Drew Lapeer – Curriculum Vitae
(they/them/theirs)

Graduate Student
University of Massachusetts, Department of Astronomy
LGRT B532A, 710 North Pleasant Street Amherst, MA 01003-9305

dlapeer@umass.edu / drew@giantmolecular.cloud
giantmolecular.cloud
Last updated: Sept. 8th, 2025

EDUCATION

2024 – · · · ·	**PhD, MSc, University of Massachusetts Amherst** Astronomy. Advisor: *Professor Daniela Calzetti*
2021 – 2024	**BSc., University of Michigan** Astronomy & Astrophysics (Honors), Interdisciplinary Physics. Thesis title: *Dynamical SMBH Detection in Compact Galaxies with NIRSpec IFU* Advisor: *Professor Monica Valluri*
2022 – 2023	**Washtenaw Community College** General Studies
2019 – 2021	**Macomb Community College** General Studies

RESEARCH APPOINTMENTS

2024 – · · · ·	**Graduate Research Assistant,** Department of Astronomy, College of Natural Sciences, University of Massachusetts Amherst. Advisors: *Professor Daniela Calzetti* and *Professor Subhransu Maji* Synopsis: *Investigating star formation and stellar feedback through the lens of young star clusters with high-resolution NIRCam and MIRI data of local-volume star forming galaxies. As a member of the FEAST collaboration (P.I. A. Adamo), I focus primarily on understanding the impact of stellar feedback and star cluster evolution on galactic scales.*
2022 – 2024	**Undergraduate Research Assistant,** Department of Astronomy, College of Language, Science, and Arts, University of Michigan. Advisor: *Professor Monica Valluri* Synopsis: *Investigated the limitations of JWST NIRSpec IFU stellar kinematics on the detection of supermassive black holes in compact galaxies, and aided in SMBH detections. Focused primarily on understanding the lowest mass black holes detectable with JWST, and applied those findings to the first dynamical SMBH detection with JWST.*

PUBLICATIONS

(NASA ADS)

First and Second Author

1. **D. Lapeer**, D. Calzetti, K. Grasha, *et al.*, "FEAST: Probing Hierarchical Star Formation with the Spatial Distributions of Young Star Clusters," *submitted to ApJ*, 2025.
2. B. Tahmasebzadeh, **A. Lapeer**, E. Vasiliev, M. Valluri, M. A. Taylor, and S. Thompson, "The Lower Limit of Dynamical Black Hole Masses Detectable in Virgo Compact Stellar Systems Using the JWST/NIRSpec IFU," *The Astrophysical Journal*, vol. 974, no. 1, 60, p. 60, Oct. 2024. DOI: 10.3847/1538-4357/ad6a1b. arXiv: 2408.02142 [astro-ph.GA].

Nth Author

1. G. Bortolini, M. Correnti, A. Adamo, *et al.*, "FEAST: JWST/NIRCam view of the Resolved Stellar Populations of the Interacting Dwarf Galaxies NGC~4485/NGC~4490," *in press at ApJ*, arXiv:2509.01740, arXiv:2509.01740, Sep. 2025. DOI: 10.48550/arXiv.2509.01740. arXiv: 2509.01740 [astro-ph.GA].

2. D. Calzetti, R. C. Kennicutt, A. Adamo, *et al.*, "Quantification of The Age Dependence of Mid-Infrared Star Formation Rate Indicators," *in press at ApJ*, arXiv:2508.08451, arXiv:2508.08451, Aug. 2025. DOI: 10.48550/arXiv.2508.08451. arXiv: 2508.08451 [astro-ph.GA].

3. M. Correnti, G. Bortolini, F. Dell'Agli, *et al.*, "FEAST: Probing the Stellar Population of the Starburst Dwarf Galaxy NGC 4449 with JWST/NIRCam," *The Astrophysical Journal*, vol. 990, no. 1, 72, p. 72, Sep. 2025. DOI: 10.3847/1538-4357/adec74. arXiv: 2507.03420 [astro-ph.GA].

4. A. Knutas, A. Adamo, A. Pedrini, *et al.*, "FEAST: JWST uncovers the emerging timescales of young star clusters in M83," *in press at ApJ*, arXiv:2505.08874, arXiv:2505.08874, May 2025. DOI: 10.48550/arXiv.2505.08874. arXiv: 2505.08874 [astro-ph.GA].

5. A. Pedrini, A. Adamo, A. Bik, *et al.*, "The near infrared SED of young star clusters in the FEAST galaxies: Missing ingredients at 1-5 m," *in press at ApJ*, arXiv:2509.01670, arXiv:2509.01670, Sep. 2025. DOI: 10.48550/arXiv.2509.01670. arXiv: 2509.01670 [astro-ph.GA].

6. M. A. Taylor, B. Tahmasebzadeh, S. Thompson, *et al.*, "A Supermassive Black Hole in a Diminutive Ultra-compact Dwarf Galaxy Discovered with JWST/NIRSpec+IFU," *in press at ApJ Letters*, arXiv:2503.00113, arXiv:2503.00113, Feb. 2025. DOI: 10.48550/arXiv.2503.00113. arXiv: 2503.00113 [astro-ph.GA].

