

# Madysen Barber

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## Education

University of North Carolina at Chapel Hill  
Chapel Hill, NC

Graduate Student  
Department of Physics and Astronomy

University of North Carolina at Chapel Hill  
Class of 2022  
Chapel Hill, NC

Astrophysics BS & Computer Science BA  
GPA: 3.855

**Dean's List, Highest Honors, Highest Distinction**

Millbrook High School, Raleigh, NC (Class of 2018)  
IB Diploma Programme Graduate

GPA: 5.281 weighted / 4.0 unweighted  
Class Rank: 10 out of 549

## Honors and Awards

Robert N. Shelton Award for Outstanding Research in Physics 2022

[Phi Beta Kappa](#) 2020-present

Sigma Xi 2020-present

[North Carolina Space Grant Undergraduate Research Scholarship](#) 2021-2022

[UNC Chancellor's Science Scholar](#) (CSS) Cohort Six 2018-present

Chancellor's Science Scholars Service Award 2022

In recognition of outstanding Teaching, Mentorship, and Outreach

Distinguished Scholar 2020-2022, Mentor for first-year students 2020-present

Summer Research Funding Award 2021

UNC Summer Undergraduate Research Funding (SURF) 2021

William W. and Ida W. Taylor Honors Mentored Research Fellowship Distinction

Selected, but declined in favor of CSS Summer Research Funding Award 2021

International Baccalaureate Programme Diploma Recipient 2018

## Presentations

Emerging Researchers in Exoplanet Science VII - August 2022

NC Space Symposium - April 2022

Invited Talk - Astronomy on Tap in the Triangle - April 2022

Honors Thesis Defense - March 2022

Invited Presenter - UNC Board of Governors Research Showcase - February 2022

AAS Winter Conference Poster Presentation - January 2022 (Canceled)

UNC CSS Annual Research Symposium - October 2021

UNC Summer Undergraduate Pipeline Presentation - July 2021

Sigma Xi Annual Meeting and Student Research Conference - November 2020

NASA Summer Intern Presentation Symposium - August 2020

## Publications

First Author:

[\*"Transit Hunt for Young and Maturing Exoplanets \(THYME\) VIII: a Pleiades-age association harboring two transiting planetary systems from Kepler"\*](#)

**Barber, Madysen G.**; Mann, Andrew W.; Bush, Jonathan L.; et al.; 2022.

In prep: *"Gaia Magnitude Errors as a Proxy for Cluster Age"*

**Barber, Madysen G.** and Mann, Andrew W.; 2023.

Co-Author:

[\*"TESS Hunt for Young and Maturing Exoplanets \(THYME\) VI: an 11 Myr giant planet transiting a very low-mass star in Lower Centaurus Crux"\*](#)

Mann, Andrew W.; Wood, Mackenna L.; Schmidt, Stephen P.; **Barber, Madysen G.**; et al.; 2021.

[\*"TESS Hunt for Young and Maturing Exoplanets \(THYME\). IX. A 27 Myr Extended Population of Lower Centaurus Crux with a Transiting Two-planet System"\*](#)

Wood, Mackenna L.; Mann, Andrew W.; **Barber, Madysen G.**; et al.; 2023.

## Outreach Efforts

NC Science Expo 2019, 2022

CSS Recruitment Committee (2018 - present), Peer Mentor (2020 - 2022), and Volunteer Committee (2021 - 2022)

Visibility in Physics 2019-2022 - Student organization supporting marginalized groups studying physics

Females Excelling More in Mathematics, Engineering, and Science (FEMMES) Volunteer 2019

## Articles

Bieltz, Brandon. "#GDTBATH: Madyson Barber." The University of North Carolina at Chapel Hill, July 19, 2021.

<https://www.unc.edu/discover/gdtbath-madyson-barber/>.

"Discovering the Answers." University of North Carolina at Chapel Hill | The Campaign for Carolina, October 2021.

<https://campaign.unc.edu/story/discovering-the-answers/>.

## Activities

UNC Glee Club Choir 2019-2022

PackHacks 2021 - Hackathon hosted by NCSU. My team created a computer app that suggested when the user should work on their assignments based on their scheduled events for the day and how much homework they had.

Carolina Women in STEM 2019

Pearl Hacks 2019, 2022 - All female and non-binary hackathon hosted by UNC. My team created an app for helping to break language barriers between doctors and patients in emergency situations (2019).

National Honor Society 2017-2018

## Experiences

University of North Carolina Chancellor's Science Scholars, Chapel Hill, North Carolina

**Instructor and Residential Program Assistant**, June 2022-July 2022

*Developed and taught a weekly 90-minute introductory computer science workshop to incoming first-years during their Summer EXCEerator program. Mitigated interpersonal conflicts, led conversations surrounding imposter syndrome and mindfulness, and prepared the students for their future academic work.*

University of North Carolina Department of Physics and Astronomy, Chapel Hill, North Carolina

**Undergraduate Research Assistant**, January 2020-May 2022; **Postbac Researcher**, June 2022-August 2022

*Work with Dr. Andrew Mann's astrophysics lab to write automated queries and planet searches. Currently working on identifying and characterizing young exoplanets. **Experience observing with SOAR***

University of North Carolina Department of Computer Science, Chapel Hill, North Carolina

**Undergraduate Teaching Assistant**, August 2019-May 2022

*Work with students in the introductory Computer Science class for majors and non-majors (~600 students per semester). Assist during office hours answering conceptual questions and helping with homework. Mentor for first-year TAs.*

NASA Goddard Space Flight Center Exoplanet and Stellar Astrophysics Lab, Greenbelt, Maryland

**Summer Intern**, June 2020-August 2020

*Worked with Dr. Joshua Schlieder analyzing and vetting new exoplanet candidates from TESS full-frame imaging utilizing a Monte-Carlo-based modeling approach.*

L'SPACE Mission Concepts Academy

**Science Lead** of team during virtual class provided by NASA during Fall Semester 2019

*Twelve-week virtual class. Worked on a virtual team to design a Near-Earth Asteroid research mission.*

ERIRA, Green Bank Observatory, West Virginia

Educational Research in Radio Astronomy, Summer 2019

*Worked with Dr. Dan Reichart to learn about radio astronomy through hands-on research.*

Chancellor's Science Scholars Summer EXCEerator, Chapel Hill, North Carolina Summer 2018

*Summer experience for first-year Chancellor's Science Scholar students. Took classes and participated in workshops, lab tours, and inclusivity and diversity trainings.*

NCSU Engineering Camp, Raleigh, North Carolina

Assistant Camp Counselor/Materials Manager, June 2016-August 2016

*Helped campers with activities, made sure all materials were ready for each activity, walked students to and from locations, & helped with carpool*