

Zachary R. Abramson, D.M.D., M.D.

St. Jude Children's Research Hospital
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Department of Diagnostic Imaging
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1. Current Position at St. Jude Children's Hospital

Instructor, Diagnostic Imaging St. Jude Children's Research Hospital Memphis, TN 38105	7/2020 - Present
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2. Education and Training

A. Primary Education:

B.S. in Biology, University of Michigan, Ann Arbor, MI	9/2002 – 5/2005
D.M.D., Harvard School of Dental Medicine, Boston, MA	8/2005 – 5/2010
Internship/Residency, Massachusetts General Hospital, Boston, MA (Oral and Maxillofacial Surgery)	7/2010 – 5/2012
M.D., University of Tennessee, College of Medicine, Memphis, TN,	6/2012 – 5/2014
Internship, University of Tennessee Health Science Center, Memphis, TN (Internal Medicine)	7/2014 – 6/2015
Residency, Baptist Memorial Hospital, Memphis, TN, (Radiology)	7/2015 – 6/2019
Fellowship, Le Bonheur Children's Hospital, Memphis, TN, (Pediatric Radiology)	7/2019 – 6/2020

B. Additional Training:

AO Synthes Pediatric Oral and Maxillofacial Surgery Clinical Research Fellowship Boston, MA	2007 - 2008
AO Craniomaxillofacial Principles of Operative Treatment Course Boston, MA	5/2008
Introduction to Computer Programming and Web Design, Online: www.codecademy.com	8/2012 – 6/2013
Lebonheur Imaging Review Course, Lebonheur Children's Hospital, Memphis, TN,	3/2017 – 3/2018
Diagnostic Imaging Research Symposium - Imaging in Cancer Immunotherapy	3/29/2019
American Roentgen Ray Society (ARRS) Virtual Symposium Machine Learning and Artificial Intelligence in Radiology	2/5/21
International Cancer Imaging Society (ICIS): The Wizardry of Artificial Intelligence 2.0 - AI and Machine Learning in Cancer Imaging	7/22/21-7/24/21
Pediatric Oncology Imaging Post-graduate Course. Society of Pediatric Radiology Annual Meeting. Denver, CO.	4/30-5/1, 2022

3. Key Accomplishments Summary

I received my dental degree from Harvard and completed a research fellowship in Craniofacial Imaging at Massachusetts General Hospital, followed by an oral and maxillofacial surgery internship at Massachusetts General Hospital. To pursue my passion for diagnostic imaging research, I completed a medical degree from the University of Tennessee, a radiology residency at Baptist Memorial Hospital, and a pediatric radiology subspecialty fellowship at Le Bonheur Children's Hospital. I am board certified in Radiology with subspecialty certification in Pediatric Radiology. Presently, I am a physician-scientist on faculty at St. Jude Children's Research Hospital (SJCRH), where I have an outstanding opportunity to integrate my unique training and skillsets to advance the field of pediatric imaging.

As an undergraduate student at the University of Michigan, I developed skills in 3D quantitative image analysis, culminating in a publication entitled "3-D image analysis using micro-CT: technique for quantification of alveolar bone following resorption or repair." While in dental school at the Harvard School of Dental Medicine and oral surgery training at Massachusetts General Hospital, I developed an interest in computer-aided treatment planning for the correction of craniofacial deformities. I assisted in over 30 corrective surgeries for which I conducted treatment planning. Additionally, I oversaw numerous craniofacial cases as the coordinator of the weekly treatment planning conference. In conjunction with my clinical experiences, I began developing novel diagnostic imaging approaches to both identify and treat craniomaxillofacial deformities, publishing my methods in peer-reviewed journals. Presently, I utilize these skills to construct 3D models of maxillofacial structures to assist ENT and plastic surgeons during resection and reconstruction of maxillofacial tumors. I have expanded my 3D modeling capabilities to include chest and abdominal tumors prior to resection surgery. I serve as the lead investigator on several studies investigating post-processing techniques to improve the accuracy of 3D model generation, resulting in several peer-reviewed publications.

During my craniofacial surgery research fellowship, I studied the 3D morphologic features of the upper airway associated with the presence and severity of sleep apnea, quantifying changes related to surgery and treatment outcome. This work culminated in an award for outstanding research by the American Academy of Oral and Maxillofacial Surgery (AAOMS) and several peer-reviewed publications. Presently, I am leveraging my knowledge and skills to study sleep apnea in two patient populations: pediatric patients with sickle cell disease and adult survivors of pediatric Hodgkin lymphoma who received thoracic radiation. I have received support for part of this work through an NIH loan repayment grant.

