

CURRICULUM VITAE

SAMAN HAZANY, MD

Award-winning, Harvard trained radiologist, neuroradiologist, and traumatic brain injury (TBI) imaging expert with full-time clinical appointment at the Greater Los Angeles VA Healthcare System. Academic appointments at major academic centers (UCLA and USC). Focus on Diffusion Tensor Imaging (DTI) in concussion/mild TBI. Board and Certificate of Added Qualification (CAQ) in radiology and neuroradiology. Extensive experience in care of patients with traumatic brain injury, spinal cord injury, stroke, epilepsy, and brain tumor. 15+ years experience. Extensive teaching and research leadership experience at USC (2012- present) and UCLA (2019 - present). Former Radiology department Chair and Director of Neuroradiology at Rancho Los Amigos National Rehabilitation Center (2012-2018). CEO and chief neuroradiology expert witness at Neuro Experts, PC (2018-present), contributing to clinical care and medicolegal issues of numerous patients with neurological disorders. Frequent presenter and invited lecturer in neuroradiology and traumatic brain injury.

PERSONAL INFORMATION:

2800 Neilson Way, Suite 1704
Santa Monica, CA 90405

Phone: (310)597-2626

Email: shazany@neuroexpertsgroup.com

Website: www.neuroexpertsgroup.com | www.neuroradiologyexpert.com

EDUCATION AND PROFESSIONAL APPOINTMENTS

EDUCATION

06/2002 BS, Neuroscience, University of California Los Angeles (UCLA). Los Angeles, CA
06/2006 MD, Medicine, University of California San Diego School of Medicine (UCSD). San Diego, CA

POST-GRADUATE TRAINING

2006-2007 Preliminary Internal Medicine internship, Martin Luther King Hospital. Los Angeles, CA
2007-2009 Radiology residency, Staten Island University Hospital; Staten Island, NY
2009-2011 Radiology residency, Harvard University; BIDMC; Boston, MA
2011-2012 Neuroradiology fellowship, University of Southern California (USC); Los Angeles, CA

ACADEMIC APPOINTMENTS

2012- 2016 Clinical Assistant Professor Radiology, Keck School of Medicine of USC
2016- Ongoing Clinical Associate Professor Radiology, Keck School of Medicine of USC
2018- Ongoing Clinical Associate Professor Radiology; David Geffen School of Medicine at UCLA

CLINICAL APPOINTMENTS

2012 – 2018 Director of Neuroradiology Radiology, Rancho Los Amigos National Rehabilitation Center (RLANRC), Downey, CA
2012 – Ongoing Attending Neuroradiologist(Part-time) Radiology, LA County/USC /Keck Hospital of USC, LA, CA
2015 – 2023 Staff Neuroradiologist (Part-time) Radiology, Kaiser Permanente Medical group, LA, CA
2018 – Ongoing Staff Neuroradiologist (Full-time) Radiology, Greater Los Angeles VA Healthcare System, LA, CA
2021 – Ongoing Director; Advanced MRI/fMRI Radiology, Greater Los Angeles VA Healthcare System, LA, CA

ADMINISTRATIVE APPOINTMENTS:

2014-2015 Interim Chair RLANRC Radiology Department, Downey CA
2014-2015 Chair RLANRC CME committee, Downey, CA
2013-2015 Member RLANRC IRB committee, Downey, CA
01/17- 04/18 Director RLANRC Utilization Management, Downey, CA

LICENSURE

7/01/2008 - Present A104684, CA, Active

BOARD CERTIFICATIONS

2011 American Board of Radiology, Active
2013 Neuroradiology Certification of Added Qualification, Active

HONORS, AWARDS

- 2001 Recognition of Outstanding Scholastic Achievement, Golden Key National Honor Society
- 2001 UCLA Undergraduate Research Scholarship Award
- 2003 UCSD Medical Student NIH medical research award
- 2006 Honored by Dr. John Hesselink (UCSD Department of neuroradiology)
- 2015 Whittier Foundation Neuro-Imaging Research Award
- 2018 RSNA Research Medical Student Grant in role of mentor and PI for awardee DeClouette, B
- 2023 Stevens Ultra High-Field 7 Tesla MRI Discovery Award

