

John "J.D." Squire

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

Education

Doctor of Medicine Carle Illinois College of Medicine, University of Illinois at Urbana-Champaign, Urbana, IL	May 2026
Bachelor of Science in Biomedical Engineering, <i>summa cum laude</i> The University of Texas at Dallas, Richardson, TX	May 2022

Research Experience

Graduate Researcher <i>Magnetic Resonance Functional Imaging Laboratory, University of Illinois at Urbana-Champaign</i> <ul style="list-style-type: none">Developed machine learning methods to extract information about the brain in magnetic resonance elastography data	Dec 2022 – present
Graduate Researcher <i>Mobility and Fall Prevention Research Laboratory, University of Illinois at Urbana-Champaign</i> <ul style="list-style-type: none">Characterized cognitive and motor function in gait with the goal of developing objective and standardized diagnostic measures of motor impairment and treatment	Dec 2022 – Dec 2024
Undergraduate Researcher <i>Molecular Imaging and Optical Nanotherapeutics Laboratory, University of Texas at Dallas</i> <ul style="list-style-type: none">Characterized various nanoscale drugs for head and neck cancers under light-activated, x-ray activated, and γ-ray activated conditions	Aug 2021 – Jun 2022
Premier College Intern <i>Air Force Research Laboratory, Wright-Patterson Air Force Base</i> <ul style="list-style-type: none">Worked in the 711th Human Performance Wing in the Bioanalytics focusing on toxicology researchUtilized HTML, CSS, JS, PHP, Python, GUI development, and machine learning	May – Aug 2021
Undergraduate Researcher <i>Molecular Radiation Biology Research Laboratory, University of Texas Southwestern Medical Center</i> <ul style="list-style-type: none">A research partnership between UT Dallas and UT Southwestern under the 2021 Green FellowshipAcquired 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 therapyInvestigated the use of light-activatable nanotechnology as a facilitator for radiation therapy in radiation-resistant tumors of the head and neck	Jan – May 2021
Undergraduate Researcher <i>Systems for Augmenting Human Mechanics Laboratory, University of Texas at Dallas</i> Learned about neural network architecture and building a neural network to identify diseases related to the hip joint	Jan – Dec 2020
Undergraduate Researcher <i>Speech Disorders and Technology Laboratory, University of Texas at Dallas</i> <ul style="list-style-type: none">Clark Summer Research Program participantDeveloped MATLAB programs that connected speech data with machine learning model	Jun 2018 – Jun 2019

Honors and Awards

Air Force Health Professions Scholarship Program <ul style="list-style-type: none">Four-year scholarship to cover medical school tuition and feesCurrently serving in the Air Force Reserve as a 2nd Lieutenant	May 2022 – present
Carle Illinois College of Medicine Scholarship <ul style="list-style-type: none">Four-year scholarship covering \$7,000 of educational expenses each year	May 2022 – present
San Antonio Pipeliners Association Scholarship <ul style="list-style-type: none">One-time scholarship covering \$4,000 of educational expenses	Jul 2019
Society of American Military Engineers Scholarship <ul style="list-style-type: none">One-time scholarship covering \$5,000 of educational expensesRecipient of the 2019 and 2020 SAME San Antonio Post ScholarshipRecipient of the 2020 SAME Fort Worth Post Scholarship	May 2019 – May 2020

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Academic Excellence Scholarship

- Four-year scholarship to cover undergraduate tuition and fees at the University of Texas at Dallas

May 2018 –

May 2022

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. <https://doi.org/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. <https://doi.org/10.1109/EMBC53108.2024.10781675>

Shah N, **Squire J**, Guirguis M, Saha D, Hoyt K, Wang KK-H, Agarwal V, Obaid G. Deep-Tissue Activation of Photodynamic Medicines: An Update and Clinical Perspectives. *Cancers*. 2022; 14(8):2004. <https://doi.org/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, University of Illinois at Urbana-Champaign. Champaign, IL. April 2025.

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

“Arthritis to Meningitis: A rare case of rheumatoid meningitis,” Global Consortium of Innovation and Engineering in Medicine, Carle Illinois College of Medicine. Urbana, IL. April 2025.

“A student-faculty partnership to support preparation for USMLE Step 1,” Medical Education Experience Conference, Carle Illinois College of Medicine. Champaign, IL. January 2025.

“Radiologic Confirmation of Chilaiiditi Syndrome in an Adult Female,” Southern Radiological Conference, Southern Radiological Society. 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, 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 Conference, Carle Illinois College of Medicine. Champaign, IL. January 2024.

“Tumestent: A vascular solution for erectile dysfunction,” 1st Place Presentation, Penile Prosthesis Innovations, 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, U.S. Air Force. Maxwell AFB, AL. June 2023.

“Bonobo.care: Altruism Redefined,” Cozad New Venture Challenge, University of Illinois at Urbana-Champaign. Champaign, IL. April 2023.

“Efficacy of Nanoformulation-Enhanced Photodynamic Therapy Excited by Radiation in Head and Neck Cancer Cells,” Green Fellowship, UT Southwestern Graduate School of Biomedical Sciences. Dallas, TX. May 2021.

“Wavcutter: A Tool for Speech Articulation Data Preprocessing,” Anson L. Clark Summer Research Program, University of Texas at Dallas. Richardson, TX. August 2018.

Skills and Proficiencies

- Basic clinical skills in family medicine, internal medicine, pediatrics, surgery, ob/gyn, neurology, and psychiatry
- 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 Activities

Treasurer/Marketing Chair, Personal Finances and Investments Interest Group

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

- Served as a founding executive board members, encouraging students to become involved in managing their own finances and how to begin building their wealth beginning from medical school

Dec 2024 –

present

Voting Member, Clinical Curriculum Subcommittee

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

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

Sept 2023 –

present

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Voting Member, Electives Subcommittee

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

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

Sept 2023 – present

President, Federal Medical Professionals Interest Group

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

- Served as a founding executive board member in creating a supportive environment for other medical students who plan to serve in federal position after medical school, like HPSP students

Sept 2023 – present

Marketing Chair, CIMED Student Government

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

Dec 2023 – Dec 2024

Member, Radiology Interest Group

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

- Engaged in meetings revolving around the practice of radiology

Jun 2022 – present

Vice President of Marketing, Texas Phi Beta Lambda/Future Business Leaders of America

Naveen Jindal School of Management, University of Texas at Dallas

- Served as an executive voting member and marketing liaison for the Texas region of PBL/FBLA chapters

Aug 2020 – May 2022

Voting Member, Victor L. Worsfold Grant Program Fund Selection Committee

Hobson Wildenthal Honors College, University of Texas at Dallas

- Selected student-led volunteer initiatives to be funded by the Worsfold Grant each semester

Aug 2018 – May 2022

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)