Across my extensive training and early investigator career, I have consistently demonstrated an ability to conduct research while fulfilling my educational and clinical responsibilities. I have a strong track record of conceptualizing and leading research studies, and I have published 25 peer-reviewed manuscripts in reputable medical, surgical, and dental journals, 17 of which were first-author publications. I have presented my research at multiple national and international conferences and received several prestigious awards, including the Roentgen Research Award in recognition of the high quality of my research during radiology residency. My long-term goal is to develop and maintain a robust academic career that advances the field of radiology, specifically expanding the scope and clinical impact of diagnostic imaging at my institution and across the wider field.

My unique educational background and current faculty role position me to become an academic leader at the intersection of pediatric radiology and 3D visualization techniques. Throughout my career I have demonstrated the ability to blend my genuine interests and talents to be productive in clinical, research and educational arenas.

Research Platforms

Three-dimensional Modelling for Surgical Planning (Principal Investigator)

- Image optimization and workflow generation for 3D modeling and surgical planning
- Exploring the use of 3D display technology, including holography, virtual reality, and augmented reality

Transcranial Doppler (TCD)

- Investigate possible associations between sleep disorders and stroke risk as assessed by transcranial doppler imaging in pediatric patients with sickle cell disease (PI)
- Evaluating the use of TCD to assess stroke risk in pediatric patients with sickle cell disease

Imaging of Obstructive Sleep Apnea

- Children with sickle cell disease (Principal Investigator)
 - Via the Sickle Cell Clinical Research and Intervention Program (SCCRIP), identify and characterize the spectrum of sleep disorders in patients with sickle cell disease.
 - Develop a dynamic airway MR technique to assess functional and anatomic causes of airway collapse in patients with obstructive sleep apnea.

4. Professional Career

Oral and Maxillofacial Surgery Intern

6/2010 – 6/2011

Massachusetts General Hospital Boston, MA	
Internal Medicine Intern University of Tennessee Health Science Center Memphis, TN	7/2014 – 6/2015
Radiology Resident Baptist Memorial Hospital Memphis, TN	7/2015 – 6/2019
Pediatric Radiology Fellow Le Bonheur Children's Hospital Memphis, TN	7/2019 – 6/2020
Instructor Department of Diagnostic Imaging St. Jude Children's Research Hospital Memphis, TN	7/2020 – present

5. Certifications and Licensure

A. Board Certifications	
American Board of Radiology Certificate of additional qualification in Pediatric Radiology	April 5, 2021 Sept 23, 2022
B. Other Certifications	
Basic Life Support Tennessee Full Medical License	2010 – present 2020 – present

6. Professional Memberships

American Board of Radiology (ABR)	2015 – present
Children's Oncology Group (COG)	2021 – present
Society of Pediatric Radiology (SPR)	2021– present
American Roentgen Ray Society (ARRS)	2020 – present
American College of Radiology (ACR)	2021– present
Radiology Society of North America (RSNA)	2021– present

7. Honors and Awards

Phi Beta Kappa – Early induction for G.P.A in the top 1% at the University of Michigan	2004
Harvard Medical School Louis Pasteur Research Award	2006
American Academy of Oral and Maxillofacial Surgery (AAOMS)	2009
Oral Abstract Scientific Presentation Award	2009
AOA Medical Honor Medical Society Inductee	2013
Arthur R. Porter Memorial Scholarship	2013
Roentgen Resident/Fellow Research Award	2018

8. Institutional and Committee Assignments

Diagnostic Imaging Protocol Review Committee (DIPRC)	2020 - present
Medical Records Utilization Review Committee	2021-present
Sickle cell research and intervention program (SCCRIP)	2020-present
SCCRIP Cardiopulmonary Working Group	2020-present
Oral/dental COG survivorship task force	2021-present
COG Diagnostic Imaging Committee	2022-present

9. Professional Administrative Services

A. Conference Participation

Solid Tumor Conference, St. Jude Children's Research Hospital	2020- present
ICU Imaging Conference, St. Jude Children's Research Hospital	2021- present
Lymphoma Conference, St. Jude Children's Research Hospital	2020- present
Thyroid Nodule Conference, St. Jude Children's Research Hospital	2020- present
Limb-sparing Conference, St. Jude Children's Research Hospital	2020- present
Combined Surgery Educational Conference, SJCRH and Vanderbilt	2021-present