TEACHING

UNDERGRADUATE, GRADUATE AND MEDICAL STUDENT (OR OTHER) MENTORSHIP

2018- Ongoing	Multiple Medical Students	UCLA School Medicine	TBI imaging, DTI, CEST, Neuroanatomy
2013-Ongoing	Multiple Medical Students	USC School of Engineering and Medicine	Artificial Intelligence for Epilepsy Imaging, DTI
2011-2013	Multiple Medical Students	Harvard Medical School	General Radiology

POSTGRADUATE MENTORSHIP

2016- Ongoing	UCLA radiology residents (Group of 50 Resident)
2012- Ongoing	USC radiology residents and neuroradiology fellows (Group of 44 residents and 6 fellows per year)

PROFESSIONAL SOCIETY MEMBERSHIPS

- 2022 - Ongoing Member; International Society of Magnetic resonance in Medicine (ISMRM)
- 2020 - 2022 ISMRM Diffusion Study Group
- 2017 - Ongoing Member; American Society of Functional Neuroradiology (ASFNR)
- 2019 - 2020 Member; ASFNR Research Committee
- 2015 - Ongoing Senior Member; American Society of Neuroradiology (ASNR)
- 2021- Ongoing Member; ASNR Committee for Evidence Based Medicine
- 2019 - Ongoing Member; Harvard Club of Southern California

RESEARCH AND SCHOLARSHIP

MODERATOR AT MAJOR INTERNATIONAL MEETING

10/2018	ASFNR 2018	Moderator for the session: "Advanced Tumor Imaging"
10/2017	ASFNR 2017	Moderator for the session: "Advances in Spine Imaging"

MANUSCRIPT REVIEW

2016 - Ongoing	Cleveland Clinic Journal of Medicine
2017 - Ongoing	Journal of Clinical Neuroscience
2017 - Ongoing	Radiology of Infectious Disease

GRANT SUPPORT - CURRENT

Traumatic Brain Injury Imaging. Hazany (PI) 5/2020 - Ongoing
To explore the potential utility of large scale testing of Diffusion Tensor Imaging (DTI) and Amine chemical exchange saturation transfer echoplanar imaging (CEST EPI) (MR imaging sequences) to determine their effectiveness in identifying traumatic brain injury (TBI) in patients at the West Los Angeles VA. Sponsor: West LA VA Radiology

A multicenter, randomized, double-blind, Sham-controlled, comparative study of SI-6603 in subjects with lumbar disc herniation (phase 3). Wallbom, AS (PI) 7/2018 –ongoing
A randomized, double-blind, placebo-controlled, multicenter phase III clinical trial to evaluate the efficacy and safety of chemonucleolysis with chondriase in patients with lumbar disc herniation.
Role: Neuroradiologist; sub-investigator. Sponsor: Deikagaku Corporation (SKK)

Imaging of Ketogenic Diet in Epilepsy. Hazany/Kim (Co-PIs) 5/2017 - ongoing
To investigate potential metabolic, morphologic, and functional changes on brain MRI as result of ketogenic diet in patients with intractable epilepsy.
Role: Co-Principle investigator. Sponsor: USC Radiology

AST-OPC1-02. A Long-term Follow-up Study of Subjects with Cervical Spinal Cord Injuries, Who Received AST-OPC1 in Protocol AST-OPC1- 01. Liu (PI) 01/2018 - ongoing

To monitor long-term safety in subjects with cervical SCI who received injections of AST-OPC1 under the study protocol AST-OPC1-01 with variable including MRI.

Role: Co-investigator. Sponsor: Asterias Biotherapeutics, Inc.

PUBLICATIONS

Peer-reviewed publications

*signifies my role as primary supervisor of trainee author on this project.

