

Budget Timeline:

Start date: August 17, 2020 (Beginning of fall semester, year 1)

End date: July 31, 2022 (End of summer semester, year 2)

Project 1

Aug. 2020 - Dec. 2020 (year 1, fall semester)

- Develop and test triggered star formation simulations in Enzo for Project 1
- Run and maintain triggered star formation simulation suite on PACE at Georgia Tech.
- Begin data analysis on triggered star formation simulations.
 - Generate pipeline for efficient analysis as new simulations are completed.

Jan. 2021 - Apr. 2021 (year 1, spring semester)

- Finish data analysis.
- Create publication ready plots.
- Build a story for triggered star formation paper.
- Begin writing triggered star formation paper.

May. 2021 - July. 2021 (year 1, summer semester)

- Finish writing triggered star formation paper.
- Submit the paper to a journal by the end of the semester.
- Project 1 complete.

Project 2

Aug. 2021 - Dec. 2021 (year 2, fall semester)

- Develop and test the metal tracer particles in Enzo for Project 2.
- Generate initial conditions for the cosmology simulation.
- Revise and resubmit triggered star formation paper if necessary.
- Run and maintain cosmology simulation with metal tracer particles.
- Begin data analysis (Locate regions enriched by metals from Pop III stars)

Jan. 2022 - Apr. 2022 (year 2, spring semester)

- Continue data analysis (study where Pop II stars form and how they are enriched by Pop III metals)
- Create publication ready plots.
- Build a story for second paper.
- Begin writing second paper.

May. 2022 - July. 2022 (year 2, summer semester)

- Finish second paper.
- Submit the paper to a journal by the end of the semester.
- Organize data from both projects and make publicly available.

Budget Narrative:

This grant will cover the costs of the FI's graduate student stipend, travel expenses, and student fees for the fall, spring, and summer semesters of the two years of support from the FINESST grant. These funds will allow the FI to make a living wage, complete the projects described above, and aid in his professional development. This budget includes fees associated with attending conferences and workshops to develop the skills and professional experience necessary for him to grow and succeed as a Ph.D. student and professional scientist. In the past, the PI has budgeted \$5,000/year for travel expenses so the FI can attend conferences and workshops. We include these expenses in the FINESST budget. At conferences, the FI will present the research described in the projects above. In the budget, we also include the fee for Georgia Tech's mandatory health insurance.

Itemized Budget:

Student stipend: \$30,000/year

Tuition: \$0.00 (waived by institution)

Student fees: \$1,026 (per fall and spring semester), \$785 (per summer semester)

Health insurance: \$787/year

Travel expenses: \$5,000/year

Total yearly budget: \$38,624

Total FINESST budget (2 years): \$77,248