Dominic P. **Tanzillo**

First-Year Medical Student · Duke University, School of Medicine

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Education

Duke University, School of Medicine — *Durham, NC*

Doctor of Medicine First-Year Student — *Aug 2022 - Present*

Duke University, Trinity College of Arts and Sciences — *Durham, NC*

Double Major in Mathematics (B.S.) and Neuroscience (B.S.) with a Minor in Chemistry — *Aug 2016 - May 2021*

- Graduated **Magna Cum Laud**
- **Phi Beta Kappa - Junior Admit**

Publications

Space Medicine — *Coursera*

Course Co-Creator and Instructor — *Aug 2020 - Present*

- Co-created digital medical education course which has currently introduced **over 4,000 students** to the field of bioastronautics.
- Scripted, recorded, and directed six weeks of videos and interactive content.
- Working with the Center Center for the Advancement of Science in Space to incorporate footage from the International Space Station.

Paper: Stereotactic and Functional Neurosurgery — *San Francisco, CA*

CT and MRI Image Fusion Error: An Analysis of Co-Registration Error — *Feb 2021*

- Quantified the error in co-registration of two medical imaging formats.
- Collected data, ran statistical analysis, and verified the existence of a bias in the auto-merged function.
- Publication is available at: https://doi.org/10.1159/000511114

Work Experience

Tietronix Software, Inc. — *Houston, TX*

Software Developer and Systems Engineer — *Jun 2021 - Present*

- Work on a variety of NASA, Air Force, and hospital contracts to understand and protect human health in extreme environments.
- Creating instructions and gestures in augmented reality for autonomous deep space imaging and surgery medical procedures.
- Mapped earth and space communications as a systems engineer for NASA's **Flight Operations Directorate.**
- Modeled human physiology and response to high energy stimuli for the US Armed Forces' Tri-Service Research Laboratory.
- Developed virtual reality training modules and software for astronaut, surgeon, and first responder medical education.

NASA Undergraduate Space Research Association - USRA — *Johnson Space Center - Houston, TX*

Spacecraft Software - Research Associate — *Jan 2020 - Aug 2020*

- Developed machine learning models for Pilot Training Next Software for quantifying cognitive states of Air Force Pilots.
- Tested and integrated commercial off-the-shelf biometric devices for measuring pilot physiology.

Recent Research Experience

NASA Neutral Buoyancy Lab — *Houston, TX*

Hyperbarics Researcher — *Jun 2021 - Present*

- Shadowed hyperbaric physicians and critical care anesthesiologists.
- Investigated cause of decompression illness in otherwise healthy pilots undergoing hypobaric conditions.
- Paper currently under internal NASA review, slated for late 2022 publication.

University of California San Francisco School of Medicine: Neurosurgery — *San Francisco, CA*

Undergraduate Researcher with Dr. Larson — *May 2017 - June 2018*

- Shadowed neurosurgeries at the San Francisco Office of Veterans Affair and attended UCSF Neurosurgery Grand Rounds.
- Conducted and published a research project quantifying the error rate of a software used in Deep Brain Surgery.

Non-Profit Work

Students for the Exploration and Development of Space (SEDS) — *SEDS USA*

Chapter Expansion Manager — *Nov 2021 - Present*

- Oversee the onboarding and development of new US-based chapters, with emphases on high school and HBCU recruitment.
- Started and chair fortnightly access meetings to ensure all students can find their voices in space.
- Working with Bethesda Games to fund new diversity initiatives within SEDS.

Interests

- Hyper- and hypobaric medicine and the development of artificial atmospheres.
- Hyperbaric oxygen therapies.
- Interventional radiology and its application to deep space surgeries.
- Human space flight adaptations, especially related to vascular changes.