

# ANGELO S. TARZONA

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## PROFILE

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First-year Ph.D. Student at Georgia Institute of Technology focusing on analyzing archival and modern airborne penetrating radar data at Ross Ice Shelf, Antarctica.

## EDUCATION

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**Bachelor of Science** in Earth Sciences concentrating in Environmental Geosciences May 2021  
*Dickinson College, Carlisle, PA*  
GPA: 3.49/4.00

Relevant Coursework: Environmental and Global Geophysics, Arctic Studies, Structural Geology, Surface Processes, Earth Materials, Field Geology, Sedimentology and Stratigraphy, Geographic Information Systems, and MATLAB

## AWARDS & HONORS

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*Georgia Institute of Technology*  
College of Sciences Dean's Fellowship Fall 2021- Present  
*Dickinson College*  
Samuel G. Rose '58 Scholarship 2017-2021  
The John Robert Paul Brock Scholarship 2017-2021  
The Raven's Claw Scholarship 2020-2021  
The Atlantic Richfield Foundation 1982 Research Award Fall 2020  
Honor Roll 2019-2020  
Pennsylvania Council of Professional Geologists Student Poster Session Award Spring 2020  
Booker T. Washington High School Class of 1971 Scholarship Fall 2017

## RESEARCH EXPERIENCE

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**Graduate Research Assistant**, Georgia Institute of Technology Summer 2021-Present  
*First-year Ph.D. Student*  
Analyzing archival airborne radar data from SPRI-NSF-TUD campaign in Ross Ice Shelf, Antarctica and comparing it to modern airborne radar data such as NASA's Operation IceBridge and ROSETTA to observe for multidecadal changes.

**Earth Sciences Senior Capstone Research**, Dickinson College Spring 2021  
*Undergraduate Researcher*  
Imaged lost gravesites in Mount Tabor African Methodist Church at Mt. Holly Springs, PA through a 500 MHz Ground Penetrating Radar grid survey to process a 3D image of the cemetery via GPR-SLICE.

**Stanford Earth's Undergraduate Research in Geosciences and Engineering Program (SURGE)**, Remote Experience Summer 2020  
*SURGE Undergraduate Researcher*  
Analyzed ice shelves feature through image processing via MATLAB from archival (1966-1977) SPRI-NSF-TUD airborne radar-echo sounding campaign at East Antarctica to observe glacial activity since survey collection.

**Student Collaborative Research with Faculty**, Dickinson College Fall 2019  
*Undergraduate Researcher*  
Imaged the subsurface structure at Garner Run Subcatchment, Susquehanna Shale Hills Critical Zone Observatory through seismic refraction to understand how erosion and weathering shaped the surface to support life.

**Arctic and Alpine Climate Research and Experience**, Dickinson College Summer 2019  
*Undergraduate Researcher*  
Evaluated glacial water quality in Grise Fiord, Nunavut, Canada through pH, salinity, and dissolved oxygen in glacial streams via Yellow Spring Instrument to assess how glacial water quality changes away from the source.

**Alliance for Aquatic Resource and Monitoring (ALLARM), Dickinson College**

*Summer Watershed Coordinator*

Summer 2019

Implemented lab protocols for ALLARM's Stream Team water quality sample testing and organized ALLARM's volunteer monitoring sites through Geographic Information System (GIS) by USGS' nomenclature for tributaries.

**GeoPATHS Field Camp, Pennsylvania State University**

*Summer Research Intern/Seismic Refraction Field Mentor*

Summer 2019

Introduced seventeen (17) field camp participants about near-surface seismic refraction tomography data collection and processing at Garner Run Subcatchment at the Susquehanna Shale Hills Critical Zone, PA.

**Visualizing Critical Zone through MATLAB, Independent Study, Dickinson College**

*Undergraduate Researcher*

Spring 2019

An independent study for visualizing geophysical data from critical zone observatories (CZOs) through MATLAB and literature review to learn more about Earth's processes in CZOs.

**Student Collaborative Research with Faculty, Dickinson College**

*Undergraduate Researcher*

Fall 2018

Processed seismic refraction data collected from GeoPATHS Field Camp 2018 to render a tomography of the subsurface structure at Garner Run Subcatchment of the Susquehanna Shale Hills Critical Zone Observatory.

**GeoPATHS Field Camp, Pennsylvania State University**

*Summer Research Intern*

Summer 2018

Collected data via Ground Penetrating Radar, Seismic Refraction, and Electrical Resistivity to explore the Garner Run Subcatchment subsurface structure of the Susquehanna Shale Hills Critical Zone Observatory.

**CONFERENCE ABSTRACTS**

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**Tarzona A.,** Castelo A., Del Vecchio J., Cambeiro J., Donaldson Y., Murray H., Hayes J., Mount J. G., Keating K., Brantley L. S., Forsythe B., Nyquist J., (2020). Imaging the structure of solifluction lobes in the Garner Run Subcatchment of the Susquehanna Shale Hills Critical Zone Observatory using 2D Seismic Refraction Tomography, Pennsylvania Council of Professional Geologists (PCPG) Annual Meeting, Harrisburg, PA, February 25, 2020.

