



Miles Berger

Professor of Anesthesiology, Perioperative and Pain Medicine (MSD)

 NIH Biosketch available Online

CLINICAL OFFICE (PRIMARY)

- **Anesthesia Department**

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Bio

BIO

I am a neuroanesthesiologist and translational human neuroscientist. Clinically, I care for patients undergoing brain and spine surgery, and have an interest in optimizing anesthesia care (and postoperative cognitive outcomes) for older surgical patients.

My research team studies mechanisms of perioperative neurocognitive disorders (such as delirium) in older adults, the relationship between anesthetic brain sensitivity (as measured by EEG) and preclinical/prodromal age-related changes in brain structure and function, and mechanisms by which the APOE4 allele leads to increased Alzheimer's Disease risk and neurocognitive decline. Together with collaborators, we use a transdisciplinary approach combining molecular/cellular assays (including ELISAs, proteomics, metabolomics, and flow cytometry) on pre- and post-operative CSF and plasma samples from older surgical patients, functional and structural MRI neuroimaging, pre- and intra-operative EEG recordings, genetics (and epigenetics), and pre and postoperative delirium screening and cognitive testing. Overall, our hope is that the combination of these different methods will allow us to obtain insights into the mechanisms of perioperative neurocognitive disorders that could not be obtained by any single method alone.

Our group values mentorship, and we are happy to talk with prospective undergraduate, graduate or post-doctoral students with an interest in our work.

CLINICAL FOCUS

- Anesthesia
- neuroanesthesiology
- geriatric anesthesia
- perioperative neurocognitive disorders
- Anesthetic Care for Patients with Dementia or Cognitive Impairment

ACADEMIC APPOINTMENTS

- Professor - University Medical Line, Anesthesiology, Perioperative and Pain Medicine
- Member, Bio-X
- Member, Wu Tsai Neurosciences Institute

ADMINISTRATIVE APPOINTMENTS

- Neuroanesthesiology Section Chief, Stanford Anesthesiology Department, (2024- present)

HONORS AND AWARDS

- Inducted as a Member of the American Society of Clinical Investigation, (ASCI) (2023)
- Butler-Williams Scholar, National Institute on Aging (2015)
- GEMSTAR Scholar, National Institute on Aging (2015-2017)
- Beeson Scholar, National Institute on Aging (2017- 2023)
- Inducted into the Foundation for Anesthesia Education & Research (FAER) Academy of Research Mentors, FAER ARMA (2023)

PROFESSIONAL EDUCATION

- Board Certification: Anesthesia, American Board of Anesthesiology (2025)
- Fellowship: Duke University Hospital (2014) NC
- Residency: Duke University Medical Center Anesthesiology Residency (2013) NC
- Medical Education: UCSF School of Medicine SF General Hospital (2009) CA

Research & Scholarship

RESEARCH INTERESTS

- Assessment, Testing and Measurement
- Brain and Learning Sciences
- Professional Development
- Research Methods

Teaching

STANFORD ADVISEES

Postdoctoral Faculty Sponsor

Ashley Phoenix

Publications

PUBLICATIONS

- **Critical differences among stakeholders in definitions of success following inguinal hernia repair in older adults.** *Surgery*
Thornton, M., Cher, B. A., Macdonald, C., Lunardi, N., Marten, E. L., Mai, D., Fisher, K., Machado Heredia, M. L., Skinner, C. S., Brown, C. J., Berger, M., Lee, S. C., Cullum, et al
2026; 196: 110253
- **Apolipoprotein E Mimetic Peptide CN-105 and Postoperative Delirium in Older Patients: The Phase 2 MARBLE Randomized Clinical Trial.** *JAMA network open*
Timko, N. J., Cooter Wright, M., Smith, M. R., Boykin, P. C., Emerson, J. M., Woldorff, M. G., Eleswarpu, S., Herbert, J. T., Moretti, E. W., Devinney, M. J., Ayoub, C. M., Rockhold, F. W., Ryu, et al
2026; 9 (4): e262289
- **Barriers to the Implementation of Local Anesthesia for Older Adults Undergoing Inguinal Hernia Repair** *JOURNAL OF THE AMERICAN GERIATRICS SOCIETY*
Mai, D., Cher, B. A. Y., Lunardi, N., Thornton, M., Baker, J. G., Macdonald, C., Skinner, C., Brown, C. J., Marten, E. L., Makris, K., Heredia, M., Berger, M., Cullum, et al
2026

