

Tristan Parmerlee

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EDUCATION

Loyola University Chicago Bachelor of Science in Physics with Computer Science and Mathematics – Dean’s List	Aug. 2024 – Present <i>Chicago, IL</i>
Drake University Bachelor of Science in Physics, Astronomy, and Mathematics – Dean’s List	Aug. 2022 – May 2024 <i>Des Moines, IA</i>

RESEARCH EXPERIENCE

Northwestern CIERA REU Northwestern University <ul style="list-style-type: none">Conducted research focused on stellar collisions, dense galactic clusters, and machine learning.Participated in multiple career development programs, such as RCTP (research communication training program) and Python workshops.Prepared a writing deliverable, website, and poster related to project results.Future research ongoing during Fall 2025.	June 2025 – Present <i>Evanston, IL</i>
MISSFIT Student Research Lead Drake University <ul style="list-style-type: none">Developed the artificial gravity project for the student-led MISSFIT (magneto-ionization spacecraft shielding for interplanetary travel) collaboration.Designed 3-D printed proof of concept for a new approach to artificial gravity generator.Organized team schedule and meetings and designated projects to other members.Assisted in work of other subgroups, such as the computational and biological subgroups.	Jan. 2023 – July 2024 <i>Des Moines, IA</i>

RELEVANT COURSE WORK

Loyola University Chicago <ul style="list-style-type: none">Freshman Projects, Electronics, Optics, Theoretical Mechanics, Electricity and Magnetism, Thermal Physics and Statistical Mechanics, Quantum Mechanics, General Relativity and Cosmology, Undergraduate ResearchIntroduction to Probability, Introduction to Real Analysis I, Introduction to Complex Analysis, Abstract Algebra, Advanced Abstract AlgebraIntroduction to Computing Tools, Introduction to Object-Oriented Programming, Data Structures I and II, Design and Analysis Computer Algorithms	Aug. 2024 – Present
Drake University <ul style="list-style-type: none">Introduction to Physics I and II, Modern Physics, Introduction to Methods in Physics, Error Theory, Descript Astronomy, Astronomical TechniquesCalculus I-IV, Linear Algebra, Ordinary and Partial Differential Equations, Math Reasoning (Discrete Math), Numerical Analysis	Aug. 2022 – May 2024

PUBLICATIONS AND PRESENTATIONS

Parmerlee, T.C., Rose, S.C., González Prieto, E., Lombardi, J.C., Gibson, C., O’Conner, C.E., Kiroğlu, F., Kremer, K., and Rasio, F.A., “Using Machine Learning to Model Stellar Collisions in the Galactic Center”, in prep, 2026

González Prieto, E., Lombardi, J.C., Rose, S.C., Gibson, C., O’Conner, C.E., Starkenburg, T., Kiroğlu, F., Kremer, K., **Parmerlee, T.C.**, and Rasio, F.A., “Machine Learning Methods for Stellar Collisions”, in prep, 2026

S. Chen, M. Holcomb, E. Jackovin, X. Kwa, J. Kilburg, A. Lobo, J. Messerli-Wallace, E. Miller, S. Mortenson, **T. Parmerlee**, G. Summers, M. Tentis, K. Weber, M. Viscarra; T. Kutnink (Mentor), M. Lutrell (Mentor), A. Petridis (Mentor), “MISSFIT: Artificial Gravity Generation through High-Frequency Oscillations”, APS Poster Presentation & ISGC Undergraduate Research Symposium Presentation, 2024

AWARDS, FELLOWSHIPS, AND HONORS SOCIETIES

Alpha Sigma Nu Honor Society Induction	Loyola University Chicago, 2025
Rataj Mathematics Scholarship	Loyola University Chicago, 2025-2026
Loyola University Chicago Mulcahy Fellowship (Declined)	Loyola University Chicago, 2025-2026
Sigma Pi Sigma (Physics Honor Society)	Loyola University Chicago, 2025
Father Gerst Memorial Award	Loyola University Chicago, 2024-2025
Putnam Competition Rank of 2566 out of 3857	MAA Putnam Competition, 2023
ISGC Undergraduate STEM Research Scholarship	Iowa Space Grant Consortium, 2023-2024
Drake Physics Prize Runner-Up Scholarship	Drake University, 2022-2024

