

GARRETT W. THRASH

M.D. Candidate (c/o 2027) • Ph.D. Student, Neuroengineering
University of Alabama at Birmingham Heersink School of Medicine
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Citizenship: United States Languages: English

EDUCATION

2027 – 2032 (exp.)	Ph.D., Neuroengineering University of Alabama at Birmingham, Birmingham, AL
2023 – 2027 (exp.)	M.D., Distinction in Health Equity UAB Heersink School of Medicine, Birmingham, AL
2020 – 2023	B.S., Chemistry, <i>magna cum laude</i> Birmingham-Southern College, Birmingham, AL

BOARD SCORES

USMLE Step 1	Pass
USMLE Step 2 CK	263

LICENSURE AND CERTIFICATION

2024 – present	Nationally Registered Emergency Medical Technician (NREMT)
2024 – present	Advanced Life Support (ALS)
2024	FEMA IS-100.c, IS-230.e, IS-700.b Emergency Management
2023 – present	Basic Life Support (BLS)

HONORS AND AWARDS

2026 – present	Alpha Omega Alpha (AOA) Honor Medical Society
2025 – present	Gold Humanism Honor Society (GHHS)
2024 – present	Health Equity Scholar, UAB Heersink School of Medicine
2023 – present	Comer Memorial Scholarship, UAB Heersink School of Medicine
2023	Clyde Stanton Outstanding Senior in Chemistry Award, Birmingham-Southern College
2022 – present	Mortar Board Honor Society
2022 – 2023	American Chemical Society
2022 – 2023	Alpha Epsilon Delta Honor Society
2022 – 2023	Kappa Mu Epsilon Honor Society
2022 – 2023	Alpha Lambda Delta Honor Society
2020 – 2023	Birmingham-Southern Presidential Scholarship
2020 – 2023	Birmingham-Southern Football SAA Honor Roll
2020 – 2023	ALFA Insurance Scholarship

2020 – 2023 Shirley Dalton Memorial Medical Scholarship

PROFESSIONAL MEMBERSHIPS AND SOCIETIES

2026 – present	Student Member, Alabama Academy of Neurology
2025 – present	Society of NeuroInterventional Surgery
2023 – present	Medical Student Committee, Congress of Neurological Surgeons
2023 – present	Student Member, American Association of Neurological Surgeons
2023 – present	Student Member, North American Neuromodulation Society
2020 – present	Sigma Alpha Epsilon Fraternity

MAJOR RESEARCH INTERESTS

Deep brain stimulation, neuromodulation, and brain–computer interfaces; neuroengineering and neuroprosthetics; global and equitable access to neurological care.

RESEARCH EXPERIENCE

2026 – present	Walker Research Lab, UAB Neurology Dr. Harrison Walker – Machine-learning decoding of subthalamic nucleus recordings for adaptive deep brain stimulation and brain–computer interfaces; planned dissertation laboratory for the Neuroengineering Ph.D.
2024 – present	Global Neurosurgery Research Group, Mission:Brain Foundation Coordinator – Coordinate roughly 35 international medical graduates, mainly from low- and middle-income countries, in a multi-project research group advancing equitable access to neurological care. – Lead members across many time zones and backgrounds toward shared goals; sharpen scientific writing, study design, and critical review across the group.
2023 – present	Holland Clinical Research Lab, UAB Neurosurgery Dr. Marshall Holland – Joined as a first-year medical student on a single systematic review; grew into co-leading lab meetings and mentoring younger medical students and undergraduates. – Chart review, data collection, study design, manuscript writing and review; managed submission and revision for multiple manuscripts and IRB protocols. – Designed independent studies and authored original IRB protocols.

2022 – 2023

Immunology Research, UAB

Dr. Chander Raman

- Investigated ultraviolet B–induced immune suppression in murine models and cell lines, including vitamin D3 effects on samples from multiple sclerosis and lupus patients.
- Cell culture, flow cytometry, and confocal microscopy; cryosectioning and staining of lymph node, spleen, and skin tissue.
- Oversaw breeding, treatment administration, and upkeep of multiple transgenic mouse lines.
- High-dimensional flow cytometry analysis in FlowJo (tSNE, UMAP, TriMap).

2021 – 2022

Enzyme Kinetics Research, Birmingham-Southern College

Dr. Kate Hayden

- Expressed novel enzymes from vector-transfected plasmids; purified target proteins by SDS-PAGE, centrifugal size exclusion, and His-tag affinity chromatography.
- Kinetic assays on novel enzymes (tvGAPDH, cdGAPDH, cpPK); Michaelis–Menten and Lineweaver–Burk modelling of K_m and V_{max} for medicinal-chemistry collaborators.