Original articles

1. Hazany S, Hesselink JR, Healy JF, Imbesi SG. Utilization of Glutamate/Creatine Ratios for Proton Spectroscopic Diagnosis of Meningiomas. *Neuroradiology*. 2007 Feb; 49(2):121-7.
2. Villablanca JP, Rodriguez FJ, Stockman T, Dahliwal S, Omura M, Hazany S, Sayre J. MDCT angiography for detection and quantification of small intracranial arteries: comparison with conventional catheter angiography. *AJR Am J Roentgenol*. 2007 Feb; 188(2):593-602. doi: 10.2214/AJR.05.2143.
3. Hazany S, Pham HA, Vatakencherry G. A Case of Transection at the Strut of a Gore Tag Endograft After Endovascular Repair of a Ruptured Thoracic Aorta. *J Vasc Interv Radiol*. 2009 Feb; 20(2):271-4.
4. Elsas SM, Hazany S, Gregory WL, Mody I. Hippocampal zinc infusion delays the development of afterdischarges and seizures in a kindling model of epilepsy. *Epilepsia*. 2009 Apr; 50(4):870-9.
5. Hazany S, Khalkhali I. The Impact of Mammography in a Public University Affiliated Hospital in an Urban Community. *Breast J*. 2009 May-Jun; 15(3):318-20.
6. Isaacs D, Hazany S, Gamst A, Stark P, Mahmud E. Evaluation of the Coronary Sinus by Computed Tomography (CT) in Patients with Elevated Right Heart Pressures. *J Comput Assist Tomogr*. 2009 Jul-Aug; 33(4):513-6.
7. Colen RR, Zinn PO, Hazany S., Do-Dai D, Wu JK, Yao K, Zhu JJ. MRI Appearance and Changes on Intracavitary Gliadel Wafer Placement: A Pilot Study. *World J Radiol*. 2011 Nov 28;3(11):266-72.
8. Hazany S, Rojas R, Moonis G. Imaging features of Lipodystrophy of HIV (LDHIV) in the head and neck. *International Journal of Otolaryngology and Head & Neck Surgery*, Vol. 1 No. 2, 2012, pp. 24-27. doi: 10.4236/ijohns.2012.12005.
9. Sivasundaram L, Hazany S, Wagle N, Zada G, Chen TC, Lerner A, Go JL, D'Amore F, Law M, Shiroishi MS. Diffusion restriction in a non-enhancing metastatic brain tumor treated with bevacizumab - recurrent tumor or atypical necrosis? *Clin Imaging*. 2014 Sep-Oct;38(5):724-6.
10. Hazany S, Go JL, Law M. Magnetic resonance imaging of infectious meningitis and ventriculitis in adults. *Top Magn Reson Imaging*. 2014 Oct; 23(5):315-25.
11. Thomas MA, Hazany S, Ellingson BM, Hu P, Nguyen KL. Pathophysiology, classification, and MRI parallels in microvascular disease of the heart and brain. *Microcirculation*. 2020 Jul 8.
- *12. Hazany S, DeClouette B. Is manual drawing of region of interest to measure fractional anisotropy a reliable method of determining white matter integrity? *Medial Temporal Lobe Epilepsy Model. Neuroscience Informatics*. Volume 2, Issue 2, 2022 Jan (online publication date).
13. Yang SK, Zhang A, Hazany S, Huang J, Hathout GM. MR angiographic findings of aberrant right subclavian artery with agenesis of the left common carotid artery and anomalous origin of the vertebral arteries. *Clinical Imaging Volume 84*, April 2022, Pages 31-35
- *14. Hazany S, Mann D, Bagrodia N, Krafnick AJ, Chu R Jr, Shaw S, Clark K. Cortical change after a 2-week novel robotic rehabilitation program in children with prior hemispherectomy: pilot imaging study. *Childs Nerv Syst*. 2022 Sep 10. doi: 10.1007/s00381-022-05664-8. Epub ahead of print. PMID: 36085526.
- *15. Hazany S, Nguyen KL, Lee M, Zhang A, Mokhtar P, Crossley A, Luthra S, Butani P, Dergalust S, Ellingson B, Hinman JD. Regional Cerebral Small Vessel Disease (rCSVD) Score: A clinical MRI grading system validated in a stroke cohort. *J Clin Neurosci*. 2022 Nov;105:131-136. doi: 10.1016/j.jocn.2022.09.014. Epub 2022 Sep 29. PMID: 36183571.
- *16. Levinson S, Miller, M, Iftekhar M, JustoM, Arriola D, Wei W, **Hazany S**, Avecillas-Chasin JM, Kuhn TP, Horn A, Bari A. A structural connectivity atlas of limbic brainstem nuclei. *Front. Neuroimaging*, 12 January 2023. Sec. Brain Imaging Methods. Volume 1 - 2022 | <https://doi.org/10.3389/fnimg.2022.1009399>
- *17. **Hazany S**, Bagrodia N, Chu R Jr, Shaw S. Results of a 2-week novel robotic rehabilitation program in 18 children with prior hemispherectomy. *J Clin Neurosci*. 2023 Feb;108:6-12. doi: 10.1016/j.jocn.2022.12.011. Epub 2022 Dec 20. PMID: 36549215.

