



## Vafi Salmasi

Assistant Professor of Anesthesiology, Perioperative and Pain Medicine (Adult Pain)

 Curriculum Vitae available Online

### CLINICAL OFFICE (PRIMARY)

- **Pain Management Center**

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### Bio

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#### BIO

Vafi Salmasi, M.D., M.S. is an Assistant Professor in the Department of Anesthesiology, Perioperative and Pain Medicine, Division of Pain Medicine at Stanford University School of Medicine. He earned his medical degree from Tehran University of Medical Sciences in 2004 and completed his anesthesiology training at Cleveland Clinic, where he also completed a research fellowship in the Department of Outcomes Research. He subsequently joined Stanford University for fellowship training in Pain Medicine and earned a Master of Science in Clinical Research and Epidemiology from Stanford in 2019.

Dr. Salmasi's research focuses on integrating pragmatic comparative effectiveness research with clinical care in perioperative and pain medicine, supported by his NIH funding. He is an active member of the neuromodulation team at Stanford Pain Management Center, where he has established and organizes the multidisciplinary team conference for neuromodulation candidates. His clinical expertise encompasses interventional pain management with particular emphasis on neuromodulation techniques including spinal cord stimulation and peripheral nerve stimulation; and minimally invasive spine techniques including basivertebral nerve ablation and percutaneous minimally invasive lumbar decompression.

#### CLINICAL FOCUS

- Pain Management
- Neuromodulation
- Spinal Cord Stimulation
- Dorsal Root Ganglion Stimulation
- Peripheral Nerve Stimulation
- Basivertebral Nerve Ablation (Intracept)
- Minimally Invasive Spine Interventions
- Vertebrogenic Pain Syndrome
- Spinal Stenosis
- Back Pain

- Post-Laminectomy Syndrome
- CRPS
- Neuropathic Pain
- Radiculopathy
- Perioperative Pain Management

## ACADEMIC APPOINTMENTS

- Assistant Professor - University Medical Line, Anesthesiology, Perioperative and Pain Medicine

## HONORS AND AWARDS

- Recipient of the Junior Faculty Teaching Award, Stanford University Division of Pain Medicine (2021)
- Recipient of Michael J. deUngria M.D. Residency Award, Cleveland Clinic Anesthesiology Residency Program (2016)
- Second place winner in Residents' Research Essay Contest, American Society of Anesthesiologists Annual Meeting (2016)

## BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Co-Chair of Education Committee, Pacific Spine and Pain Society (2020 - present)
- Ex-officio Advisor to Board of Directors, Pacific Spine and Pain Society (2024 - present)
- Member of Board of Directors, Pacific Spine and Pain Society (2020 - 2024)
- Member of Abstract Committee, American Academy of Pain Medicine (2018 - present)
- Member of Evidence Analysis Committee, International Pain and Spine Intervention Society (2022 - present)

## PROFESSIONAL EDUCATION

- Master's Degree, Stanford University School of Medicine , Epidemiology and Clinical Research (2019)
- Board Certification: Pain Management, American Board of Anesthesiology (2017)
- Board Certification: Anesthesia, American Board of Anesthesiology (2017)
- Fellowship: Stanford University Pain Management Fellowship (2017) CA
- Residency: Cleveland Clinic Foundation (2016) OH
- Internship: Cleveland Clinic Foundation (2012) OH
- Medical Education: Tehran University of Medical Sciences (2004) Iran

## LINKS

- Stanford Pain Scientist explores new frontiers in pain research: <https://painnews.stanford.edu/news/stanford-pain-scientist-explores-new-frontiers-pain-research>
- Can TMS Therapy Reduce Chronic Pain? What the Science Says: [https://painnews.stanford.edu/news/can-tms-help-chronic-pain#:~:text=Transcranial%20Magnetic%20Stimulation%20\(TMS\)%20is,its%20potential%20for%20pain%20relief](https://painnews.stanford.edu/news/can-tms-help-chronic-pain#:~:text=Transcranial%20Magnetic%20Stimulation%20(TMS)%20is,its%20potential%20for%20pain%20relief)

## Research & Scholarship

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### RESEARCH INTERESTS

- Research Methods

### CLINICAL TRIALS

- Stanford Pragmatic Effectiveness Comparison, Recruiting
- Comparing Effectiveness of Duloxetine and Desipramine in Patients With Chronic Pain: A Pragmatic Trial Using Point of Care Randomization, Not Recruiting
- Comparing Long-term Effectiveness of High Frequency and Burst Spinal Cord Stimulation, Not Recruiting

## Teaching

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### GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Pain Management (Fellowship Program)