PEER-REVIEWED PUBLICATIONS

Bold indicates the CV owner. Listed newest first.

- [1] Toussaint F, dos Santos Rubio EJ, Agwu C, Yazdanian F, **Thrash GW**, Ahmed AA, Graça CR, Johnson WD. A Scoping Review of Non-Governmental Organizations in Global Neurosurgery: Contributions, Gaps, and Future Directions. *Acta Neurochirurgica* (Aug. 26, 2026). doi:10.1007/s00701-026-07014-y.
- [2] Wang EL, **Thrash GW**, Razi R, Sun Y, McGregor K, Shirvalkar P, Walker HC, Earley CJ, Holland MT. Spinal Cord Stimulation Effects on Restless Legs Syndrome: A Single Center Experience. *Stereotactic and Functional Neurosurgery* (Aug. 7, 2026), 1–19. doi:10.1159/000553453. PMID: 42566390.
- [3] **Thrash GW**, Wang E, Brockington D, Rives C, Sun Y, Roberts AC, Das S, Pilitsis JG, Shirvalkar P, do Campo RV, Walker HC, Earley CJ, Holland MT. Neuromodulation for Restless Legs Syndrome: A Systematic Review and Mechanistic Considerations for Spinal Cord Stimulation. *Sleep and Breathing* 30.1 (Mar. 2026). doi:10.1007/s11325-026-03638-7. PMID: 41806217.
- [4] Feldman MJ, Hereford WJ, Gaskin R, **Thrash GW**, Hill HM, Jaffery S, Hopson B, Rocque BG, Arynchyna-Smith A, Blount JP. Fortify Alabama: Corn Masa Fortification for Spina Bifida Prevention. *Pediatrics* 157.2 (Feb. 2026). doi:10.1542/peds.2025-073306. PMID: 41570999.
- [5] Dos Santos Rubio E, Brice KS, Toussaint F, Colado-Martinez J, **Thrash GW**, Ahmed AA, Kelbert J, Johnson W. Governance and Policy in Global Neurosurgery: A Scoping Review of National and International Efforts. *Neurosurgical Review* 48.1 (Oct. 2025), 750. doi:10.1007/s10143-025-03914-2. PMID: 41171440.
- [6] Holland MT, Mekhail MN, **Thrash G**, George T, Mugan D, Paul C, Shirvalkar P, Grace W, Deer T, McGregor K, Vazquez do Campo R, Earley CJ, Walker HC. Adaptive Spinal Cord Stimulation Improves Restless Legs Syndrome: Case Report, Literature Review, and Mechanistic Hypothesis. *Sleep Medicine* 134 (July 2025), 106664. doi:10.1016/j.sleep.2025.106664. PMID: 40652630.
- [7] Kamath A, **Thrash GW**, Rocque BG, McRae EM. Psychological Functioning in Children with Hydrocephalus: A Scoping Review. *Journal of Neurosurgery: Pediatrics* 36.4 (July 2025), 404–420. doi:10.3171/2025.3.PEDS24533. PMID: 40680304.
- [8] **Thrash GW**, Evans RE, Sun Y, Roberts AC, Derryberry C, Hale AT, Das S, Boudreau H, George JA, Atchley TJ, Blount JP, Rocque BG, Johnston JM, Jones JG. Stereotactic Radiosurgery Treatment of Pediatric Arteriovenous Malformations: A PRISMA Systematic Review and Meta-Analysis. *Child's Nervous System* 41.1 (May 2025), 188. doi:10.1007/s00381-025-06835-z. PMID: 40407914.

- [9] Sun Y, Laskay NMB, **Thrash GW**, Howell S, Mooney JH, Godzik J. The Association of Area Deprivation Index and Spine Surgery Outcomes: A Systematic and Narrative Review. *Operative Neurosurgery* 29.6 (Apr. 2025), 775–784. doi:10.1227/ons.0000000000001551. PMID: 40168531.
- [10] **Thrash GW**, Wang E, Sun Y, Walker HC, Shirvalkar P, Becker BK, Holland MT. Clinical Trials in Neuromodulatory Treatment of Drug-Resistant Hypertension and the Need for Spinal Cord Stimulation Trials: A PRISMA Systematic Review. *Bioelectronic Medicine* 10.1 (Dec. 2024), 28. doi:10.1186/s42234-024-00160-7. PMID: 39617923.
- [11] **Thrash GW**, Hale AT, Feldman MJ, Saccomano BW, Barrett DJ, Malenkia PD, Das S, Tsemo GB, Blount JP, Rocque BG, Rozzelle CJ, Johnston JM, Jones JG. Pediatric Non-Galenic Pial Arteriovenous Fistula's Characteristics and Outcomes: A Systematic Review. *Child's Nervous System* 40.6 (Mar. 2024), 1721–1729. doi:10.1007/s00381-024-06352-5. PMID: 38506930.