B. Ad Hoc Reviewer for the Following Journals:

Journal of Oral and Maxillofacial Surgery	2011 – present
Journal of Dental Research	2011 – present
Cleft Palate Craniofacial Journal	2014 – present
Academic Radiology	2020 – present
Pediatric Radiology	2022 – present

C. Leadership Positions

Coordinator of Board Review Education Baptist Memorial Hospital, Memphis, TN	2018 – 2019
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D. Conference/Event Organization

Orthognathic Surgery Conference Coordinator, Massachusetts General Hospital	2010 – 2011
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10. Formal Education/Teaching Activities

A. Didactic Educational/Teaching Activities

Organic chemistry tutor Science Learning Center, University of Michigan, Ann Arbor, MI	2003
Mathematics tutor Mathematics Lab, University of Michigan, Ann Arbor, MI	2004, 2005
Head and neck anatomy instructor Harvard School of Dental Medicine, Boston, MA	2007
Grand Rounds Lecturer in Oral and Maxillofacial Surgery Massachusetts General Hospital, Boston, MA	2010
Creator of a radiology educational mobile web application online videos (Lieberman's Scrollable Seminars in Radiology)	2013-2018
Creator and curator of maxillofacial radiology educational online videos (YouTube: ZRADMD)	2018-present
Lecturer Board Review Series at Baptist Memorial Hospital Radiology Residency Program, Memphis, TN	2018 - 2020

B. Clinical Educational/Teaching Activities

Teaching medical students and residents rotating through the Baptist Radiology Department, Memphis, TN	2015 – 2019
Lecturer to Family Medicine Residents	2017

Baptist Radiology Department, Memphis, TN

Lecturer to Radiology Residents
UT Radiology Department, Memphis, TN 2021-present

Advanced Practice Provider (APP) Lectures
St. Jude Children's Research Hospital, Memphis, TN 2022-present

C. Mentorship

Current and prospective radiology residents 2020 – present

- Michael Brunner: resident at Baptist Memorial Hospital
- David Demaio: medical student at UTHSC

Student interns from U of M school of engineering 2021-present

- Yogita Manasa Dintakurthi (2021)
- Nancy Rose Pont Briant (2021)
- Dylan Thompson (2022)

11. Grant Awards

Coinvestigator: **Zachary Abramson** 2006
Title of Project: PDGF Gene Therapy To Promote Oral Implant Osseointegration
Marshall A. Barber Memorial Fellowship Award
Percent Effort/Person Months: 50% of research time

Coinvestigator: **Zachary Abramson** 2007, 2008
Title of Project: 3D Image Analysis of The Upper Airway
AO Synthes Pediatric Craniofacial Surgery Research Grant
Percent Effort/Person Months: 100% of research time

Principle Investigator: **Zachary Abramson** 2022
Title of Project: Sleep Disorders in Children with Sickle Cell Disease
NIH Loan Repayment Grant
Percent Effort: 50%

12. Publication Record

A. Peer Reviewed Publications

i. Original Research Articles:

Park CH, **Abramson Z**, Taba Jr M, Jin Q, Chang J, Kreider J, Goldstein S, Giannobile W. 3-D image analysis using micro-CT: technique for quantification of alveolar bone following resorption or repair. J Periodontol. 2007 Feb;78(2):273-81

Abramson Z, Susarla S, Troulis M, Kaban L: Age-Related Changes of the Upper Airway Assessed by 3-Dimensional Computed Tomography. J Craniofac Surg. 2009 Mar;20(Supp1): 657-663.

Fahey F, **Abramson Z**, Padwa B, Zimmerman R, Zurakowski D, Nissenbaum M, Kaban B, Treves T: Use of 99mTc MDP SPECT for Assessment of Mandibular Growth: Development of Normal Values. European Journal of Nuclear Medicine and Molecular Imaging. 2010 May;37(5):1002-1010.

Abramson Z, Susarla S, Tagoni J, Kaban L. Three-dimensional computed-tomographic (3-D CT) Analysis of Airway Anatomy. Journal of Oral and Maxillofacial Surgery, 2010 Feb;68(2):363-371.