## Publications

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### PUBLICATIONS

- **Exclusion criteria in clinical trials of treatments for neuropathic pain: a systematic analysis** *FRONTIERS IN PAIN RESEARCH*  
Salcedo, R., Moghadam, R., Saneifard, S., Zhou, A., Salmasi, V.  
2026; 7: 1716686
- **Quality or Quantity? The Quiet Influence of Industry-Sponsored Centers of Excellence.** *Journal of pain research*  
Pritzlaff, S. G., Flower, V., Salmasi, V., Sheth, S. J., Schatman, M. E.  
2025; 18: 2375-2377
- **Robust Peritraumatic Immune System Activation Improves Pain Recovery Following Traumatic Stress Exposure**  
Lii, T., Salmasi, V., Heifets, B., Mackey, S.  
CHURCHILL LIVINGSTONE.2025
- **Opioid Use May Enhance the Analgesic and Antidepressant Response to Ketamine: Preliminary Findings from a Small Observational Study**  
Lii, T., Salmasi, V., Heifets, B., Mackey, S.  
CHURCHILL LIVINGSTONE.2025: 54
- **The effectiveness of balloon kyphoplasty compared to conservative treatment for osteoporotic vertebral compression fractures: A systematic review and meta-analysis.** *Interventional pain medicine*  
Encalada, S., Hunt, C., Duszynski, B., Salmasi, V., Scholten, P., Zhao, Z., Rappard, G., Rivers, W. E., Vu, T. N., Lobel, S., Popescu, A., Prokop, L. J., Kreiner, et al  
2025; 4 (1): 100569
- **Real-world long-term outcomes of peripheral nerve stimulation: a prospective observational study.** *Pain management*  
Luna, D., Hettie, G., Pirrotta, L., Salmasi, V., Hah, J. M.  
2025: 1-8
- **A Review of the Factors and Outcomes of Institutional Interdisciplinary Neuromodulation Committees: A Multicenter Experience.** *Neuromodulation : journal of the International Neuromodulation Society*  
Pritzlaff, S. G., Jung, M., Singh, N., Cho, J., Skoblar, M., Jagtiani, M., Prasad, R., Leong, M. S., Salmasi, V.  
2024
- **Pragmatic Comparative Effectiveness Trials and Learning Health Systems in Pain Medicine: Opportunities and Challenges.** *Anesthesiology clinics*  
Salmasi, V., Terkawi, A. S., Mackey, S. C.  
2023; 41 (2): 503-517
- **Transitional Pain Medicine; New Era, New Opportunities, and New Journey.** *Anesthesiology clinics*  
Terkawi, A. S., Ottestad, E., Altirkawi, O. K., Salmasi, V.  
2023; 41 (2): 383-394
- **Clinical Approach to Chronic Pain due to Perioperative Nerve Injury.** *Anesthesiology clinics*  
Terkawi, A. S., Altirkawi, O. K., Salmasi, V., Ottestad, E.  
2023; 41 (2): 489-502
- **Durable Chronic Low Back Pain Reductions to 24-Months Post-Treatment for An Accessible, 8-Week, In-Home Behavioral Skills-Based Virtual Reality Program: A Randomized Controlled Trial.** *Pain medicine (Malden, Mass.)*  
Maddox, T., Sparks, C., Oldstone, L., Maddox, R., Ffrench, K., Garcia, H., Krishnamurthy, P., Okhotin, D., Garcia, L. M., Birkhead, B. J., Sackman, J., Mackey, I., Louis, et al  
2023