Book Chapters

1. **Hazany S**, Go J, Henderson RW, Kim P, Law M. (2016). Chapter 12: *Neuroradiology: Neoplasms and Epilepsy*. In Conti, Peter S., Kaushik, Aarti "PET-CT -- A Case-Based Approach" (pages 207-224). Springer Science + Business Media LLC New York.
2. Jacokes, Z., Bhattarai, A., Torgerson, C., Zywiec, A., Abe, S., Irimia, A., Law, M., **Hazany, S.**, and Van Horn, J.D. (2016) Chapter 12: "The Neuroimaging Challenges in Hemispherectomy Patients" in Mark J. Ashley and David A. Hovda, *Traumatic Brain Injury; Rehabilitation, treatment, and Vase Management 4th Edition*, Springer.

*3. **Hazany S**, Huang J, Haddadin Z, (2020). Chapter 15: Neuroimaging – Structural and Functional. In Blessen C. Eapen. "Brain Injury Medicine" ELSEVIER | Education, Reference, and Continuity. Maryland Heights, MO 63043

Online publications

- *1. Nwosu K, Beck A, Rolfe K, Hazany S. Calcium pyrophosphate dehydrate crystal deposition disease of the lumbar spine. American College of Radiology Case in Point; 08/11/2015. <https://3s.acr.org/CIP/>
- *2. Hogg E, Shaw S, Hazany S. Cerebral autosomal dominant arteriopathy with subcortical infarcts and leukoencephalopathy (CADASIL). American College of Radiology Case in Point; 10/04/2016. <https://3s.acr.org/CIP/>
- *3. Sue M, Mokhtar P, Huang J, Hazany S. Piriformis syndrome caused by split piriformis muscle. American Journal of Neuroradiology (AJNR) case of the week; (2019)
4. Tsui B, Hazany S, Huang J, Hathout G. Congenital absence of the right superior oblique muscle. American Journal of Neuroradiology (AJNR) classic case; (2019)
- *5. Gibbs, W; Repajic, M; Nune, G; Kim PE; Hazany, S. Febrile illness-related status epilepticus (FIREs). American Journal of Neuroradiology (AJNR) case of the week; (2020)
- *6. **Hazany S**, Mokhtar D, Su MJ, Huang, J, Hathout G. Inflammatory Cerebral Amyloid Angiopathy. American Journal of Neuroradiology (AJNR) case of the week; (2021)