Susarla SM, Thomas RJ, **Abramson ZR**, Kaban LB. Biomechanics of the upper airway: Changing concepts in the pathogenesis of obstructive sleep apnea. Int J Oral Maxillofac Surg. 2010 Dec;39(12):1149-59

Susarla S, **Abramson Z**, Dodson T, Kaban L: Cephalometric Measurement of Upper Airway Length Correlates with the Presence and Severity of Obstructive Sleep Apnea. *Journal of Oral and Maxillofacial Surgery*, 2010 Nov;68(11):2846-2855

Abramson Z, Susarla S, August M, Troulis M, Kaban L: Three-dimensional CT Analysis of Airway Anatomy in Patients with Obstructive Sleep Apnea. *Journal of Oral and Maxillofacial Surgery*, 2010 Feb;68(2):354-62.

Susarla SM, **Abramson ZR**, Dodson TB, Kaban LB. Upper airway length decreases after maxillomandibular advancement in patients with obstructive sleep apnea. *J Oral Maxillofac Surg*. 2011 Nov;69(11):2872-8

Abramson Z, Susarla SM, Lawler M, Bouchard C, Troulis M, Kaban LB. Three-dimensional computed tomographic airway analysis of patients with obstructive sleep apnea treated by maxillomandibular advancement. *J Oral Maxillofac Surg*. 2011 Mar;69(3):677-86

Abramson ZR, Susarla SM, Lawler ME, Peacock ZS, Troulis MJ, Kaban LB. Effects of Mandibular Distraction Osteogenesis on Three-Dimensional Airway Anatomy in Children. *J Oral Maxillofac Surg*. 2013 Jan;71(1):90-7

Abramson ZR, Peacock ZS, Cohen HL, Choudhri AF. Radiology of Cleft Lip and Palate: Imaging for the Prenatal Period and throughout Life. *Radiographics* 2015 Nov-Dec;35(7):2053-63. Review.

Abramson ZR, Susarla SM, Lawler ME, Choudhri AF, Peacock ZS. Geometry of anterior open bite. *J Craniofac Surg*. 2015 May;26(3):e223-5

Abramson ZR, Susarla SM, Kumar AR, Choudhri AF. Computed Tomographic Analysis of the Sagittal Orbit-globe Relationship. *Ann Maxillofac Surg*. 2017 Jul-Dec;7(2):260-262

Abramson ZR, Burton C, Goode C, Sheyn A. Dual Energy CT and Virtual Low-KeV Reconstruction for 3D Visualization of Thin Bone. *Am J Roentgenology*. 2021 Sept 1. Online ahead of print.

Abramson Z, Scoggins MA, Burton C, Choudhri AF, Holladay C, Pont Briant NT, Sheyn A, Susarla S. CT-based Modeling of the Dentition for Craniomaxillofacial Surgical Planning. *J Craniofac Surg*. 2021 Dec 13. Doi: 10.1097/SCS.00000000000008402.

Abramson Z, Sheyn A, Goode C, Choudhri AF. Perimandibular "Fat Stranding" Sign: A Diagnostic Aid for Subtle Mandibular Fractures. *AJR Am J Roentgenol*. 2021 Dec 22. Doi:10.2214/AJR.21.27141. Online ahead of print.

Abramson Z, Morin C, Craig S, Helmig S. The Dot-Dash Sign of Intrathyroidal Ectopic Thymus: Implications in the Context of TI-RADS Reporting. *AJR Am J Roentgenol*. 2022 Jan 19. Doi:10.2214/AJR.21.27223. Online ahead of print.

Ruitian Song, Scott N. Hwang, Chris Goode, Diana Stoment, Matthew Scoggins, **Zachary Abramson**, Claudia M. Hillenbrand, Belinda Mandrell, Kevin Krull, and Wilburn E. Reddick. Assessment of Fat Fractions in the Tongue, Soft Palate, Pharyngeal Wall, and Parapharyngeal Fat Pad by the GOOSE and DIXON Methods Invest. *Radiology*, 2022. Accepted for publication.

Abramson Z, Kaye EC. 3D Visualization in Diagnostic Imaging: A Renaissance in Radiology. *Radiology*. Accepted for publication 11/23/22.