- **Cerebrospinal fluid amyloid- β 42/40 ratio is associated with ganglion cell-inner plexiform layer thinning in individuals with and without amyloid pathology.** *Journal of Alzheimer's disease : JAD*
Patel, H., Choi, A., Weng, P., Karl, J., Joseph, S., Johnson, K. G., Berger, M., Whitson, H. E., Grewal, D. S., Fekrat, S.
2026: 13872877261423968
- **Effect of perioperative autonomic nervous system imbalance on surgical outcomes: role of regional sympathetic block. Comment on Br J Anaesth 2025; 135: 608-22.** *British journal of anaesthesia*
Bombardieri, A. M., Berger, M., Schreiber, K.
2026
- **Developing Topics.** *Alzheimer's & dementia : the journal of the Alzheimer's Association*
Smith, M. R., Roberts, K. C., Browndyke, J. N., Wright, M. C., Reekes, T. H., Devinney, M. J., Cohen, H. J., Mathew, J. P., Whitson, H., Woldorff, M. G., Berger, M.
2025; 21 Suppl 7 (Suppl 7): e108129
- **Biomarkers.** *Alzheimer's & dementia : the journal of the Alzheimer's Association*
Smith, P. J., Johnson, K. G., Roth, H. L., Potter, G. G., Patillo, S., Lin, W. J., Song, A. J., Berger, M., O'Brien, R. J., Liu, A., Lutz, M. W., Luo, S., Bozoki, et al
2025; 21 Suppl 2 (Suppl 2): e098097
- **Biomarkers.** *Alzheimer's & dementia : the journal of the Alzheimer's Association*
Smith, P. J., Johnson, K. G., Roth, H. L., Potter, G. G., Patillo, S., Lin, W. J., Song, A. J., Berger, M., O'Brien, R. J., Liu, A., Lutz, M. W., Luo, S., Bozoki, et al
2025; 21 Suppl 2: e098089
- **Biomarkers.** *Alzheimer's & dementia : the journal of the Alzheimer's Association*
Smith, P. J., Johnson, K. G., Roth, H. L., Potter, G. G., Patillo, S., Lin, W. J., Song, A. J., Berger, M., O'Brien, R. J., Liu, A., Lutz, M. W., Luo, S., Bozoki, et al
2025; 21 Suppl 2: e098671
- **Learning How Preoperative Communication Relates to Postoperative Experiences for Older Veterans Having Inguinal Hernia Surgery.** *Journal of the American Geriatrics Society*
Thornton, M. A., Marten, E. L., Lunardi, N., Mai, D., Macdonald, C., Baker, J. G., Hitzeman, A., Skinner, C. S., Brown, C. J., Berger, M., Lee, S. C., Cullum, C. M., Makris, et al
2025
- **Identifying Barriers and Motivators to Increase Surgical Clinical Trial Participation for Older Veterans.** *Journal of the American Geriatrics Society*
Cher, B. A., Lunardi, N., Thornton, M., Hitzeman, A., Baker, J., Macdonald, C., Skinner, C. S., Brown, C. J., Mai, D., Marten, E. L., Makris, K., Heredia, M. L., Berger, et al
2025
- **Prediction of postoperative delirium in older adults from preoperative cognition and occipital alpha power from resting-state electroencephalogram.** *Age and ageing*
Ning, M. H., Rodionov, A., Ross, J. M., Ozdemir, R. A., Burch, M., Lian, S. J., Alsop, D., Cavallari, M., Dickerson, B., Fong, T., Jones, R. N., Libermann, T., Marcantonio, et al
2025; 54 (11)
- **Effects of Non-Cardiac/Non-neurologic Surgery and Anaesthesia on the CSF Proteome, and Modulation by the APOE Mimetic Peptide CN-105.** *medRxiv : the preprint server for health sciences*
Zou, H., Lutz, M. W., Foster, M. W., Wright, M. C., Violette, M. J., Luo, S., Laskowitz, D., Devinney, M. J., Berger, M.
2025
- **Cerebrospinal fluid proteome of patients with persistent pain and/or postpartum depression after elective cesarean delivery: An exploratory prospective cohort study: Reply.** *Journal of clinical anesthesia*
Yurashevich, M., Habib, A. S., Berger, M.
2025; 106: 111943
- **Cerebrospinal fluid proteome of patients with persistent pain and/or postpartum depression after elective cesarean delivery: An exploratory prospective cohort study.** *Journal of clinical anesthesia*
Yurashevich, M., Devinney, M., Foster, M. W., Myers, R., O'Grady, N., Ji, R. R., Habib, A. S., Berger, M.