Proceedings to meetings

1. Santosa AC, **Hazany S**, Levin DL, Stark P. The Significance of Anterior Diaphragmatic Lymph Nodes Observed on CT. Agnes C. Santosa MD, Saman Hazany BS, Paul Stark MD. American Roentgen Ray Society (ARRS); 05/2006
2. Isaacs D, **Hazany S**, Gamst A, Stark P, Mahmud E. Evaluation of the Coronary Sinus by Computed Tomography (CT) in Patients with Elevated Right Heart Pressures. American Roentgen Ray Society (ARRS); 05/2006.
3. **Hazany S**, Hesselink JR, Healy JF, Imbesi SG. Utilization of Glutamate/Creatine Ratios for Proton Spectroscopic Diagnosis of Meningiomas when Alanine is Absent or Masked by Lactate. Radiological Society of North America (RSNA); 11/2006.
4. Hirschorn D, **Hazany S**. Effect of Monitor Brightness Decay on DICOM Conformance. Society for Imaging 23. Gonzalez N, **Hazany S**, Zamorro J, Vinuela F. Endovascular Treatment of Intracranial Aneurysms in an Elderly Population. Report of 158 cases. Congress of Neurological Sciences (CNS); 10/2006.
5. Guelfguat M, **Hazany S**, Wrzolek M, Buchbinder S. Mixed Echogenicity Breast Masses: A Pictorial Review of Imaging Findings with Pathologic Correlation. American Roentgen Ray Society (ARRS); 03/2009. (One of top twenty viewed exhibits and invited for publication in AJR Integrative Imaging.)
6. Colen RR, **Hazany S**, Nazir K, Zinn, PO, Do-Dai D, Wu J, Zhu J. Glioblastoma Multiforme: Radiographic appearance and changes on intracavitary Gliadel Wafer Placement. American Society of Neuroradiology (ASNR), 05/2010.
7. Colen RR, **Hazany S**, Zinn PO, Rojas R. Functional MRI (fMRI) and the Neurosurgical "Golden Rule" for brain tumors: Is the "Golden Rule" relevant today? American Society of Neuroradiology (ASNR), 05/2010.
8. **Hazany S**, Rojas R, Moonis G. Imaging features of Lipodystrophy of HIV (LDHIV) in the head and neck. American Society of Neuroradiology (ASNR), 05/2010.
9. **Hazany S**, Telishack N, Colen R, Parva P, Bhadelia R, Riascos R, Rojas R. Do you know your white matter tracts? Fiber Tractography and Diffusion Tensor Color Maps of Human Brain White Matter: An Interactive Anatomic Atlas in Quiz format. ASNR 2011
10. **Hazany S**, Telishack N, Colen R, Bhadelia R, Riascos R, Rojas R. Language Processing in Bilinguals: An fMRI study. ASNR 2011.
11. Colen RR, **Hazany S**, Nazir K, Zinn PO, Do-Dai D, Wu J, Zhu J. Glioblastoma Multiforme: A Study on the Radiographic Appearance and Changes on Intracavitary Gliadel Wafer Placement. ASNR, Boston, MA May 2010.
12. **Hazany S**, Colen RR, Parva P, Bhadelia R, Riascos R, Rojas R,. Interactive 2-and 3-dimensional Anatomic Atlas of the Human Brain white matter based on fiber tractography and diffusion tensor color maps. RSNA, 2010.
13. Colen RR, **Hazany S**, Zinn PO, Jolesz FA, Rojas R. Neurosurgical "Golden Rule" for Brain Tumors In the Era of Modern Neuronavigational Stereotactic Neurosurgery and Functional MR Imaging: Relevance and Redefinition. RSNA, 2010.
14. **Hazany S**, Mehrpoo NN, Shiroishi M, Klipfel N, Bishop WD, Go JL. A case of ameloblastic carcinoma of the maxillary sinus. Review of imaging and pathology as well as brief review of the literature. American Society of Head and Neck Radiology (ASHNR), 09/2011.
15. **Hazany S**; Christian S, Rahmanuddin S, Izadi K, Cen Yong, Martinez M, Aguilera AL, Kim MJ, Shiroishi MS MD, Rajamohan A MD, Kim P MD, Law ME MD. 3-D volume intensity histogram analysis to differentiate between tumor recurrence and radiation necrosis in patients who have undergone resection and radiation therapy for metastatic brain. American Society of Neuroradiology (ASNR), 04/2012.
16. **Hazany S**, Christian S, Rahmanuddin S, Martinez M, Florence Hofman, Cen Yong; Izadi K, Ferré J-C, Shiroishi MS, Rajamohan A, Go J, Law M. Regional definition of high grade glioma by using 3D imaging volume intensity histogram analysis. American Society of Neuroradiology (ASNR), 04/2012.
17. Sivasundaram L, **Hazany S**, Wagle N, Zada G, Chen T, Pagnini P, Lerner A, Law M, Shiroishi MS. Diffusion Restriction in Non-Enhancing Metastatic Brain Tumors Treated with Bevacizumab - Recurrent Tumor or Necrosis? Western Neuroradiology Society (WNRS), 2012.
18. Kim PE, **Hazany S**, Liu C, Heck C, Millett D, Ko D, Lerner A, Rajamohan A, Shiroishi M, Go JL, Boyko O, Henderson R, Law M. Holy grails of epilepsy imaging: the "nonlesional" patient , multifocal and extratemporal epilepsy. American Society of Neuroradiology (ASNR), 05/2013.
19. **Hazany S**, Mann D, Aisen M, de Bode S, Shaw S, Clark K. Changes in Neuroimaging as Result of Robotic Rehabilitation in Patients with Hemispherectomy. American Society of Neuroradiology (ASNR), 05/2015.

