

Gillen Brown

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Education

University of Michigan

Ph.D. in Astronomy

Advisor: Oleg Y. Gnedin

Dissertation: Investigating the Formation of Star Clusters with Simulations and Observations

Ann Arbor, MI

September 2016 — May 2022

University of Missouri-Kansas City (UMKC)

B.S. Physics with emphasis in Astronomy

Math and Computer Science minors

Kansas City, MO

May 2016

Publications

5. **Brown, G.**, Gnedin, O. Y., “Testing Feedback from Star Clusters in Simulations of the Milky Way Formation”, 2022, MNRAS, 514, 280
4. **Brown, G.**, Gnedin, O. Y., “Radii of Young Star Clusters in Nearby Galaxies”, 2021, MNRAS, 508, 5935
3. **Brown, G.**, Gnedin, O. Y., “Improving performance of zoom-in cosmological simulations using initial conditions with customized grids”, 2021, New Astronomy, 84, 101501
2. **Brown, G.**, Gnedin, O. Y., “Nuclear Star Clusters in Cosmological Simulations”, 2018, ApJ, 864, 94
1. Gonzalez, A., Gettings, D., Brodwin, M., et al. including **Brown, G.**, “The Massive and Distant Clusters of WISE Survey. I: Survey Overview and a Catalog of >2000 Galaxy Clusters at $z \simeq 1$ ”, 2019, ApJS, 240, 33

Presentations

- Origins Workshop - ISM, Star and Cluster Formation, January 2022, talk: “Radii of Young Star Clusters in Nearby Galaxies”
- Santa Cruz Galaxy Workshop, August 2019, poster: “Star Cluster Formation in Cosmological Simulations”
- University of Michigan Graduate Student Lunch Talks, December 2019, talk: “Galactic Chemical Evolution in Cosmological Simulations”
- University of Michigan Graduate Student Lunch Talks, April and September 2017, talk: “Nuclear Star Clusters in Cosmological Simulations”
- UMKC Graduate Student Seminar, April 2016, talk: “Quantifying the Effect of WISE Data on Euclid Stellar Mass Estimates”
- UMKC SEARCH Symposium, April 2016, talk: “Quantifying the Effect of WISE Data on Euclid Stellar Mass Estimates”
- Mid-American Regional Astrophysics Conference, April 2016, talk: “Quantifying the Effect of WISE Data on Euclid Stellar Mass Estimates”
- UMKC SUROP Symposium, September 2015, poster: “Quantifying the Effect of WISE Data on Euclid Stellar Mass Estimates”
- Mid-American Regional Astrophysics Conference, April 2015, talk: “An Accurate Method for Measuring Redshifts of High Redshift Galaxy Clusters”
- Undergraduate Research Day at the Capitol, March 2015, poster: “An Easy and Accurate Method for Measuring Distance to Galaxy Clusters”

Grants and Computing Time Allocations

University of Michigan — Rackham Predoctoral Fellowship	2021-2022
HST Cycle 29 Program AR-16614 — “Measuring sizes of young star clusters in nearby galaxies”	2021
TACC Frontera — 2.38 million CPU-hour allocation, Co-I (Oleg Y. Gnedin)	2021
XSEDE Stampede2 and Anvil — 5.7 million CPU-hour allocation, Co-I (Oleg Y. Gnedin)	2021
XSEDE Stampede2 — 7.44 million CPU-hour allocation, Co-I (Oleg Y. Gnedin)	2020
Michigan Institute for Computational Discovery and Engineering — Catalyst Grant, Co-I (Oleg Y. Gnedin)	2020

Teaching

University of Michigan

GSI, Astro 201 — Introduction to Astrophysics	January — April 2021
Led discussion sections, graded work, and held office hours for introductory class for astrophysics majors	
Graduate Student GSI Mentor	September 2019 — April 2021
Consultant and teaching mentor to other graduate student instructors in the department	
Instructor of Record, Astro 127 — Naked Eye Astronomy	May — June 2019
Taught the course and developed all materials, including lectures, homework, and exams	
GSI, Astro 102 — Introductory Astronomy: Stars, Galaxies, and the Universe	January — April 2019
Led discussion sections, graded work, and held office hours for introductory class for non-science majors	
GSI, Astro 107 — The Dark Side of the Universe	January — April 2019
Graded work and held office hours for introductory class for non-science majors	
GSI, Astro 101 — Introductory Astronomy: The Solar System and Search for Life	January — December 2017
Led discussion sections, graded work, and held office hours for introductory class for non-science majors	

