Divya Chander M.D., Ph.D.

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Position

Medical Expert

Licensure & Medical Certifications

2008	American Board of Anesthesiology Diplomate (43029) – recertified through 2028
2006	California Medical License (A89863) – recertified through 2026
2004	Advanced Cardiac Life Support (ACLS), Basic Life Support (BLS) – recertified through 2026
2014	Pediatric Advanced Life Support (PALS)

Education

07/2004 – 09/2007	Residency, Department of Anesthesiology & Perioperative Care **University of California, San Francisco** – San Francisco, CA
07/2003 – 06/2004	Transitional Internship: Internal Medicine, Surgery, and Pediatrics **Banner Good Samaritan Medical Center** – Phoenix, AZ
06/2003	Doctor of Medicine **University of California San Diego School of Medicine** – La Jolla, CA
04/2003	Aerospace Medicine Clerkship **NASA Johnson Space Center/Wyle Laboratories** – Houston, TX
12/2002	Doctor of Philosophy, Neurosciences **University of California San Diego/Salk Institute** – La Jolla, CA
08/2002	Neurology Sub-internship **Massachusetts General Hospital, Harvard Medical School** – Boston, MA
09/1989 – 06/1993	Bachelor of Arts, Biology, Magna Cum Laude **Harvard University** – Cambridge, MA

Additional Training

1997 – 1998	California Space Grant Consortium Internship University of California San Diego – La Jolla, CA
06/1994 – 08/1994	Space Studies Program, Department of Space Life Sciences International Space University – Strasbourg, France

Clinical Professional Experience

04/2024 – present	Staff Anesthesiologist, Lodi Adventist Memorial Hospital
03/2024 – present	Staff Anesthesiologist, Marin Health/UCSF
01/2018 – 09/2024	Staff Anesthesiologist, Alameda Health Systems/Highland Hospital, CA
08/2016 – present	Staff Anesthesiologist, San Mateo Medical Center, CA
01/2016 – present	Medicolegal Expert, Anesthesiology (review cases for both defendants and plaintiffs)
03/2017 – 12/2018	Staff Anesthesiologist, San Jose Regional Medical Center, CA
01/2009 – 06/2017	Attending Anesthesiologist, Department of Anesthesiology, Perioperative & Pain Medicine, Stanford University School of Medicine – Stanford, CA
11/2007 – 12/2008	Staff Anesthesiologist, Kaiser Hospitals – Oakland, South San Francisco, Santa Clara, CA (per diem)

Clinical Responsibilities and Experience

I have practiced anesthesiology at **large academic medical centers** (UCSF, Stanford), **Kaiser** Hospitals (Oakland, South San Francisco, Santa Clara), **Surgery Centers/ASCs**, and **County Hospitals** (Highland Hospital, San Mateo Medical Center, Marin Health). In each of these roles, I became acclimated to differing needs.

Although I have broad experience in anesthesiology, I have specialized training in **neuroanesthesiology** and **ENT**. At Stanford School of Medicine, I taught most of the neuroanesthesiology curriculum for 5 years. I also wrote and updated the chapter titled ***"Anesthesia and Diseases of the Nervous System,"*** In the Manual of Clinical Anesthesiology, written and edited principally by Stanford Anesthesiology Faculty.

I am comfortable practicing medicine and consenting patients in **Spanish**.

I have used both **paper records** and **electronic medical records** (Epic, Cerner).

At the major medical centers and country hospitals like Highland, I have significant experience **supervising** - both **CRNAs** and **residents**. I spent a considerable portion of my time either **teaching** residents (anesthesiology, emergency medicine, oral maxillofacial surgery) or student nurse anesthetists (SRNAs). I teach not only procedures, but technical skills such as how to check out an anesthesia machine, and cognitive skills such as anesthesia relevant physiology and pharmacology. I also prepare clinical scenarios for the residents, and give multiple talks on topics such as running TIVAs or anesthetics specific to neuromonitoring. At Stanford, I was largely responsible teaching residents neuroanesthesia physiology and techniques. I also assisted with the **difficult airway course**.