- **Application of multidisciplinary team conference for neuromodulation candidates facilitates patient selection and optimization.** *Frontiers in pain research (Lausanne, Switzerland)*  
Salmasi, V., Rasouli, M. R., Kao, M. C., Ottestad, E., Terkawi, A. S., Morris, G., Qian, X., Coleman, S., Talavera, D. C., Poupore-King, H., Slater, K., Leong, M. S.  
2023; 4: 1331883
- **In-home virtual reality program for chronic low back pain: durability of a randomized, placebo-controlled clinical trial to 18 months post-treatment.** *Regional anesthesia and pain medicine*  
Maddox, T., Garcia, H., Ffrench, K., Maddox, R., Garcia, L., Krishnamurthy, P., Okhotin, D., Sparks, C., Oldstone, L., Birkhead, B., Sackman, J., Mackey, I., Louis, et al  
2022
- **Association of cannabis and/or opioid with quality of life and healthcare utilization in patients with chronic pain.** *Frontiers in pain research (Lausanne, Switzerland)*  
Salmasi, V., Nelson, L. M., Hong, J., Mackey, S. C.  
2022; 3: 1015605
- **A literature review of the impact of exclusion criteria on generalizability of clinical trial findings to patients with chronic pain** *PAIN REPORTS*  
Salmasi, V., Lii, T. R., Humphreys, K., Reddy, V., Mackey, S. C.  
2022; 7 (6): e1050
- **"My Surgical Success": Feasibility and Impact of a Single-Session Digital Behavioral Pain Medicine Intervention on Pain Intensity, Pain Catastrophizing, and Time to Opioid Cessation After Orthopedic Trauma Surgery-A Randomized Trial.** *Anesthesia and analgesia*  
Ziadni, M. S., You, D. S., Keane, R., Salazar, B., Jaros, S., Ram, J., Roy, A., Tanner, N., Salmasi, V., Gardner, M., Darnall, B. D.  
2022
- **Correction: Durability of the Treatment Effects of an 8-Week Self-administered Home-Based Virtual Reality Program for Chronic Low Back Pain: 6-Month Follow-up Study of a Randomized Clinical Trial.** *Journal of medical Internet research*  
Garcia, L., Birkhead, B., Krishnamurthy, P., Mackey, I., Sackman, J., Salmasi, V., Louis, R., Castro, C., Maddox, R., Maddox, T., Darnall, B. D.  
2022; 24 (6): e40038
- **Durability of the Treatment Effects of an 8-Week Self-administered Home-Based Virtual Reality Program for Chronic Low Back Pain: 6-Month Follow-up Study of a Randomized Clinical Trial (vol 24, e37480, 2022)** *JOURNAL OF MEDICAL INTERNET RESEARCH*  
Garcia, L., Birkhead, B., Krishnamurthy, P., Mackey, I., Sackman, J., Salmasi, V., Louis, R., Castro, C., Maddox, R., Maddox, T., Darnall, B. D.  
2022; 24 (6)
- **Durability of the Treatment Effects of an 8-Week Self-administered Home-Based Virtual Reality Program for Chronic Low Back Pain: Follow-up Study of a Randomized Clinical Trial.** *Journal of medical Internet research*  
Garcia, L., Birkhead, B., Krishnamurthy, P., Mackey, I., Sackman, J., Salmasi, V., Louis, R., Castro, C., Maddox, R., Maddox, T., Darnall, B. D.  
2022; 24 (5): e37480
- **Considerations in Permanent Implantation of Peripheral Nerve Stimulation (PNS) for Chronic Neuropathic Pain: An International Cross Sectional Survey of Implanters.** *Pain practice : the official journal of World Institute of Pain*  
Li, A. H., Gulati, A., Leong, M. S., Aggarwal, A. K., Salmasi, V., Spinner, D., Ottestad, E.  
2022
- **Management of Postoperative Pain in Patients Following Spine Surgery: A Narrative Review.** *International journal of general medicine*  
Prabhakar, N. K., Chadwick, A. L., Nwaneshiudu, C., Aggarwal, A., Salmasi, V., Lii, T. R., Hah, J. M.  
2022; 15: 4535-4549
- **Stanford pragmatic effectiveness comparison (SPEC) protocol: Comparing long-term effectiveness of high-frequency and burst spinal cord stimulation in real-world application.** *Contemporary clinical trials*  
Petrou, P. A., Leong, M. S., Mackey, S. C., Salmasi, V.  
2021: 106324
- **Double-blind, randomized placebo-controlled trial of 8-week self-administered at-home behavioral skills-based virtual reality (VR) for chronic low back pain (during COVID-19).** *Journal of medical Internet research*  
Darnall, B. n., Garcia, L. n., Birkhead, B. n., Krishnamurthy, P. n., Mackey, I. n., Sackman, J. n., Louis, R. n., Maddox, T. n.  
2021

