# S. Reece Boston
## University of North Carolina
### rboston@ad.unc.edu

## Education

**Ph.D., Physics** University of North Carolina-Chapel Hill, 2022

**M.S., Physics** University of Georgia, 2015

**B.S., Mathematics and Physics** Georgia College, 2010

## Published Work

- Alejandro H. Córsico, <u>S. Reece Boston</u>, Leandro G. Althaus, Mukremin Kilic, S. O. Kepler, María E. Camisassa and Santiago Torres, "General relativistic pulsations of ultra-massive ZZ Ceti stars," Monthly Notices of the Royal Astronomical Society, (2023).

- Boston, S. Reece, C. R. Evans and J. C. Clemens, "Relativistic Corrections in White Dwarf Asteroseismology." Astrophysical Journal, (2023).

- Boston, S. Reece, *Newtonian and Relativistic White Dwarf Asteroseismology*, Ph.D. dissertation, UNC, (2022).

- de Souza, Rafael, <u>S. Reece Boston</u>, Alain Coc, and Christian Iliadis, "Thermonuclear fusion rates for tritium+deuterium using Bayesian methods." Physical Review C, (2018).

- Boston, S. Reece, "Time Travel in Transformation Optics." Physical Review D, (2015).

## Research Codes

`GRPulse:` High-precision asteroseismology code for Newtonian, post-Newtonian, and General Relativistic stellar models. Built-in capability for several basic stellar backgrounds.

`Thrain:` Asteroseismology code for simple analytic models of white dwarf stars, using analytic equations of state for high numerical accuracy.

## Research Experience

**Scientific Software Engineer** at Oak Ridge National Laboratories, Mar 2023 - present
<u>Topic</u>: data reduction for neutron scattering in the Spallation Neutron Source

<u>Responsibilities</u>: design, create, and test code for data reduction from scattering experiments; update and maintain existing community code for new purposes; coordinate with stakeholder researchers.

**Research Assistant** at University of North Carolina - Chapel Hill, Fall 2016 - Spring 2022
<u>Research Advisor</u>: Charles R. Evans
<u>Topic</u>: The numerical calculation of pulsation frequencies for white dwarf and other stellar objects in classical and general relativistic settings. Calculations performed in C++.

# Industry Experience

**Quant Researcher** at Anchorage Digital, Oct 2022 - Present

**R&D Data Scientist** at Community, Sept 2021 - June 2022
> Responsibilities: causal inference; market archetyping; analyze big data for product insights; transforming data for data lakehouse; natural language processing.
> Technology: python [pandas, numpy, sklearn, spaCy]; github; Snowflake SQL; Docker; AWS.

# Languages

- English (native)
- C++ (advanced)
- python (intermediate)
- Spanish (spoken in home)
- R (advanced)
- SQL (advanced)

# Teaching Experience

## University of North Carolina – Chapel Hill

**Teaching Professor** Summer 2019, Summer 2020
> Course: Physics for Life Sciences (PHYS 115), lecture/studio format
> Lectured on physics. Setup online homework, wrote exams for courses, coordinated lab section, and organized student absences. Recorded many of the online lectures during COVID-19 response (Lec 7-10,14,26-27).

**Research Mentor** Summer 2020-Summer 2021
> Role: Acting mentor for REU/Senior Honor's Thesis in relativistic pulsation of neutron stars and white dwarfs (LOI: python).

**Research Mentor** Fall 2018 - Summer 2019
> Role: Mentoring NCCMS high school student in guided research project on relativistic pulsation of neutron stars. Student won Regeneron STS 2019 Scholarship.

**Teaching Assistant** Fall 2016 - Fall 2020
> Courses: Numerical Methods (LOI: python), Electronics Lab, Physics for Life Sciences

## University of Georgia

**Teaching Assistant** Fall 2010 - Spring 2015
> Courses: Physics Labs, Scale-Up Physics for Engineers

## Mount Pisgah Christian School

**STEM Teacher** Fall 2015 - Spring 2016
> Courses: AP Physics 1, High School Physics, Introductory Programming (LOI: C++)
> Coach: FIRST Robotics Competition, FIRST Lego League

# Awards and Honors

**Hamilton Award** 2021, UNC

    Monetary award given by the Physics and Astronomy department at UNC.

**NC Space Grant** 2020, UNC

    Monetary grant awarded through NASA for promising gradate student work related to NASA missions.

**Outstanding Physics TA** 2018, UNC

    Awarded for performance as teaching assistant. Included monetary award.