2025; 104: 111855

- **Complement Activation in ICU Delirium and Subsequent Alzheimer's Disease (CASCADE-ICU): Study Design**
Takla, J., Timko, N., Hassan, R., Bennett, M., Adams, M., Serbanescu, M., Terrando, N., Foster, M., Simon, J., Arepally, G., Welsh-Bohmer, K., Treggiari, M., Zetterberg, et al
LIPPINCOTT WILLIAMS & WILKINS.2025: 178-179
- **Postoperative Changes in Plasma and Cerebrospinal Fluid Albumin Levels Suggest a Role for Increased Vascular Permeability in Delirium Following Non-Cardiac Surgery**
Hassan, R., Wong, M., Wright, M., Marcantonio, E., Terrando, N., Browndyke, J., Whitson, H., Cohen, H., Nackley, A., Monten, K., Teshome, S., Klein, M., Ely, et al
LIPPINCOTT WILLIAMS & WILKINS.2025: 492-495
- **Mind the messenger: role of extracellular vesicle signalling in postoperative neurocognitive dysfunction.** *British journal of anaesthesia*
Das, S., Devinney, M. J., Berger, M., Brown, C. H.
2025
- **Associations between anaesthetic dose-adjusted intraoperative EEG alpha power, processing speed, and postoperative delirium: analysis of data from three prospective studies.** *British journal of anaesthesia*
Reese, M., Wright, M. C., Roberts, K. C., Browndyke, J. N., Bennett, M., Acker, L., Devinney, M. J., Reekes, T. H., Waligorska, T., Shaw, L. M., Blennow, K., Zetterberg, H., Cohen, et al
2025
- **Clinical and Cytokine Predictors of Persistent Post-Operative Pain in Older Adults**
Dewberry, L., Wright, M., Klein, M., Devinney, M., Berger, M., Nackley, A.
CHURCHILL LIVINGSTONE.2025
- **Predilection for Perplexion: Preoperative microstructural damage is linked to postoperative delirium.** *medRxiv : the preprint server for health sciences*
Reekes, T. H., Upadhyaya, V. R., Merenstein, J. L., Cooter-Wright, M., Madden, D. J., Reese, M. A., Boykin, P. C., Timko, N. J., Moul, J. W., Garrigues, G. E., Martucci, K. T., Cohen, H. J., Whitson, et al
2025
- **Advancing Delirium Treatment Trials in Older Adults: Recommendations for Future Trials From the Network for Investigation of Delirium: Unifying Scientists (NIDUS).** *Critical care medicine*
Devlin, J. W., Sieber, F., Akeju, O., Khan, B. A., MacLulich, A. M., Marcantonio, E. R., Oh, E. S., Agar, M. R., Avelino-Silva, T. J., Berger, M., Burry, L., Colantuoni, E. A., Evered, et al
2025; 53 (1): e15-e28
- **The Role of Sleep Apnea in Postoperative Neurocognitive Disorders Among Older Noncardiac Surgery Patients: A Prospective Cohort Study.** *Anesthesia and analgesia*
Devinney, M. J., Spector, A. R., Wright, M. C., Thomas, J., Avasarala, P., Moretti, E. W., Dominguez, J. E., Smith, P. J., Whitson, H. E., Veasey, S. C., Mathew, J. P., Berger, M.
2025; 140 (1): 99-109
- **2025 American Society of Anesthesiologists Practice Advisory for Perioperative Care of Older Adults Scheduled for Inpatient Surgery.** *Anesthesiology*
Sieber, F., Mclsaac, D. I., Deiner, S., Azefor, T., Berger, M., Hughes, C., Leung, J. M., Maldon, J., McSwain, J. R., Neuman, M. D., Russell, M. M., Tang, V., Whitlock, et al
2025; 142 (1): 22-51
- **Biomarkers.** *Alzheimer's & dementia : the journal of the Alzheimer's Association*
Reese, M., Cooter, M., Roberts, K. C., Woldorff, M. G., Browndyke, J. N., Shaw, L. M., Waligorska, T., Zetterberg, H., Blennow, K., Berger, M.
2024; 20 Suppl 2: e089088
- **Developing Topics.** *Alzheimer's & dementia : the journal of the Alzheimer's Association*
Berger, M., Timko, N. J., Boykin, P. C., Emerson, J. M., Woldorff, M. G., Wright, M. C., Herbert, J. T., Moretti, E. W., Devinney, M. J., Ryu, D., VanDusen, K. W., Bunning, T., Hsia, et al
2024; 20 Suppl 8: e095338
- **Advancing Delirium Treatment Trials in Older Adults: Recommendations for Future Trials From the Network for Investigation of Delirium: Unifying Scientists (NIDUS).** *Critical care medicine*