**Tarzona A.,** Castelo A., Del Vecchio J., Cambeiro J., Donaldson Y., Murray H., Hayes J., Mount J. G., Keating K., Brantley L. S., Forsythe B., Nyquist J., (2019). Imaging the structure of solifluction lobes in the Garner Run Subcatchment of the Susquehanna Shale Hills Critical Zone Observatory using 2D Seismic Refraction Tomography, AGU, American Geophysical Union, San Francisco, December 9-13,2019, abstract #NS21C-0834.

Rodriguez A., Cambeiro J., **Tarzona A.,** Murray H., Donaldson Y., Del Vecchio J., Hayes L. J., Mount J. G., Keating K., Brantley L. S., Nyquist J., DiBiase A. R., (2019). The Use of Electrical Resistivity Tomography (ERT) to Image Solifluction Lobes in the Garner Run Subcatchment of The Susquehanna Shale Hills Critical Zone Observatory, AGU, American Geophysical Union, San Francisco, CA, December 9-13,2019, abstract #NS21C-0835.

Cambeiro J., Silverhart P., Donaldson Y., **Tarzona A.,** Murray H., Keating K., Mount J.G., Hayes L. J., Brantley L. S., DiBiase A. R., Nyquist J., (2019). The use of ERI and Seismic refraction to constrain soil depth and geologic structure at Cole Farms Agricultural Site in the Susquehanna Shale Hills Critical Zone Observatory, AGU, American Geophysical Union, San Francisco, CA, December 9-13,2019, abstract #NS21C-0836.

Cambeiro J., **Tarzona A.,** Donaldson Y., Pope G., O'Neill P., Hayes L. J., Mount J. G., Keating K., Brantley L. S., Nyquist J., (2018). Imaging the critical zone structure using seismic refraction in Garner Run at the Susquehanna Shale Hills Critical Zone Observatory, 34<sup>th</sup> Annual Science Student Research Symposium, Dickinson College, Carlisle, PA, April 24, 2018.

Cambeiro J., **Tarzona A.,** Donaldson Y., Pope G., O'Neill P., Hayes L. J., Mount J. G., Keating K., Brantley L. S., Nyquist J., (2018). Imaging the critical zone structure using seismic refraction in Garner Run at the Susquehanna Shale Hills Critical Zone Observatory, AGU, American Geophysical Union, Washington DC, December 10-14, 2018, abstract #NS41B-0818

## EMPLOYMENT

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**Graduate Teaching Assistant**, Georgia Institute of Technology

*EAS 1601: Habitable Planets, Teaching Assistant*

Fall 2021

Independently managing a remote lab version of Habitable Planets where I am responsible for helping students understand concepts from lectures and lab activities.

**Alliance for Aquatic Resource Monitoring (ALLARM)**, Dickinson College

*Watershed Coordinator*

2018-2021

Analyzed different streams throughout Central Pennsylvania using chemical and biological water quality monitoring techniques, subaquatic vegetation assessment, and rendering site maps in ArcGIS for volunteer monitors.

**The Dickinson College Fund's Phonathon**, Dickinson College

*Telephone Service Representative*

2017-2018

Engaged with Dickinson alumni and parent community to ask for generous gifts to the Dickinson Fund to support scholarships, athletic programs, and student research at Dickinson College.

## SKILLS

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**Operating Systems:** Windows

**Programming Languages:** Python (Basic), MATLAB

**Processing Geophysical Data:** Geogiga Seismic Refraction Tomography, Res2Dinv for Seismic Refraction Tomography, Ground Penetrating Radar (GPR), and Electrical Resistivity Tomography, ResiPy for Electrical Resistivity Tomography, GPRPy, GPR-SLICE

**Geospatial:** ArcGIS Packages, QGIS (Basic), Google Earth Pro

**Graphics:** Adobe Photoshop, Adobe Illustrator, Microsoft Office 365

**Formal Languages:** Tagalog/Filipino, English, Spanish (Basic)

## REFERENCES

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Dr. Winnie Chu, Assistant Professor of Earth and Atmospheric Sciences, Georgia Institute of Technology, 311 Ferst Drive, Atlanta, Georgia 30332-0340, email: [wchu38@gatech.edu](mailto:wchu38@gatech.edu)

Dr. Jordan L. Hayes, Assistant Professor of Earth Sciences, Dickinson College PO Box 1773, Carlisle, PA 17013, email: [hayesjo@dickinson.edu](mailto:hayesjo@dickinson.edu)

Dr. Benjamin Edwards, Professor of Earth Sciences, Moraine Chair in Arctic Studies (2020), Dickinson College, Dickinson College PO Box 1773, Carlisle, PA 17013, email: [edwardsb@dickinson.edu](mailto:edwardsb@dickinson.edu)

Dr. Kristina Keating, Assistant Professor of Earth and Environmental Sciences, Rutgers University School of Arts and Sciences-Newark, 101 Warren Street, Smith Hall Room 139, Newark, New Jersey, 07102, email: [kmkeat@newark.rutgers.edu](mailto:kmkeat@newark.rutgers.edu)