- **Three-month follow-up results of a double-blind, randomized placebo-controlled trial of 8-week self-administered at-home behavioral skills-based virtual reality (VR) for chronic low back pain.** *The journal of pain*  
Garcia, L. M., Birkhead, B. J., Krishnamurthy, P., Mackey, I., Sackman, J., Salmasi, V., Louis, R., Maddox, T., Darnall, B. D.  
2021
- **Development and validation of the Collaborative Health Outcomes Information Registry body map.** *Pain reports*  
Scherrer, K. H., Ziadni, M. S., Kong, J., Sturgeon, J. A., Salmasi, V., Hong, J., Cramer, E., Chen, A. L., Pacht, T., Olson, G., Darnall, B. D., Kao, M., Mackey, et al  
2021; 6 (1): e880
- **Peripheral Nerve Stimulation for Occipital Neuralgia.** *Pain medicine (Malden, Mass.)*  
Salmasi, V., Olatoye, O. O., Terkawi, A. S., Hah, J. M., Ottestad, E., Pingree, M.  
2020; 21 (Supplement\_1): S13–S17
- **Peripheral Nerve Stimulation for Pudendal Neuralgia: A Technical Note.** *Pain medicine (Malden, Mass.)*  
Gregory, N. S., Terkawi, A. S., Prabhakar, N. K., Tran, J. V., Salmasi, V., Hah, J. M.  
2020; 21 (Supplement\_1): S51–S55
- **Outcomes of Sympathetic Blocks in the Management of Complex Regional Pain Syndrome: A Retrospective Cohort Study.** *Anesthesiology*  
Cheng, J. n., Salmasi, V. n., You, J. n., Grille, M. n., Yang, D. n., Mascha, E. J., Cheng, O. T., Zhao, F. n., Rosenquist, R. W.  
2019
- **Genomic analysis identifies frequent deletions of Dystrophin in olfactory neuroblastoma.** *Nature communications*  
Gallia, G. L., Zhang, M., Ning, Y., Haffner, M. C., Batista, D., Binder, Z. A., Bishop, J. A., Hann, C. L., Hruban, R. H., Ishii, M., Klein, A. P., Reh, D. D., Rooper, et al  
2018; 9 (1): 5410
- **Genomic analysis identifies frequent deletions of Dystrophin in olfactory neuroblastoma** *NATURE COMMUNICATIONS*  
Gallia, G. L., Zhang, M., Ning, Y., Haffner, M. C., Batista, D., Binder, Z. A., Bishop, J. A., Hann, C. L., Hruban, R. H., Ishii, M., Klein, A. P., Reh, D. D., Rooper, et al  
2018; 9
- **Relationship between Intraoperative Hypotension, Defined by Either Reduction from Baseline or Absolute Thresholds, and Acute Kidney and Myocardial Injury after Noncardiac Surgery: A Retrospective Cohort Analysis.** *Anesthesiology*  
Salmasi, V., Maheshwari, K., Yang, D., Mascha, E. J., Singh, A., Sessler, D. I., Kurz, A.  
2016: -?
- **Clonidine Does Not Reduce Pain or Opioid Consumption After Noncardiac Surgery.** *Anesthesia and analgesia*  
Turan, A., Babazade, R., Kurz, A., Devereaux, P. J., Zimmerman, N. M., Hutcherson, M. T., Naylor, A. J., Ali Sakr Esa, W., Parlow, J., Gilron, I., Honar, H., Salmasi, V., Sessler, et al  
2016; 123 (3): 749-757
- **Establishment and Biological Characterization of a Panel of Glioblastoma Multiforme (GBM) and GBM Variant Oncosphere Cell Lines** *PLOS ONE*  
Binder, Z. A., Wilson, K. M., Salmasi, V., Orr, B. A., Eberhart, C. G., Siu, I., Lim, M., Weingart, J. D., Quinones-Hinojosa, A., Bettegowda, C., Kassam, A. B., Olivi, A., Brem, et al  
2016; 11 (3)
- **Identification of location of nerve catheters using pumping maneuver and M-Mode-a novel technique** *JOURNAL OF CLINICAL ANESTHESIA*  
Elsharkawy, H., Salmasi, V., Abd-Elsayed, A., Turan, A.  
2015; 27 (4): 325-330
- **Intraoperative hypertensive crisis due to a catecholamine-secreting esthesioneuroblastoma** *HEAD AND NECK-JOURNAL FOR THE SCIENCES AND SPECIALTIES OF THE HEAD AND NECK*  
Salmasi, V., Schiavi, A., Binder, Z. A., Ruzevick, J., Orr, B. A., Burger, P. C., Ball, D. W., Blitz, A. M., Koch, W. M., Ishii, M., Gallia, G. L.  
2015; 37 (6): E74-E80
- **Intraoperative Core Temperature Patterns, Transfusion Requirement, and Hospital Duration in Patients Warmed with Forced Air** *ANESTHESIOLOGY*  
Sun, Z., Honar, H., Sessler, D. I., Dalton, J. E., Yang, D., Panjasawatwong, K., Deroee, A. F., Salmasi, V., Saager, L., Kurz, A.  
2015; 122 (2): 276-285