At Stanford in particular, my principal clinical effort and resident curriculum development were focused on **ENT** and **neuroanesthesia/neuromonitoring**. Intraoperatively, I routinely used **EEG-based brain monitors** to maintain patients at an appropriate anesthetic depth. I also maintained a translational research program built upon the analysis of intraoperative EEG at various anesthetic depths, and in the presence of different balanced anesthetic techniques. This work translated into several **patient safety efforts**.

At Highland Hospital, a **Level I Trauma Center**, I managed **complex trauma** cases, **thoracic**, **general**, **orthopedic**, **thoracic, vascular, oral surgery/ENT, neurosurgical, gynecological**, and **oncological anesthesia**, as well as covering the **OB service**. I began using **ultrasound imaging for the placement of epidurals** in difficult patients. For orthopedic cases, I am able to perform both pre- and post-**operative ultrasound-guided nerve blocks**.

Since 2016, I have worked as a **medicolegal expert in anesthesiology**. The experience in reviewing anesthesiology cases has greatly improved my clinical practice. I am able to see the types of crises that can arise through negligence, mismanagement, inadequate preoperative workup, inadequate intraoperative preparation, or lack of awareness. Reviewing such cases for both defendant and plaintiff has considerably improved my own anesthesiology practice, attention to **patient safety,** and **patient charting/documentation**.

Non-Clinical Professional Experience

03/2024 – present	Founder/CEO Lucidify (remote brain monitoring company)
07/2018 – 07/2020	Visiting Scholar, Department of Medicine (Biomedical Informatics Division), Stanford University School of Medicine – Stanford, CA
06/2018 – present	Chair in Neuroscience, Singularity Group (https://su.org/about/faculty/divya-chander/)
07/2009 – present	Faculty in Medicine, Singularity Group (https://su.org)

Professional Development & Coursework

2018	Startup101, UCSF Entrepreneurship Center (Certificate) University of California San Francisco, San Francisco, CA
2012	Professional Development in Medical and Life Sciences: Management Fundamentals Stanford University, Stanford, CA
2011	Neuroinformatics Course (signal processing techniques in neuroscience) Marine Biological Laboratory, Woods Hole, MA
2010	Science Writing with the New York Times (Stanford Continuing Studies, Stanford, CA)
1995	Space Architecture Studio Design Course University of Southern California – Los Angeles, CA
1994	Summer Session, Space Life Sciences Group (Space Studies Certificate) International Space University – Barcelona, Spain

Leadership, Committee, Think Tank, Volunteer Work

2023 – present	XPRIZE Health, Space Brain Trusts (https://www.xprize.org/domains/health)
2021 – present	Medical Advisor, Extended Reality Safety Initiative (https://xrsi.org/)
2023 – present	Loomis Innovation Council Fellow, Stimson Center (https://www.stimson.org/)
2020 – 2023	Senior Nonresident Fellow, Atlantic Council GeoTech Center (https://www.atlanticcouncil.org/)
2020	Director Global Health Pandemic Resilience Task Force, OneShared.World
2020	NASA Telehealth Task Force Senior Advisor (Breathing Space Initiative)
2014	Stanford Student Space Initiative Advisor, microgravity hTEE flight
2011 – 2017	International Consortium for Electroencephalography Training of Anesthesia Providers Steering Committee, Society for Neuroscience in Anesthesiology & Critical Care
2011 – 2016	Arts & Anesthesia Organizing Committee, Stanford University School of Medicine
2010	Rotaplast International, Nagamangala, India. Delivery of anesthesia and perioperative care to children and adults for cleft lip/palate repairs and burn injuries

Professional Societies

Active Member	American Society of Anesthesiologists California Society of Anesthesiologists

