

Amaya ANDREWS

Developer & Designer

(Formerly Sydney Andrews)

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🎓 EDUCATION

- 2022 **M.A. in Illustration** Academy of Art University
- 2019 **M.A. in Physics and Astronomy** from Stony Brook University
- 2017 **B.Sc. in Physics with Astrophysics** from New Mexico Institute of Mining and Technology
- 2017 **B.Sc. in Mathematics** from New Mexico Institute of Mining and Technology

📋 SKILLS

Design	Adobe Photoshop, Adobe Illustrator, Adobe InDesign, Procreate, Adobe Animate, Figma
Development	HTML, CSS, JavaScript, Python, Fortran, C, Rust, Bash, R, MatLab, Go
Environments and Tools	Linux, git, Atom, vi, Windows, Mac, Microsoft Excel, LaTeX
High Performance Computing	Parallel algorithms, OpenMP, OpenACC
Computational Methods	Finite Difference, Sparse Matrix Linear Algebra, Direct and Iterative Methods

👜 PROFESSIONAL EXPERIENCE

August 2020 November 2019	Elyah Software LLC Quantum Software Engineer, TOKYO OFFICE, Tokyo, Japan <ul style="list-style-type: none">Core-algorithm and matrix library development for a web based quantum simulator back-endDeveloped front-end user manual https://www.elyah.io/documentation.Quantum algorithm research in graph coloring and unstructured search <div>LinuxgitAtomHTMLRustPythonQASMBack-End DevelopmentFront-End DevelopmentAlgorithms</div>
September 2019 September 2018	Krell Institute Computational Science Graduate Fellow, DOE, New York, USA <ul style="list-style-type: none">Conducted computational physics research on core-collapse supernovae using HPCData analysis and paper preparationGraduate coursework in Computer Science (Computer Architecture, Parallel Programming) <div>LinuxgitFortranPythonHigh Performance ComputingMatrix OperationsOpenMPOpenACC</div>
August 2018 May 2019	Stony Brook University Graduate Research Assistant, PHYSICS DEPARTMENT, New York, USA <ul style="list-style-type: none">Conducted computational physics research in core-collapse supernovaeOptimized size in nuclear reaction networks for result accuracy and computational feasibilityCode comparison between home-grown and existing nuclear reaction networks <div>FortranPythonHigh Performance ComputingMatrix OperationsOpenMPOpenACC</div>
January 2019 May 2014	Los Alamos National Laboratory Student Researcher, T-CNLS, New Mexico, USA <ul style="list-style-type: none">Code development and testing of nuclear reaction network frameworkAlteration of existing and legacy codesData analysis for paper preparation <div>FortranPythonHigh Performance ComputingMatrix OperationsMPI</div>
May 2014 May 2013	Los Alamos National Laboratory Student Researcher, C-NR, New Mexico, USA <ul style="list-style-type: none">Literature review on chemical condensation during planet formationBegan design of numerical model for applications in post detonation nuclear forensicsPrepared academic report for the division <div>MatlabLiterature ReviewRadiochemistryPlanetary Astrophysics</div>

CONFERENCES, COLLABORATION MEETINGS, AND SUMMERSCHOOLS

INTERNATIONAL HIGH PERFORMANCE COMPUTING SUMMER SCHOOL, KOBE, JAPAN

2019

 <https://ss19.iuhpcss.org/>

Attended lectures on HPC concepts and applications. Participated in hands-on learning sessions on Open ACC and Machine Learning. Presented research related to HPC to peers and mentors in a virtual poster session.

HPC Open ACC Machine Learning

AMERICAN ASTRONOMICAL SOCIETY 229TH MEETING

2017

 <https://aas.org/meetings/aas229>

Attended talks and participated in poster session for work entitled *The Nucleosynthetic Yields of Core-Collapse Supernovae*.

Poster Presentation Supernovae

NUGRID COLLABORATION MEETINGS

2015-2017

 <https://nugrid.github.io/>

Participated in the development and testing of a parallel nuclear network framework to post process spherically symmetric yields from core-collapse supernovae.

Code Testing Nucleosynthesis

PUBLICATIONS

- 2019 **Andrews, S.**, Fryer, C., Even, W., Jones, S., Pignatari, M., Heger, A. Uncertainty in Explosive Yields of Core-Collapse Supernovae and the Next Generation of Gamma-Ray Telescopes. *ApJ* 890, 35.
- 2017 Fryer, C., **Andrews, S.**, Even, W., Heger, A., Safi-Harb, S. Parameterizing the Supernova Engine and its Effects on Remnants and Basic Yields. *ApJ* 856, 63.

HONORS AND AWARDS

- 2018 United States Department of Energy **Computational Science Graduate Fellowship** (CSGF)
- 2016 Sigma Pi Sigma Physics Honor Society
- 2014 New Mexico Tech Scholar
- 2013 New Mexico Institute of Mining and Technology Honors Student (all semesters in attendance)
- 2013 Phi Theta Kappa International Honor Society and Scholarship

OUTREACH AND VOLUNTEERING

- 2019 Amateur Observers Society of New York Guest Speaker
- 2019 Stony Brook University Astronomy Open Night Speaker
- 2015 New Mexico Science Olympiad Meteorology Event Supervisor
- 2014 New Mexico State Science Fair Junior Physics and Astronomy Judge

TEACHING AND MENTORING

May 2018
August 2017

Stony Brook University | Graduate Teaching Assistant, PHYSICS AND ASTRONOMY DEPARTMENT,

- > Assisted in the instruction of PHYS 517 : Observational Techniques in Astronomy
- > Assisted students in astronomy lab with use of telescope, CCD, etc. and graded lab reports.
- > Assisted in the instruction of AST 203 : Astronomy
- > Lead recitation sessions, proctored exams, graded assignments and exams, and held office hours
- > Created course material such as python tutorials

Python Teaching Telescopes Grading

May 2017
August 2016

New Mexico Institute of Mining and Technology | Teaching Assistant, PHYSICS DEPARTMENT,

- > Assisted in the instruction of PHYS 241 & 242 Computational Mechanics I & II
- > Lectured for review sessions and proctored exams
- > Assisted students in python computational lab exercises
- > Graded assignments and lab reports

Python Teaching Grading