OUTREACH, LEADERSHIP, AND TEACHING EXPERIENCE

LUC Mathematics Supplemental Instructor <i>Loyola University Chicago</i> <ul style="list-style-type: none">• Worked as a supplemental instructor for Applied Calculus I.• Created lesson plans and held 3-50 minute sessions per week.• Attended all class sessions.	Jan. 2026 – May 2026
LUC Physics Club President <i>Loyola University Chicago</i> <ul style="list-style-type: none">• President of LUC Physics Club for the 2025-2026 school year.• Organized events for members of the LUC Physics Department.	Aug. 2025 – Present
LUC Physics Department Homework Grading <i>Loyola University Chicago</i> <ul style="list-style-type: none">• Worked as a student grader for Electricity and Magnetism.• Graded all student homework assignments under supervision of course instructor.	Aug. 2025 – Present
Physics Department Office Assistant <i>Loyola University Chicago</i> <ul style="list-style-type: none">• Worked as a office assistant within the physics department building.• Helped maintain faculty resources.• Handled delivery of mail to faculty members.	Aug. 2025 – Present
Physics Department Mentorship Program <i>Loyola University Chicago</i> <ul style="list-style-type: none">• Participated as a underclassman mentor through the physics department.• Met throughout the semester with my mentee to give advice based on my experiences.	Aug. 2025 – Present
LUC Mathematics Peer Tutor <i>Loyola University Chicago</i> <ul style="list-style-type: none">• Worked as a math tutor for the LUC Tutoring Center.• Assisted students with math courses, including calculus, linear algebra, discrete math, and ordinary differential equations.	Aug. 2025 – Dec. 2025
Physics Club Tutor <i>Loyola University Chicago</i> <ul style="list-style-type: none">• Volunteered as a physics tutor for 100-level courses through Physics Club.• Assisted with organization of tutoring for 2025-2026 school year.	Aug. 2024 – Present
Drake University Mathematics Tutor <i>Drake University</i> <ul style="list-style-type: none">• Paid math tutor for the Drake University Math Department.• Completed a preparatory semester-long course before becoming eligible to tutor.• Assisted students in calculus and linear algebra courses.	Jan. 2024 – May 2024
Drake Municipal Observatory Volunteer <i>Drake University</i> <ul style="list-style-type: none">• Volunteer at the Drake Municipal Observatory for weekly public nights.• Set up telescopes for public viewings and provided informational speeches to general public about night sky objects.	Aug. 2022 – May 2024

TECHNICAL SKILLS

Languages: Python, Java, C/C++, C#, Fortran, LaTeX, Unix, Red Hat Linux, PyTorch, Scikit-Learn
Developer Tools: Git, VS Code, PyCharm, IntelliJ, SLURM
Engineering Tools: Fusion360, UltimakerCura, PrusaSlicer, LTSpice

EXTRACURRICULAR ACTIVITIES

Loyolacappella <i>Loyola University Chicago</i> <ul style="list-style-type: none">• Member of Loyola University Chicago's Premier All-Voice Acappella group.• Served as Treasurer for the 2025-2026 school year.• Hosted multiple on-campus performances for students.	Aug. 2024 – Present
Loyola University Choral <i>Loyola University Chicago</i> <ul style="list-style-type: none">• Member of Loyola University's All-Voice Choir.• Served as section leader for Tenor II's.• Performed at multiple on campus concerts for students.	Aug. 2024 – Present
Brocal Chords <i>Drake University</i> <ul style="list-style-type: none">• Member of Drake University's Premier Low-Voice Acappella group.• Performed at multiple events both on and off campus.	Aug. 2023 – May 2024
Drake Choir & Community Choir <i>Drake University</i> <ul style="list-style-type: none">• Member of Drake Choir and Drake University Community Choir• Performed at multiple concerts both on and off campus.	Aug. 2022 – May 2024