# John "J.D." Squire

(210) 649-7458 | jdsq2018@gmail.com | jsquire4@illinois.edu | https://john-squire.github.io

*I am a fourth-year medical student with a passion for engineering and medicine. By harnessing the power of the technology of today and of the future, I believe we can improve the quality of life for everyone around the globe.*

## Education

**Doctor of Medicine** — **May 2026**
Carle Illinois College of Medicine, University of Illinois at Urbana-Champaign, Urbana, IL

**Bachelor of Science in Biomedical Engineering, *summa cum laude*** — **May 2022**
The University of Texas at Dallas, Richardson, TX

## Research Experience

**Graduate Researcher** — **Dec 2022 – present**
*Magnetic Resonance Functional Imaging Laboratory, University of Illinois at Urbana-Champaign*
- Developed machine learning methods to extract information about the brain in magnetic resonance elastography data

**Graduate Researcher** — **Dec 2022 – Dec 2024**
*Mobility and Fall Prevention Research Laboratory, University of Illinois at Urbana-Champaign*
- Characterized cognitive and motor function in gait with the goal of developing objective and standardized diagnostic measures of motor impairment and treatment

**Undergraduate Researcher** — **Aug 2021 – Jun 2022**
*Molecular Imaging and Optical Nanotherapeutics Laboratory, University of Texas at Dallas*
- Characterized various nanoscale drugs for head and neck cancers under light-activated, x-ray activated, and γ-ray activated conditions

**Premier College Intern** — **May – Aug 2021**
*Air Force Research Laboratory, Wright-Patterson Air Force Base*
- Worked in the 711$^{th}$ Human Performance Wing in the Bioanalytics focusing on toxicology research
- Utilized HTML, CSS, JS, PHP, Python, GUI development, and machine learning

**Undergraduate Researcher** — **Jan – May 2021**
*Molecular Radiation Biology Research Laboratory, University of Texas Southwestern Medical Center*
- A research partnership between UT Dallas and UT Southwestern under the 2021 Green Fellowship
- Acquired imaging data in 3D tumor models for head and neck cancer as well as imaged and modeled time-dependent distribution of x-ray responsive nanoparticles in response to varying doses of radiation therapy
- Investigated the use of light-activatable nanotechnology as a facilitator for radiation therapy in radiation-resistant tumors of the head and neck

**Undergraduate Researcher** — **Jan – Dec 2020**
*Systems for Augmenting Human Mechanics Laboratory, University of Texas at Dallas*
- Learned about neural network architecture and building a neural network to identify diseases related to the hip joint

**Undergraduate Researcher** — **Jun 2018 – Jun 2019**
*Speech Disorders and Technology Laboratory, University of Texas at Dallas*
- Clark Summer Research Program participant
- Developed MATLAB programs that connected speech data witch machine learning model

## Honors and Awards

**Air Force Health Professions Scholarship Program** — **May 2022 – present**
- Four-year scholarship to cover medical school tuition and fees
- Currently serving in the Air Force Reserve as a 2nd Lieutenant

**Carle Illinois College of Medicine Scholarship** — **May 2022 – present**
- Four-year scholarship covering $7,000 of educational expenses each year

**Academic Excellence Scholarship** — **May 2018 – May 2022**
- Four-year scholarship to cover undergraduate tuition and fees at the University of Texas at Dallas

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## Publications

Finneran M, Squire J, Gordhan A, Nardone E. Dural arteriovenous fistula mimicking a stroke: A misdiagnosis of two months. *Radiology Case Reports*. 2024;19(12):5995-5999. doi:10.1016/j.radcr.2024.09.043

Squire JD, Anderson AT, Johnson CL, Sutton BP. ANTs, BET, or…neither? An exploration of brain masking and machine learning tools applied to magnetic resonance elastography. In: *2024 46th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*. ; 2024:1-4. doi:10.1109/EMBC53108.2024.10781675

N Shah, J Squire, M Guirguis, D Saha, K Hoyt, KK-H Wang, V Agarwal, G Obaid. "Deep-Tissue Activation of Photonanomedicines: An Update and Clinical Perspectives." *Cancers*. 2022; 14(8):2004. doi:10.3390/cancers14082004

## Presentations

"The Intra-Fallopian Device: The novel reversible form of contraception without the regret of surgical sterilization," 2nd Place Pitch Competition, Cozad New Venture Challenge. Champaign, IL, April 2025.

"MREureka!: Efficiently and Effectively Segmenting Brain Elastographs with nnU-Net," Finalist Presentation, Global Consortium of Innovation and Engineering in Medicine. Urbana, IL, April 2025.

"Arthritis to Meningitis: A rare case of rheumatoid meningitis," Global Consortium of Innovation and Engineering in Medicine. Urbana, IL, April 2025.

"A student-faculty partnership to support preparation for USMLE Step 1," Medical Education Experience Conference. Champaign, IL, January 2025.

"Radiologic Confirmation of Chilaiditi Syndrome in an Adult Female," Southern Radiological Conference. Point Clear, AL, January 2025.

"ANTs, BET, or…neither? An exploration of brain masking and machine learning tools applied to magnetic resonance elastography," 2024 Annual International Conference of the IEEE Engineering in Medicine and Biology Society. Orlando, FL, July 2024.

"A Teaching Electronic Medical Records System for Preclinical Students towards Clinical Simulation Evaluation," Medical Education Experience (MEdX) Conference. Champaign, IL, January 2024.

"Tumestent: A vascular solution for erectile dysfunction," 1st Place Presentation, Carle Illinois College of Medicine. Urbana, IL, October 2023.

"Becoming a Military Clinician," Carle Illinois College of Medicine. Champaign, IL, July 2023.

"Made in China 2025: A Health Perspective," Officer Training School. Maxwell AFB, AL, June 2023.

"Bonobo.care: Altruism Redefined," Cozad New Venture Challenge. Champaign, IL, April 2023.

## Skills and Proficiencies

- Clinical skills in primary care
- Research skills in cell culture, nanoparticle synthesis, and machine learning
- Programming skills in Java, Python, HTML, CSS, PHP, JavaScript, MATLAB, Arduino, and Microsoft PowerApps
- Engineering skills in SolidWorks CAD and 3D printing
- Video editing skill in VEGAS Pro 15

## Professional Service

**Clinical Curriculum Subcommittee Member** — **Sept 2023 – present**
*Carle Illinois College of Medicine, University of Illinois at Urbana-Champaign*

- Serving as voting member to bring a student perspective of the clinical curriculum and improve it for future classes

**Electives Subcommittee Member** — **Sept 2023 – present**
*Carle Illinois College of Medicine, University of Illinois at Urbana-Champaign*

- Serving as voting member to make decisions on proposed permanent and student created classroom, clinical, or research electives

**Marketing Chair, CIMED Student Government** — **Dec 2023 – Dec 2024**
*Carle Illinois College of Medicine, University of Illinois at Urbana-Champaign*

- Served as a member of the voting body and the main point of contact for marketing affairs

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**Radiology Interest Group Member** **Jun 2022 – present**

*Carle Illinois College of Medicine, University of Illinois at Urbana-Champaign*

- Engaged in meetings revolving around the practice of radiology

## Professional Memberships

- American College of Radiology (ACR)
- Association of Military Surgeons of the United States (AMSUS), The Society of Federal Health Professionals
- International Society for Magnetic Resonance in Medicine (ISMRM)
- IEEE Engineering in Medicine and Biology Society (IEEE EMBS)
- Illinois State Medical Society (ISMS)
- Society of American Military Engineers (SAME)
- National Society of Professional Engineers (NSPE)