- **Perioperative aspirin and clonidine and risk of acute kidney injury: a randomized clinical trial.** *JAMA*  
Garg, A. X., Kurz, A., Sessler, D. I., Cuerden, M., Robinson, A., Mrkobrada, M., Parikh, C. R., Mizera, R., Jones, P. M., Tiboni, M., Font, A., Cegarra, V., Gomez, et al  
2014; 312 (21): 2254-2264
- **Clonidine in Patients Undergoing Noncardiac Surgery** *NEW ENGLAND JOURNAL OF MEDICINE*  
Devereaux, P. J., Sessler, D. I., Leslie, K., Kurz, A., Mrkobrada, M., Alonso-Coello, P., Villar, J. C., Sigamani, A., Biccard, B. M., Meyhoff, C. S., Parlow, J. L., Guyatt, G., Robinson, et al  
2014; 370 (16): 1504-1513
- **Aspirin in Patients Undergoing Noncardiac Surgery** *NEW ENGLAND JOURNAL OF MEDICINE*  
Devereaux, P. J., Mrkobrada, M., Sessler, D. I., Leslie, K., Alonso-Coello, P., Kurz, A., Villar, J. C., Sigamani, A., Biccard, B. M., Meyhoff, C. S., Parlow, J. L., Guyatt, G., Robinson, et al  
2014; 370 (16): 1494-1503
- **NY-ESO-1 Expression in Meningioma Suggests a Rationale for New Immunotherapeutic Approaches** *CANCER IMMUNOLOGY RESEARCH*  
Baia, G. S., Caballero, O. L., Ho, J. S., Zhao, Q., Cohen, T., Binder, Z. A., Salmasi, V., Gallia, G. L., Quinones-Hinojosa, A., Olivi, A., Brem, H., Burger, P., Strausberg, et al  
2013; 1 (5): 296-302
- **5-azacytidine reduces methylation, promotes differentiation and induces tumor regression in a patient-derived IDH1 mutant glioma xenograft** *ONCOTARGET*  
Borodovsky, A., Salmasi, V., Turcan, S., Fabius, A. W., Baia, G. S., Eberhart, C. G., Weingart, J. D., Gallia, G. L., Baylin, S. B., Chan, T. A., Riggins, G. J.  
2013; 4 (10): 1737-1747
- **Exomic Sequencing of Four Rare Central Nervous System Tumor Types** *ONCOTARGET*  
Bettegowda, C., Agrawal, N., Jiao, Y., Wang, Y., Wood, L. D., Rodriguez, F. J., Hruban, R. H., Gallia, G. L., Binder, Z. A., Riggins, C. J., Salmasi, V., Riggins, G. J., Reitman, et al  
2013; 4 (4): 572-583
- **Expanded endonasal endoscopic approach for resection of a growth hormone-secreting pituitary macroadenoma coexistent with a cavernous carotid artery aneurysm** *JOURNAL OF CLINICAL NEUROSCIENCE*  
Xia, X., Ramanathan, M., Orr, B. A., Salmasi, V., Salvatori, R., Reh, D. D., Gallia, G. L.  
2012; 19 (10): 1437-1441
- **Chemotherapy within 30 days before surgery does not augment postoperative mortality and morbidity** *CANADIAN JOURNAL OF ANESTHESIA-JOURNAL CANADIEN D ANESTHESIE*  
Turan, A., Shao, D., Salmasi, V., Honar, H., Atim, A., Dalton, J. E., Saager, L., Sessler, D. I.  
2012; 59 (8): 758-765
- **Establishment and characterization of a primary human chordoma xenograft model Laboratory investigation** *JOURNAL OF NEUROSURGERY*  
Siu, I., Salmasi, V., Orr, B. A., Zhao, Q., Binder, Z. A., Tran, C., Ishii, M., Riggins, G. J., Hann, C. L., Gallia, G. L.  
2012; 116 (4): 801-809
- **Expanded endonasal endoscopic approach for resection of a skull base low-grade smooth muscle neoplasm** *CHILDS NERVOUS SYSTEM*  
Salmasi, V., Reh, D. D., Blitz, A. M., Argani, P., Ishii, M., Gallia, G. L.  
2012; 28 (1): 151-158
- **Endonasal endoscopic resection of esthesioneuroblastoma: the Johns Hopkins Hospital experience and review of the literature** *NEUROSURGICAL REVIEW*  
Gallia, G. L., Reh, D. D., Salmasi, V., Blitz, A. M., Koch, W., Ishii, M.  
2011; 34 (4): 465-474
- **Expanded endonasal endoscopic approach for resection of a large skull base aneurysmal bone cyst in a pediatric patient with extensive cranial fibrous dysplasia** *CHILDS NERVOUS SYSTEM*  
Salmasi, V., Blitz, A. M., Ishii, M., Gallia, G. L.  
2011; 27 (4): 649-656