Professional Societies, Continued

Past Member	American Medical Association Society for Neuroscience Society for Neuroscience in Anesthesiology and Critical Care International Anesthesia Research Society Association for the Scientific Study of Consciousness California Medical Association, Council on Legislative Affairs San Diego County Medical Society

Awards, Honors, Fellowships

2020	Named 2020 Top 50 Digital Health Innovators by Intelligent Health AI
2009, 2013, 2016	Semi-Finalist, Astronaut Corps, NASA Johnson Space Center
2004	Finalist, Astronaut Corps, NASA Johnson Space Center
2000 – 2001	Legler Benbough Research Fellow, Legler Benbough Foundation, Salk Institute
2000	Travel Research Award, Foundation for Fighting Blindness, Salk Institute
1999 – 2000	Chapman Graduate Research Fellow, Helena Chapman Charitable Trust, Salk Institute
1997 – 1998	McDonnell-Pew Graduate Research Fellow, McDonnell-Pew Foundation, University of California San Diego and Salk Institute
1996-1997	Teaching Excellence Award, UCSD Department of Biology
1995 – 1997	Markey Fellow in Neurosciences, Lucille P. Markey Charitable Trust and UCSD
1994	Medical Education Research Foundation Grant & Fellowship, UCSD
1994	International Space University Space Studies Scholarship – Barcelona, Spain
1993 – 2003	Medical Scientist Training Program Fellow, National Institute of Health (NIH) and UCSD
1991	Howard Hughes Medical Institute Internship in Neurosciences, New York University

Teaching Experience

2018 – present	Anesthesiology, Emergency Medicine, & OMFS Residents, SRNAs, student teaching and supervision, Department Anesthesiology, Highland Hospital, Oakland, CA
2009 – 2016	Anesthesia Resident Teaching and Supervision Department Anesthesia, Perioperative and Pain Medicine, Stanford, CA
2011-2016	Department Anesthesia Resident Lecture Series (Stanford University School of Medicine) • Anesthesia for Functional Neurosurgery • Total IV Anesthesia for Neurosurgery: Advantages and Controversies • Cranial Nerves & Autonomic Nervous System • EEG Monitoring in Anesthesia: Lessons from the Clinical Experience • Intraoperative Management of Intracranial Pressure
2009 – 2016	Medical Student Teaching and Supervision Stanford University School of Medicine – Stanford, CA
2012 – 2015	Medical Student airway workshop Stanford University School of Medicine – Stanford, CA
10/1993 – 04/1999	Biology Instructor, Columbia MCAT Review – San Diego, CA

Teaching Experience, Continued

01/1997 – 03/1997	Teaching Assistant, Mammalian Physiology II, UCSD – La Jolla, CA
03/1996 – 06/1996	Teaching Assistant, Basic Medical Neurology UCSD School of Medicine – La Jolla, CA

Entrepreneurship

2024 – present	Founder, CEO Lucidify Inc. (remote neuromonitoring platform)
2020 – 2022	Co-Founder, Plexxus Inc. (a cybersecure network/AI solution for telehealth and a global pandemic immune system)
2009 – present	Consulting Expert / Mentor / Advisory Board Member to Singularity University (SU Ventures), startups, investors in Medicine, Med Tech, Neuroscience, and Neuroleadership

IRBs

2017 – 2021	Protocol: 40895: "Identification of Genetic and Immunologic biomarkers that Characterize EEG Phenotypes Under Sleep and General Anesthesia" (co-PI: D. Chander)
2014 – 2018	Protocol: 28130: "Correlation of Electroencephalographic Signals with Brain States and Pharmacological Administration During General Anesthesia" (c0-PI: D. Chander)

Grants

2015 – 2018	Translational Research and Applied Medicine Award (TRAM), Stanford "Anesthesia and Pharmacogenomics Pilot Initiative"
2012 – 2014	James S. McDonnell Foundation Collaborative Award in Understanding Human Cognition, "Probing the overlap between sleep and anesthesia to enhance human cognition"
2009 – 2012	Foundation for Anesthesia Education and Research (FAER) Mentored Research Training Grant in Basic Science (MRTG-BS), "Probing the neural correlates of consciousness using optogenetics"