In Press

1. Thrash GW, Evans RE, Rocque B, Blount JP, Johnston J, Rozzelle C, Jones J. Surgical versus endovascular treatment of pediatric intracranial aneurysms: a systematic review, meta-analysis, and meta-regression. *Accepted, pending publication.*
2. Thrash GW, Stacey GK, Wang E, Townsend C, Razi R, Brockington D, Holland MT. Therapeutic deep brain stimulation for restless legs syndrome: a systematic review and meta-analysis. *Neuromodulation: Technology at the Neural Interface*. Accepted, pending publication.

Submitted / Under Review

1. Thrash GW, Stacey GK, Razi R, Rives C, Massey H, Brockington D, Cho H, Boudreau H, George J, Holland MT. Diverging perceptions between program leadership and applicants on the neurosurgery arms race to research: a single-center survey. *Neurosurgical Review*.
2. Thrash GW, Stacey GK, Wang E, Massey H, Jones JG. Coronary artery disease as a predictor for resolution of nonacute subdural hematoma after middle meningeal artery embolization: a single-center study. *Interventional Neuroradiology*.
3. Thrash GW, DeMassie B, Wang E, Jones JG, MESH Consortium. Multi-pedicle versus single-pedicle embolization as a predictor of resolution in nonacute subdural hematoma after middle meningeal artery embolization: a multi-institutional retrospective cohort study. *Interventional Neuroradiology*.
4. Del Campos I, Thrash GW, ..., Still M. Early predictors of poor outcomes in traumatic brain injury in a resource-limited setting: a retrospective study from Sierra Leone. *World Neurosurgery*.
5. Azan A, Thrash GW, ..., Still M. Global suturing mission: the role of global surgical workshops for equitable access to surgical education. *Journal of Surgical Education*.
6. Coracan J, Azan A, Thrash GW, ..., Quiñones-Hinojosa A. International hackathon to build an equitable innovation landscape in global neurosurgery. *Neurosurgery*.
7. Sun Y, ..., Thrash GW, ..., Riley KO. Neighborhood socioeconomic status, insurance, and race affect presentation and outcomes following endoscopic pituitary adenoma resection. *Acta Neurochirurgica*.

In Preparation

Active manuscript pipeline; working titles, author order, and target journals subject to change.

1. Intra-arterial therapy for glioblastoma: outcome heterogeneity, a systematic review. Target: *Neuro-Oncology*. First author.
2. Coronary artery disease as a predictor of resolution after middle meningeal artery embolization (MESH multi-institutional cohort). Target: *Interventional Neuroradiology*. First author.
3. VINCERE: venous sinus stenting. Target: *Interventional Neuroradiology*. First author.
4. Electrocorticography (ECoG) in executive function: a review.
5. Otitic hydrocephalus: a case report and review. First author.

6. Caribbean neurosurgery: an umbrella review. Target: *Acta Neurochirurgica*. Co-author.
7. Latin American neurosurgery: an umbrella review. Co-author.
8. Traumatic brain injury and e-bike injuries (working title). Co-author.
9. Restless legs syndrome survey (RLS Foundation). Role and target journal to be determined.
10. Folic acid: a history of neurosurgical policy change.

EDITORIALS AND NON-PEER-REVIEWED PUBLICATIONS

Narrative essays and op-eds in preparation as a Doximity Op-Med Medical Writing Fellow (2026–2027); first pieces forthcoming.

BOOKS AND BOOK CHAPTERS

None to date.