Abramson ZR, Nagaraj UD, Lai LM, et al. Imaging of pediatric head and neck tumors: A COG Diagnostic Imaging Committee/SPR Oncology Committee/ASPNR White Paper. *Pediatr Blood Cancer*. 2022;00 :e30151

Richard C, White S, Williams R, Zaghloul T, Helmig S, Sheyn A, **Abramson Z**, Abdelhafeez A. Indocyanine green near infrared-guided surgery in children, adolescents, and young adults with otolaryngologic malignancies. *Auris Nasus Larynx*. <https://doi.org/10.1016/j.anl.2022.11.007>

iv. Reviews and Conference Proceedings:

Ramseier CA, **Abramson ZR**, Jin Q, Giannobile WV. Gene therapeutics for periodontal regenerative medicine. *Dent Clin North Am*. 2006 Apr;50(2):245-63.

Kaye EC, **Abramson ZR**, Snaman JM, Friebert SE, Baker JN. Productivity in Pediatric Palliative Care: Measuring and Monitoring an Elusive Metric. *J Pain Symptom Manage*. 2017;53(5):952-61.

v. Editorials and Commentaries:

Abramson Z. A Sweet Embrace. In-Training. 2014 Jan 8.

Abramson Z. Would You Rather? In-Training. 2014 Jan 8.

Abramson ZR. Avoid the Phrase “No Drainable Fluid Collection” When Interpreting Examinations for Suspected Odontogenic Infection. *Am J Roentgenology*. 2021 Sept 8. Online ahead of print.

Abramson ZR, What’s in an extra dimension? The value of 3-D imaging. *Pediatr Radiol*. 2022 Jul 2. DOI: 10.1007/s00247-022-05436-1

vi. Case reports:

Ahn J, Odom SR, Saillant N, Ojeifo OA, **Abramson Z**, Gupta A, Cahalane MJ. Capillary leak syndrome and abdominal compartment syndrome from occult rectal malignancy. *Am Surg*. 2012 Nov;78(11):443-5.

Abramson ZR, Choudhri AF. Agenesis of the Corpus Callosum. *American Journal of Neuroradiology – Classic Case*. 2014 (<http://www.ajnr.org/site/imgquiz/01202014qz.xhtml>)

Abramson Z, Dayton O, Drane W, Mendenhall W, and Kaye F. Managing stage 4 ameloblastoma with dual BRAF/MEK inhibition: A case report with 8-year clinical follow-up. *Oral Oncol*. 2022 April 18. DOI: 10.1016/j.oraloncology.2022.105854. Online ahead of print.

B. Non-peer reviewed publications and reports

i. Articles:

Abramson, Z., and Hopeman, M. (2004). Sexual dimorphism in the dark-winged damselfly *Calopteryx maculata*. *University of Michigan Undergraduate Research Forum* 2: 28-30.

ii. Book Chapters:

Cooper, G., **Abramson, Z.**, Pereira, K., and Rodwell, M., (2004). Out of the comfort zone. *Engaging the Whole of Service Learning, Diversity, and Learning Communities*. pp. 75-84.

Bouchard C, **Abramson Z**, Bendahan G, Kaban LB, Troulis MJ. Distraction Osteogenesis versus Bilateral Sagittal Split Osteotomy for Mandibular Advancement. In: Troulis MJ, Kaban LB, editors. *Minimally Invasive Maxillofacial Surgery*. Shelton, CT: People’s Medical Publishing House-USA. 2013. p. 141-153.

Abramson, Z, Diaz L, J, Choudhri, AF. Imaging in Pediatric Otolaryngology. In: *Pediatric Otolaryngology*, Thompson J (ed), Cambridge University Press, London, UK, anticipated publication 2021.

13. Presentations

A. Oral Presentations

Abramson Z, Giannobile W. PDGF gene therapy to promote oral implant osseointegration. AO Biotechnology symposium. 2006. Lausanne, Switzerland.

Abramson Z, Susarla S, Troulis M, Kaban L. Three-dimensional CT Analysis of Airway Anatomy in Patients with Obstructive Sleep Apnea. AAOMS Annual Conference 2008. Seattle, Washington

Abramson Z, Susarla S, Lawler M, Bouchard C, Troulis M, Kaban L. Three-dimensional CT Analysis of Airway Anatomy in Patients with Obstructive Sleep Apnea Treated by Maxillomandibular Advancement. AAOMS Annual Conference October, 2009. Toronto, Canada.

