Tristan Parmerlee

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Education

Loyola University Chicago — Chicago, IL
Bachelor of Science in Physics with Computer Science and Mathematics – Dean's List — *Aug. 2024 – Present*

Drake University — Des Moines, IA
Bachelor of Science in Physics, Astronomy, and Mathematics – Dean's List — *Aug. 2022 – May 2024*

Research Experience

Loyola Undergraduate Research — Aug. 2024 – Present
Loyola University Chicago — *Chicago, IL*

- Undergraduate research supervised by Dr. Tangarife, consisting of paper review of introductory cosmology and inflation
- Examining how different inflation models affect the generation of primordial black holes
- Further work supported by Mulcahy Scholarship

Loyola Undergraduate Research — Aug. 2024 – Present
Loyola University Chicago — *Chicago, IL*

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MISSFIT Student Research Lead — Jan. 2023 – July 2024
Drake University — *Des Moines, IA*

- Developed the artificial gravity project for the student-led MISSFIT 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

Relavent Course Work

Loyola University Chicago — Aug. 2024 – Present

- Freshman Projects, Electronics, Theoretical Mechanics, Electricity and Magnetism, Thermal Physics and Statistical Mechanics, Undergraduate Research
- Introduction to Probability, Introduction to Real Analysis I, Introduction to Complex Analysis, Abstract Algebra
- Introduction to Computing Tools, Introduction to Object-Oriented Programming, Data Structures I and II

Drake University — Aug. 2022 – May 2024

- Introduction to Physics I and II, Modern Physics, Introduction to Methods in Physics, Error Theory, Descript Astronomy, Astronomical Techniques
- Calculus I-IV, Linear Algebra, Ordinary and Partial Differential Equations, Math Reasoning (Discrete Math), Numerical Analysis

Projects

Freshman Projects - Piezoelectric Crystals | *LTSpice, Soldering* — Jan. 2025 – Apr. 2025

- Worked under professor supervision developing research project related to piezoelectric crystals
- Developed piezoelectric circuit to test the capabilities of the crystals, including an array of 20 piezoelectric crystals
- Presented results at end of semester freshman projects seminar
- **Might remove this section lowkey**

MISSFIT Artificial Gravity | *Fusion360, UltimakerCura, C/C++, Unix* — Jan. 2023 – July 2024

- Developed a 3-D printable proof of concept for an oscillatory artificial gravity generator for interplanetary space travel
- Developed project from conceptualization to a nearly finished design within a year
- Presented developments at national APS meeting in April 2024

Awards and Honors Societies

Loyola University Chicago Mulcahy Scholarship — 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

Technical Skills

Languages: Python, Java, C/C++, C#, Fortran, LaTeX, Linux/Unix
Developer Tools: Git, VS Code, PyCharm, IntelliJ, Slurm
Engineering Tools: Fusion360, UltimakerCura, PrusaSlicer, LTSpice