ABSTRACTS AND POSTER PRESENTATIONS

1. **Thrash GW**, Stacey GK, Wang E, Massie H, Maleknia P, Jones JG. Coronary artery disease, illicit drug use, and age as predictors of radiographic resolution of chronic subdural hematoma after middle meningeal artery embolization: a single-center experience. Society of NeuroInterventional Surgery (SNIS) Annual Meeting, Seattle, WA, July 2026.
2. **Thrash GW**, Wang E, Essibayi MA, Jones JG. Multi-pedicle versus single-pedicle middle meningeal artery embolization for nonacute subdural hematoma. Society of NeuroInterventional Surgery (SNIS) Annual Meeting, Seattle, WA, July 2026.
3. Wang E*, **Thrash GW**, Sun Y, Holland MT. Spinal cord stimulation effects on restless legs syndrome: a single-center experience. Annual Meeting, Congress of Neurological Surgeons, Los Angeles, CA, October 2025. *Presented by first author.
4. Uppalapati SC*, **Thrash GW**, Bowers C, Holland MT. Subdural empyema and concomitant SARS-CoV-2 infection: a PRISMA systematic review. Annual Meeting, Congress of Neurological Surgeons, Los Angeles, CA, October 2025. *Presented by first author.
5. **Thrash GW**, Wang E, Roberts AC, Sun Y, Walker HC, Shirvankar P, Holland MT. SCS of RLS: a single-center retrospective survey. Neural Interfaces, Washington, D.C., June 2025.
6. **Thrash GW**, Wang E, Roberts AC, Sun Y, Walker HC, Shirvankar P, Holland MT. Neuromodulation of restless legs syndrome. Neural Interfaces, Washington, D.C., June 2025.
7. **Thrash GW**, Wang E, Sun Y, Walker HC, Shirvankar P, Becker BK, Holland MT. Neuromodulation of the autonomic nervous system: a systematic review. NeuroGateways Consortium of Neuroengineering and Brain-Computer Interfaces, Birmingham, AL, Spring 2024.

ORAL PRESENTATIONS

1. **Thrash GW**, Holland MT. Restless legs syndrome and spinal cord stimulation. UAB Neurosurgery Teaching Conference, June 2026.
2. **Thrash GW**, Boudreau H*, Stacey GK, Razi R, Rives C, Massey H, Brockington D, Cho H, George J, Holland MT. Diverging perceptions between program leadership and applicants on the neurosurgery arms race to research: a single-center survey. Galbraith Neurosurgery Research Symposium, Birmingham, AL. *Presented by second author.

3. **Thrash GW**. UAB Mission:Brain chapter pledge. Boston Declaration of Global Neurosurgery, Kennedy Center, Boston, MA, April 24, 2025.
4. **Thrash GW**, Sun Y, Del Bene V, Bentley N. Intracranial recordings toward brain mapping of executive function: a systematic review. NeuroGateways Consortium of Neuroengineering and Brain-Computer Interfaces, Birmingham, AL, Spring 2024.
5. **Thrash GW**, Mier-Aguilar C, Xu H, Raman C. UVB induction of senescent cells. Senior thesis, Birmingham-Southern College Department of Chemistry, Birmingham, AL, May 2023.

GRANTS AND FELLOWSHIPS

07/2026 – 07/2027 Doximity Op-Med Medical Writing Fellowship
 Selected through a competitive national application open to attendings, residents, and medical students for one of 40 fellowship positions. Write narrative essays and op-eds on a range of medical topics for Op-Med, Doximity's physician-facing publication.

INVITED LECTURES

July 2024 Invited Speaker, Rural Health. UAB Heersink School of Medicine Social Determinants of Health Grand Rounds.

2024 Invited Speaker, Systematic Review Methodology. Project:RISE Research Equity Lecture.

TEACHING AND MENTORING

2024 – 2025 **Multidisciplinary Research Stewardship, UAB**
 Neurosurgery Chair
 – Hosted office hours and presentations on research fundamentals for medical students; connected students interested in neurosurgery with career mentors.

2021 – 2023 **Academic Resource Center, Birmingham-Southern College**
 Chemistry Tutor
 – Tutored undergraduate peers in analytical and organic chemistry and biochemistry.

2021 **Cell and Molecular Biology, Birmingham-Southern College**
 Teaching Assistant
 – Led the cell and molecular biology laboratory sections, including all grading and organizational tasks.

Mentees: Medical Students

Mentee	Institution	Role / Focus	Dates	Outcomes
Grayson Stacey	UAB Heersink	Career guidance and research mentorship	Jan 2025 – present	
Riyaz Razi	UAB Heersink	Research mentorship, co-author on scientific writing, residency mentorship	Aug 2024 – present	2 manuscripts submitted, 1 abstract published, oral presentation at CNS 2025

Mentees: Undergraduate Students

Mentee	Institution	Role / Focus	Dates	Outcomes
Rohma Syed	UAB	Mentorship on medical careers and medical school applications	2025 – present	Medical school applications, Mission:Brain, research
Elijah Wang	UAB	Mentorship on medical careers and applications; co-author and first author on manuscripts	Sep 2023 – present	3 publications in print, 2 submitted, 3 abstracts