Peer-Reviewed Primary Publications & Reviews

Eagleman S*, **Chander D***, Dunn C, Ouellette N, MacIver B (2019) "Nonlinear dynamics captures brain states at different levels of consciousness," PLoS One. Oct 30;14(10):e0223921. doi: 10.1371
(*Co-first authors, contributed equally)

Panesar S, Cagle Y, **Chander D**, Morey J, Fernandez-Miranda J, Kliot M (2019). "Artificial Intelligence and the Future of Surgical Robots," Annals Surgery, 270:223–226. doi: 10.1097

Chander D*, Garcia PS*, MacColl JN, Illing S, Sleigh J (2014). "Electroencephalographic variation during end maintenance and emergence from general surgical anesthesia," PLoS One. (*Co-first authors)

Pashaie R*, Anikeeva P*, Lee JH*, Prakash R*, Yizhar O*, Prigge M*, **Chander D***, Richner TJ*, Williams J* (2014). "Optogenetic brain interfaces," IEEE Rev Biomed Eng. 7:3-30. doi: 10.1109 (*Authors contributed equally)

Chander D, Chichilnisky EJ (2001). "Adaptation to temporal contrast in primate and salamander retina," J Neurosci 21(24): 9904-9916

Maguire G, Straiker A, **Chander D**, Haamedi SN, Piomelli, D, Stella, N, Lu Q-J (1999). "Neural Circuitry and Plasticity in the Adult Vertebrate Inner Retina," IWANN (1): 65-72

BOOK CHAPTERS

Chander D (2021) "Anesthesia and Diseases of the Nervous System," In: Manual of Clinical Anesthesiology II (Chu L, Fuller A, eds.), Lippincott Williams & Wilkins, Philadelphia, PA

Chander D (2011) "Anesthesia and Diseases of the Nervous System," In: Manual of Clinical Anesthesiology (Chu L, Fuller A, eds.), Lippincott Williams & Wilkins, Philadelphia, PA

Chander D, Gelb AW (2006) "Anaesthesia for Neurosurgery," In: Evidence Based Anaesthesia and Intensive Care (Moller A, Pedersen T, eds.), pp. 282-292. Cambridge University Press

PRESENTATIONS & CONFERENCE PROCEEDINGS

Chander D*, Eagleman S, Dunn C, Ouellette N, MacIver B (2020) "Anesthesia, Consciousness and Complexity," Association for Scientific Study of Consciousness Meeting, Tucson.

Eagleman S*, **Chander D*,** Dunn C, Ouellette N, MacIver B (2019) "Nonlinear dynamics analyses of EEG signals capture brain states at different levels of consciousness," Society for Neuroscience Annual Meeting, Chicago

Chander D (2017) "Non-invasive Brain Monitoring…Is it our Reality?" XIII World Congress of Intensive and Critical Care Medicine, Rio de Janeiro, Brazil

Chander D (2016) "Anesthesia Genomics and Precision Medicine Initiative," Translational Medicine Research Symposium, Stanford University, Stanford, CA

Maher K, Reynolds C, **Chander D** (2016) "Drug Effects on the EEG under General Anesthesia," American Society of Anesthesiologists meeting, Chicago, IL

MacIver B, **Chander D** (2016) "Chaos analysis provides a more sensitive and accurate measure for loss of consciousness compared to frequency domain measures of EEG signals," International Anesthesia Research Society meeting, San Francisco, CA

MacIver B, **Chander D** (2015) "Measuring loss and recovery of consciousness – chaos analysis of frontal EEG in sleep and anesthesia," BioX Conference, Stanford, CA

MacIver B, **Chander D**, Bland B (2015) "Chaos analysis of brain transitions at loss and recovery of consciousness," Stanford Neurosciences Institute, Stanford, CA