INVITED (†) AND CONTRIBUTED TALKS

2025 † **Pennsylvania State University Astronomy Seminar**, The Spatial Evolution of Star Clusters and the Hierarchy of Star Formation

† **Tufts University Astronomy Seminar**, Hierarchical Star Formation in Local Volume Galaxies with JWST-FEAST

† **University of Kansas Lunch Seminar**, Extending Star Formation Studies Beyond the Milky Way with JWST

2023 **University of Michigan Undergraduate Research Talks** Dynamically Detecting SMBHs in Compact Galaxies with JWST NIRSpec IFU

POSTERS

1. **A. Lapeer**, B. Tahmasebzadeh, M. Valluri, E. Vasiliev, and M. Taylor, "Do Broad Background Potentials Impact Dynamical SMBH Detection?," ser. University of Michigan Undergraduate Symposium, May 2024.

2. **A. Lapeer**, B. Tahmasebzadeh, M. Valluri, E. Vasiliev, and M. Taylor, "Probing the Lower Limits of Detectable Central Black Hole Masses in Virgo Cluster CSS with JWST NIRSpec IFU Kinematics," in *American Astronomical Society Meeting Abstracts #243*, ser. American Astronomical Society Meeting Abstracts, vol. 243, Feb. 2024, 110.06, p. 110.06.

3. **A. Lapeer**, B. Tahmasebzadeh, M. Valluri, E. Vasiliev, and M. Taylor, "How Low Can You Go? Lower Limits of Recoverable SMBH Mass in Virgo Cluster UCDs from JWST NIRSpec IFU Data," ser. Great Lakes Clusters and Streams Conference, Aug. 2023.

4. **A. Lapeer**, B. Tahmasebzadeh, M. Valluri, E. Vasiliev, and M. Taylor, "How Low Can You Go? Lower Limits of Recoverable SMBH Mass in Virgo Cluster UCDs from JWST NIRSpec IFU Data," ser. University of Michigan Undergraduate Symposium, May 2023.

AWARDS & ACHIEVEMENTS

2024 **Walter W. Wada Award for Community Engagement**, Department of Physics, University of Michigan ($800)

TEACHING

2025 **Graduate Instructor**, *Research Experience in Astronomy for Teachers*
Lead graduate instructor and lab lead for a summer course designed to assist K-12 public school teachers from Springfield, MA in incorporating astronomy into science lectures.

TEACHING (continued)

2022-2024 **Math, Physics, CS Tutor** , *Washtenaw Community College*
Tutored a wide range of students in math (arithmetic through differential equations, linear algebra), physics (intro physics I, II) and computer science (unix, Python, C++).

2023-2024 **Undergraduate Lab Assistant**, *Department of Astronomy, University of Michigan*
Ran observing labs and assisted students in introductory astronomy (ASTRO 101, 102) and astrophysics (ASTRO 201) labs throughout several semesters. This included operating several telescopes, motorized dome operation, question answering, and worksheet help.

Undergraduate Instructor, *Michigan Math and Science Scholars Program, University of Michigan*
Was the sole undergraduate instructor for a 2-week, intensive astronomy course for high school students from around the world focused on dark matter and black holes. Designed course materials, ran 4-hour, daily programming labs, ran observing nights, chaperoned field trips, and more.

MENTORSHIP

(† = primary mentor)

2024 – · · · · † **Jeremy Sun**, University of Massachusetts Undergraduate

2024 – 2025 **Emma Davis**, Smith College Undergraduate, now PhD at University of Rochester

2023 – 2024 **Callum Bloom**, University of Michigan Undergraduate

OUTREACH & SERVICE

2025 – · · · · **Astronomy on Tap – Western Mass. Organizing Committee**
Member of the organizing committee for the western Massachusetts branch of Astronomy on Tap

2024 – · · · · **Astrobites Author**
Author for popular science communication platform Astrobites, which aims to provide summaries of new research aimed at undergraduates

GRAD Mentor
Graduate mentor through the GRAD program, aimed at helping undergraduates apply to graduate programs in astronomy and physics. Mentored several students and assisted them in their applications.

2024 **Astronomy Graduate School Application Guide**
Lead author of a comprehensive, 20 page guide and collection of resources aimed at de-mystifying graduate school applications in astronomy. Specifically aimed towards non-traditional students like myself.

2023 – 2024 **Astronomy Monthly at Washtenaw Community College**
Founded and maintained a monthly astronomy group at WCC aimed at involving community college students in the field. Ran observing nights, hosted science talks, ran python labs, and more.

Telescope Operator and Outreach Coordinator
Helped run public observing nights as the primary telescope and dome operator of the 0.4m telescope at the University of Michigan. Engaged with the public, ran telescopes, answered questions, and more.

Not Rich @ UMich Board Member
Founding board member of Not Rich @ UMich, a student organizing aimed at combating poverty related issues in the undergraduate population at the University of Michigan. Facilitated group grocery trips, ran pay-as-you-can dinner events, and educated the broader community on wealth disparity at the university.

PROFESSIONAL MEMBERSHIPS

2023 – · · · · **American Astronomical Society**

AAS Division on Dynamical Astronomy

SKILLS

Languages	English (Native), Spanish (Conversational/Basic).
Programming	Python, C++, Html, css, LaTeX
Packages	Numpy, Astropy, Matplotlib, SciPy, Photutils, AGAMA, astroML, Lmfit, emcee.
Tools	DS9, GALFIT, MAST, Git, FORSTAND, APT.
Misc.	Data analysis, Data visualization, Microsoft Office, Graphic Design, Science communication, Scientific writing (journalistic + academic)

REFERENCES

Available on Request