LEADERSHIP AND COMMITTEE SERVICE

Mission:Brain — UAB Chapter President; Regional Chair of Outreach; Coordinator and Lead Advisor, Global Neurosurgery Research Group

- Led the UAB chapter: launched Project:RISE (annual lecture on research equity for international medical graduates in low- and middle-income countries), NeuroCamp (year-long neuroscience curriculum for Birmingham middle school students), and a spina bifida prevention campaign promoting corn masa folate fortification through community education.
- Chapter honors: 1st place, 2025 Global Hackathon (rural stroke care); Top 10, 2024 Global Hackathon; North America Service and Compassion Award.
- As Outreach Chair, direct fundraising, inventory, and equipment logistics supporting Sierra Leone’s first publicly accessible neurosurgical service, in coordination with the WFNS and the Ministry of Health.
- Coordinate the roughly 35-member Global Neurosurgery Research Group; oversee a manuscript bundle mapping global neurosurgery stakeholders in line with the Boston Declaration, with additional manuscripts in preparation across the Global Stroke Outcomes Study (University of Utah), Sierra Leone, Hackathon, and Peer Mentorship committees.

Biomedical Engineering Interest Group — Chair of Events

Organized speaker events connecting medical students with UAB biomedical engineering faculty and neurotechnology research.

Pulmonary Module — Course Representative

Served as liaison between students and course faculty.

HEALTH POLICY AND ADVOCACY

Alabama House Bill 384 — Corn Masa Folic Acid Fortification

Worked with the Children’s of Alabama pediatric neurosurgery team to support passage of state legislation establishing folic acid fortification of corn masa, addressing the elevated prevalence of spina bifida in Hispanic communities.

COMMUNITY SERVICE AND VOLUNTEERING

Medical Students Ask and Advise: Smoking Cessation — Co-Director

Co-led bi-monthly smoking cessation sessions at The Foundry, a residential recovery program serving men at risk of drug-related re-offense.

Students Helping At-Risk Patients (SHARP) — Program Member

Work with a multidisciplinary team to help at-risk patients attain better access to healthcare.

Lions Free Mobile Eye Clinic — Volunteer

Performed vision screenings and intake for uninsured patients at free mobile eye clinics across rural Alabama.

Talladega Superspeedway EMS — EMT Volunteer

Provided EMS coverage as an EMT for race events at Talladega Superspeedway, delivering acute care for spectators and staff in a high-volume setting.

Health Equity Scholar — Recipient and Volunteer

Completed service-learning projects for each organ module, semester seminars, monthly social determinants of health grand rounds, and health equity research; on track for M.D. with Distinction in Health Equity.

CLINICAL ROTATIONS

MS3 Clerkships

Pediatrics	H	Ob/Gyn	HP
Psychiatry	HP	Surgery	HP
Neurology	H	Family Medicine	H
Internal Medicine	H		

MS4 Acting Internships and Electives

January 2027	Physicians as Educators
December 2026	Stroke
November 2026	Medicine
October 2026	Neuropathology
September 2026	Outpatient Neurology
August 2026	Consultation Neurology
July 2026	Physician Scientist Research Elective
June 2026	Neurosurgery

WORK EXPERIENCE

2024	GBR Lawncare LLC Interim CEO – During the spring and summer of MS1 year, took over a family lawncare business during a parent’s health issues, traveling two hours between hometown and Birmingham to mow and landscape 30 yards per week while completing pre-clinical coursework.
2020 – 2023	Family First Medicine, Rainsville, AL Medical Assistant – Part-time medical assistant at a rural town’s family practice.
2020 – 2023	Birmingham-Southern College Football Fullback, Tight End, Offensive Lineman – Starting fullback for the BSC Panthers in fall 2021 and 2022; graduated in junior year to enter medical school a year early.

2014 – 2023

Hall Farms, Fyffe, AL

Supervisor

- Mechanic and supervisor over farm and warehouse production lines for one of the largest potato farms in Alabama. Began as a manual laborer at 14 and worked up to supervisor through high school, overseeing 30–40 workers in picking, washing, sorting, bagging, and stacking hundreds of tons of red and Yukon gold potatoes.
- Oversaw all machine and tractor maintenance while planting, spraying, and harvesting over 1,000 acres of potatoes, cotton, pumpkins, and watermelons, including chemical treatment of all crops.

HOBBIES AND INTERESTS

Reading classic literature, fiction, theology, and history; providing for my family through gardening, hunting, fishing, and farming; cooking, especially Southern comfort and Cajun food; powerlifting; running; DIY mechanic and housework; conservation and wildlife habitat improvement; travel; spending time with my wife and son.

REFERENCES

Available upon request.