20. 7 . Hwang D, Heck C, Nune G, **Hazany S**, Liu CY, Russin J, Law EM, Kim PE. 3D MR/CT Fusion for Cortical Surface Localization of Intracranial EEG Electrodes Using Synapse 3D. RSNA, 2015.
21. Mann D.S., Krafnick A., Shaw S., Chu Jr. R., Aisen M., **Hazany S.**, Clark K. A., Longitudinal Cortical Changes with Motor Rehabilitation in Hemispherectomy Patients. Presented at Organization for Human Brain Mapping Annual Meeting, 2015.
22. Shaw S, Chu R, Blydt-Hansen, E, **Hazany S**, Mann, D, Clark K, Aisen M. Intensive robot-assisted rehabilitation improves motor function in children after cerebral hemispherectomy. American Academy of Neurology (AAN) 2015.
23. Torgerson C, Bhattra A, JJ Zachary, Law M, **Hazany S**, Irimia A, Van Horn JD. Multimodal neuroimaging of brain structure alterations in adolescents with anatomic hemispherectomy. Human Brain Mapping Annual Meeting, 2016.
24. Shaw S, Chu R, Kasayama J, Blydt-Hansen E, **Hazany S**, Aisen M. Intensive robot-assisted therapy improves motor function post-cerebral hemispherectomy. World Conference for Neurorehabilitation (WCNR) 2016.
25. Torgerson CM, Bhattra A, Jacokes ZJ, Law M, **Hazany S**, Irimia A, Van Horn JD. Multimodal neuroimaging of brain structure alterations in adolescents with anatomic hemispherectomy. Organization for Human Brain Mapping (OHBM) 2016 (OHBM) 2016.
- *26. DeClouette B, **Hazany S**, Is Fractional Anisotropy of The Superior Longitudinal Fasciculus a Helpful Imaging Marker for Lateralizing the Seizure Focus? American Society of Functional Neuroradiology (ASFNR) 2017.
27. Latterman P, **Hazany S**, Rajput A, Rajamohan A, Acharya J. Dialysis related spindylo-artheropathy. Excerpta oral presentation at ASNR 06/2018.
28. Levinson S, AVECILLAS-CHASIN JM, Lee SJ, Jalal, S, Hazany S, Bari AA. Structural Connectivity of the Locus Coeruleus is Associated with Measures of Emotion. American Society for Stereotactic and Functional Neurosurgery (ASSFN) 6/2020.
29. **Hazany S**, Nguyen KL, Ellingson B, Lee M, Hinman JD. Regional Assessment of Cerebral Microvascular Disease (RACMD) Score: A Clinical MRI Grading System. American Neurological Association 10/2020 meeting.
30. Levinson S, Miller M, Iftekhar A, Justo M, Arriola D, **Hazany S**, AVECILLAS-CHASIN J, Kuhn T, Horn A, Bari A. A Structural Connectivity Atlas of Limbic Brainstem Nuclei. American Society for Stereotactic and Functional Neurosurgery (ASSFN) 2022 meeting
31. Guzman S, **Hazany S**. Spatial Transcriptomics on En Bloc Hippocampal Resections from Adult-Onset Drug Resistant Mesial Temporal Lobe Epilepsy Hippocampal Sclerosis. American Association of NeuroPathology (AANP) meeting 2023. Journal of Neuropathology and Experimental Neurology 6/2023.