Abramson Z, Susarla S, White C, Seldin E, Troulis M, Kaban L. Three-dimensional CT Craniomaxillofacial Landmarks for Diagnosis and Treatment Planning, Outcome Evaluation. AAOMS Annual Conference October, 2009. Toronto, Canada

Abramson Z. Three-dimensional CT Imaging of the Upper Airway in Patients with Obstructive Sleep Apnea. Oral and Maxillofacial Surgery Grand Rounds. Massachusetts General Hospital, Sept. 2010, Boston Massachusetts.

Abramson Z. Lieberman's Scrollable Seminars in Radiology. Radiology Society of North America Annual Meeting. Dec 1 2013, Chicago, IL.

Abramson Z, Didier S. Aneurysm of Persistent Trigeminal Artery. Memphis Roentgen Society Meeting. November 11, 2015, Memphis, TN.

Abramson Z. Aggressive Sclerotic Lesions of The Jaws. Noon Lecture Series. University of Tennessee Health Science Center, School of Dentistry. Nov. 2017. Memphis, TN.

Abramson Z, Didier S, Martineau D. Pulpal Necrosis Without Decay. Memphis Roentgen Society Meeting. November 11, 2018, Memphis, TN.

Abramson Z. CT-based 3D Modeling for Preoperative Planning. Society of Pediatric Radiology 2022 Annual Meeting. April 30, 2022, Denver, CO.

Abramson Z. A Year in The Life: CT-based 3D Modeling for Preoperative Planning. Diagnostic Imaging Seminar, St. Jude Children's Research Hospital. August 27, 2021

Abramson Z. CT-based 3D Modeling for Preoperative Planning. Joint Graduate Program in Biomedical Engineering Seminar. University of Memphis. March 4, 2022, Memphis, TN.

Fleming AM, Murphy AJ, Interiano RB, Loh A, McCarville ME, **Abramson Z**, Mansfield SA, Abdelhafeez AH, Davidoff AM, Gosain A, Gartrell JA, Furman WL, Langham MR. Aggressive Pursuit of No Evidence of Disease Status in Hepatoblastoma Improves Survival. American Academy of Pediatrics Section on Surgery National Conference & Exhibition, Anaheim, CA. 2022

Abramson Z. CT-based 3D Modeling for Preoperative Planning: How and Why We Did It? Introduction to Medical Imaging (BIOM 4/6901). University of Memphis. Sept 12, 2022, Memphis, TN.

Abramson Z. Introduction to Radiology. St. Jude Children's Research Hospital. Aug 30, 2022, Memphis, TN.

B. Poster/Electronic Poster Presentations

Abramson Z, Susarla S, Troulis M, Kaban L. Effects of Mandibular Distraction Osteogenesis on Airway Anatomy in Children. IADR Annual Conference; Miami, Florida. (2009, April).

Abramson Z, Cohen H, Choudhri AF. Radiology of Cleft Lip and Palate: Imaging for the Prenatal Period and throughout Life RSNA. 2014.

Song R, Hwang SN, Goode C, Stormont D, Scoggins M, **Abramson Z**, Hillenbrand CM, Mandrell B, Krull K, Reddick WE. Assessment of fat fractions of tongues, pharyngeal walls, and soft palates by GOOSE and DIXON methods. International Society for Magnetic Resonance in Medicine, 31th Scientific Meeting, London, UK, May 7-12, 2022.

Abramson Z, Olanrewaju A, Parul R, Heitzer A, Estepp J, Hankins J, Olufadi Y, Kang G, Bashir A, Akil N. The Spectrum of Sleep Disorders in Children with Sickle Cell Disease. American Society for Pediatric Hematology and Oncology Annual Conference, May 4-7, 2022, Pittsburgh, PA.

C. Mentored Trainee Presentations

Olanrewaju A, **Abramson Z**, Hankins J, Takemoto C, McCarville M, Heitzer A, Kang G, Okhomina V, Wang W. Optimizing the Frequency of Transcranial Doppler (TCD) Exams in Children with Sickle Cell Anemia. American Society of Hematology Annual Conference, Dec 10-13, 2022, New Orleans, LA.

14. Other Creative Products

Lieberman's Scrollable Seminars In Radiology

- Website develop and content creator: responsible for maintenance of the site and creation of educational radiology tutorials
- 2012-2018

Maxillofacial Radiology Educational Videos on YouTube

- Curator and content creator
- YouTube: ZRADMD
- URL: <https://www.youtube.com/channel/UCJwjRIJjXGcYIqAGdYQw4rA>

15. Language Fluency

English (native speaker)