Chander D, Golemis A, Lee P, Jewell S, Russomano T, Drudi L, Grenon M (2014) "Mars-to-Mars Analogue Telemedicine Simulation for Medical Crisis Mitigation," 65th Intl. Astronautical Congress, Toronto, Canada

Chander D (2014) "Advanced Concepts in Life Sciences: Closed-Loop Monitoring for the Future Astronaut (Brain Computer Interfaces and Integrated Bio-MEMs)," 65th Intl. Astronautical Congress, Toronto, Canada

Chander D, Komorowski M, Gaba D, Jewell S, Cagle Y, Golemis A (2014) "Tele-anesthesia Simulation for Martian Analogue Environments," Association of University Anesthesiologists Meeting (AUA), Stanford, CA

Chander D, Garcia PS, MacColl JN, Illing S, Sleigh JW (2014) "EEG Variation During Maintenance and Emergence from General Surgical Anesthesia," Association of University Anesthesiologists Meeting (AUA), Stanford, CA

Golemis A, Jewell S, Ceraolo T, Komorowski M, Russomano T, Drudi L, **Chander D** (2014) "Telesurgery Simulations in Space Analogs: Benefits for Space Exploration and Isolated Environments on Earth," European Space Agency Congress (CongreX)

Chander D, Lee-Messer C, Whitmer D, Sleigh J, Negahbani E, Beenhakker M, Huguenard J, de Lecea L, Deisseroth K (2012) "Selective Optogenetic Stimulation of the Reticular Nucleus of the Thalamus as a Tool to Investigate the Role of Spindles in Anesthesia," J Neurosurg Anesthesiol. 24(4):487

Sleigh J, **Chander D**, Sanders R, Garcia P (2012) "Variations in EEG Pattern During Emergence From General Anesthesia," J Neurosurg Anesthesiol. 24(4):482

Chander D (2002) "Temporal Contrast Adaptation in Identified Types of Retinal Ganglion Cells," Doctoral Dissertation, University of California San Diego

Chander D, Chichilnisky EJ (2000) "Contrast adaptation: regulation of visual sensitivity in parallel retinal circuits," FASEB Retinal Neurobiology and Visual Processing Conference, CO

Chander D, Chichilnisky EJ (1999) "Contrast adaptation and gain changes in salamander and monkey retina," Soc Neurosci Abstr 25:1431

Alangari A, Catone A, **Chander D**, Glebov A, Marshall M, Nolan M, Phail B, Ruilova A, Thangavelu M (1998) "Evolution of a Satellite Service Facility in Earth," In: Proceedings of the Sixth International Conference and Exposition on Engineering, Construction, and Operations in Space (Galloway RG, Lokaj S, eds.), pp 82

Chander D, Vollrath P, Gulman R, Wiskerchen M (1997) "The Near Earth Asteroid Prospector: An Innovative Alliance for Opening Space Markets & Doing Cheap Space Science," 44th Annual AAS National Conference, Pasadena, CA

Chander D (1996) "The Solar System Cruiser – Interstellar Precursor," In: Engineering, Construction & Operations in Space V (Johnson SW, ed.), pp. 302-310. New York: American Society of Civil Engineers

Chander D (1996) "Design of a Multi-generational, Interstellar ship," In: Engineering, Construction & Operations in Space V (Johnson SW, ed.), pp. 302-310. New York: American Society of Civil Engineers

Chander D (1993) "In-vivo laser photolysis in the design and implementation of a host-transplant model to delimit the primary site of action of the autosomal recessive mutation *reeler*," Undergraduate Honors Thesis, Harvard University

Interests

Dance (Latin, Modern, African, Indian classical), Yoga, Astronomy, Hiking, Photography, Travel, Writing (fiction, non-fiction)

Languages

Spanish (spoken, written; proficient in medical Spanish), Hindi (spoken – comprehension only)