University of Missouri — Kansas City

Supplemental Instruction (SI) Mentor	August 2015 — May 2016
Assisted other SI leaders in developing and executing group study sessions	
Helped in developing SI Leader training	
Supplemental Instruction Leader	August 2014 — December 2015
Led study groups for calculus-based introductory physics classes.	
Awarded <i>SI Leader of the Term</i> for Spring 2015	
Teaching Assistant	August 2014 — May 2015
Assisted in class and graded labs for introductory astronomy lab for non-science majors	

Leadership

Michigan Dark Skies Group —Co-Coordinator	September 2017 — April 2022
Worked with Central Student Government to create a resolution urging UM to reduce light pollution	
Met with the organizers of a development to urge them to use dark sky-friendly lighting	
Organized the activities of the group	
Presented several public talks	
UM Astronomy DEI Champion Award Winner	2021
Awarded for founding the Astronomy Antiracism Reading Group	
UM Astronomy Antiracism Reading Group — Leadership Team	June 2020 — September 2021
Founded this reading group and organized meetings	
UM Astronomy Galaxy Group Organizer	September 2019 — April 2021
Coordinated and organized speakers for biweekly Galaxy Group meetings	

- UM Astronomy Curriculum Committee — Graduate Student Representative** 2018, 2021
Helped manage the undergraduate and graduate astronomy curriculum
- Michigan Institute for Data Science — Basketball Data Challenge — Winner** March 2020
Won this team competition by extracting actionable insights from basketball player performance data
- UM Astronomy Prospective Student Weekend Organizer** March 2020
Organized this event for prospective students as it transitioned from in-person to remote.
- Astronomy on Tap: Ann Arbor — Leadership Team** September 2019 — March 2020
Member of leadership team, coordinated speakers and themes for monthly events
- University of Michigan Museum of Natural History Science Communication Fellow** January 2019 — March 2020
Several professional development workshops on effectively engaging the public
Created a hands-on demo and shared it at several Museum events
Gave several public talks at the museum for visitors of all ages
- UM Astronomy Prelim Review Committee — Graduate Student Representative** September 2019 — December 2020
Represented the grad students on this committee that reshaped the qualifying exam
Led a survey and wrote a report to summarize grad student feelings on the old and new exam formats
- Graduate Student Colloquium Lunch Organizer** September 2018 — April 2019
Organized and ordered food for the weekly graduate student lunches with the colloquium speaker
- UMKC Galaxy Evolution Group Member** August 2014 — August 2016
Developed a series of Python tutorials for new group members
- Vice President of UMKC Society of Physics Students** August 2014 — May 2016
Engaged in many science outreach activities and physics demonstrations to local groups
Organized partnerships with local under-served school districts to enrich science education
- UMKC SEARCH Research Grants** 2016
Awarded 2 research grants to pursue undergraduate research at UMKC
- Undergraduate Research Ambassador** August 2015 — May 2016
Presented at multiple events to recruit students into getting involved in undergraduate research
- Undergraduate Research Day at the Capitol** April 2015
Presented my research to representatives and aides at the Missouri State Capitol

Public Talks

- Brighton District Library, "Light Pollution and Michigan's Dark Skies" May 2022
- Warren Astronomical Society, "Origin of the Elements" May 2021
- Plymouth District Library, "Light Pollution and Michigan's Dark Skies" February 2021
- University of Michigan Museum of Natural History, "Building the Universe" 9 times in 2019 — 2020
- Astronomy on Tap: Ann Arbor, "Origin of the Elements" October 2019
- Ann Arbor Hands-On Museum, "How the Moon Formed" July 2019
- Ellis Library & Reference Center, "The Scientific Legacy of the Moon Landings" July 2019
- Nerd Nite Ann Arbor, "Origin of the Elements" March 2019
- Ignite Ann Arbor, "Reclaiming the Night Sky" November 2018