
Advisor: Gautham Narayan
Cum. GPA: 3.96/4.00.

Virginia Polytechnic Institute & State University Blacksburg, VA
BS in Computational Modeling & Data Analytics Aug 2013 – June 2017
Summa Cum Laude
Physics Minor, Honors Scholar
In-Major GPA: 4.00/4.00.

RESEARCH POSITIONS

NSF Graduate Fellow | UIUC/NCSA Aug 2018 – Present
Advisor: Gautham Narayan
An Early-Time Optical and Ultraviolet Excess in the type-Ic SN 2020oi Using Host Galaxy Information to Accurately Distinguish Supernovae

Post-Bac. Researcher | Los Alamos National Lab Sept 2017 – Aug 2018
Advisors: Joseph Smidt, Aycin Aykotalp
Waternet: A Chemical Network for Cosmological-Scale Molecular Studies

Comp. Physics Intern | Los Alamos National Lab June 2017 – Sept 2017
Advisors: Joseph Smidt, Brandon Wiggins
Probing The Cosmological Origins of Earth's Water

Undergraduate Researcher | Social & Decision Analytics Lab. Aug 2016 – May 2017
Advisor: Stephanie Shipp, Gizem Korkmaz
Quantifying the Impact of Open Source Packages in R

Software Intern | Network Dynamics & Simulations Lab. Sept 2016 – May 2017
Advisor: Eric Nordberg, Henning Mortveit
Developing Realistic Epidemiology Simulations from Public Data

Undergraduate Researcher | Virginia Tech Aug 2015 – May 2017
Advisor: Shunsaku Horiuchi
Analyzing Gamma Ray Emission from Nearby non-AGN Galaxies

Undergraduate Researcher | Cerro-Tololo Observatory Jan 2015 – Mar 2015
Advisor: Juan Madrid
A Wide-field Map of Intracluster Globular Clusters in Coma

High-School Intern | NASA Goddard Aug 2011 – June 2013
Advisor: Jeremy Schnittman
Designing a Third-Generation Survey for Gravitational Microlensing Events

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[sound]bites) 2020
- University-wide Fellowship Application Competition Award 2019
- SC18 Supercomputing Visualization Showcase (2nd) 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 (1st/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

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| 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>Kissimee, 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

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

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

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

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

MEDIA

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