- Devlin, J. W., Sieber, F., Akeju, O., Khan, B. A., MacLulich, A. M., Marcantonio, E. R., Oh, E. S., Agar, M. R., Avelino-Silva, T. J., Berger, M., Burry, L., Colantuoni, E. A., Evered, et al
2024
- **Corrigendum to "A real-time neurophysiologic stress test for the aging brain: Novel perioperative and ICU applications of EEG in older surgical patients" *Neurotherapeutics* 20 (4) (2023) 975-1000.** *Neurotherapeutics : the journal of the American Society for Experimental NeuroTherapeutics*
Berger, M., Ryu, D., Reese, M., McGuigan, S., Evered, L. A., Price, C. C., Scott, D. A., Westover, M. B., Eckenhoff, R., Bonanni, L., Sweeney, A., Babiloni, C.
2024: e00473
 - **Potential risks of nonoperative management of appendicitis in high-risk patients.** *Surgery*
Lunardi, N., Thornton, M., Zarzaur, B. L., Agarwal, S., Berger, M., Sharath, S., Kougias, P., Bhat, S., Frank, K., Pham, T. H., Balentine, C. J.
2024
 - **Multi-level social determinants of health, inflammation, and postoperative delirium in older adults** *JOURNAL OF THE AMERICAN GERIATRICS SOCIETY*
Vasunilashorn, S. M., Wolfson, E., Berger, M., Leung, J., Ware, E. B., Baccarelli, A., Jones, R. N., Ngo, L. H., Marcantonio, E. R., Inouye, S. K., Kind, A. J. H.
2024
 - **Prediction of Post-Operative Delirium in Older Adults from Preoperative Cognition and Alpha Power from Resting-State EEG.** *medRxiv : the preprint server for health sciences*
Ning, M., Rodionov, A., Ross, J. M., Ozdemir, R. A., Burch, M., Lian, S. J., Alsop, D., Cavallari, M., Dickerson, B. C., Fong, T. G., Jones, R. N., Libermann, T. A., Marcantonio, et al
2024
 - **Anesthesia Dose and Delirium-A Picture Coming Into Focus** *JAMA-JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION*
Berger, M., Neuman, M. D.
2024; 332 (2): 107-108
 - **Cognitive and Cerebrospinal Fluid Alzheimer's Disease-related Biomarker Trajectories in Older Surgical Patients and Matched Nonsurgical Controls** *ANESTHESIOLOGY*
Reese, M., Wong, M. K., Cheong, V., Ha, C. I., Wright, M., Browndyke, J., Moretti, E., Devinney, M. J., Habib, A. S., Moul, J. W., Shaw, L. M., Waligorska, T., Whitson, et al
2024; 140 (5): 963-978
 - **Reply to "A Letter Concerning a Role for Blood-Brain Barrier Dysfunction in Delirium following Noncardiac Surgery in Older Adults"** *ANNALS OF NEUROLOGY*
Devinney, M. J., Berger, M.
2024; 95 (2): 411-413
 - **Preoperative electroencephalographic alpha-power changes with eyes opening are associated with postoperative attention impairment and inattention-related delirium severity** *BRITISH JOURNAL OF ANAESTHESIA*
Acker, L., Wong, M. K., Wright, M. C., Reese, M., Giattino, C. M., Roberts, K. C., Au, S., Colon-Emeric, C., Lipsitz, L. A., Devinney, M. J., Browndyke, J., Eleswarpu, S., Moretti, et al
2024; 132 (1): 154-163
 - **Association between surgery and rate of incident dementia in older adults: A population-based retrospective cohort study** *JOURNAL OF THE AMERICAN GERIATRICS SOCIETY*
Reich, K. M., Gill, S. S., Eckenhoff, R., Berger, M., Austin, P. C., Rochon, P. A., Nguyen, P., Goodarzi, Z., Seitz, D. P.
2024; 72 (5): 1348-1359
 - **Inflammatory changes in the plasma and cerebrospinal fluid of patients with persistent pain and postpartum depression after elective Cesarean delivery: an exploratory prospective cohort study** *CANADIAN JOURNAL OF ANESTHESIA-JOURNAL CANADIEN D ANESTHESIE*
Yurashevich, M., Cooter Wright, M., Sims, S. C., Tan, H., Berger, M., Ji, R., Habib, A. S.
2023; 70 (12): 1917-1927
 - **Role of Blood-Brain Barrier Dysfunction in Delirium following Non-cardiac Surgery in Older Adults** *ANNALS OF NEUROLOGY*
Devinney, M. J., Wong, M. K., Wright, M., Marcantonio, E. R., Terrando, N., Browndyke, J. N., Whitson, H. E., Cohen, H. J., Nackley, A. G., Klein, M. E., Ely, E., Mathew, J. P., Berger, et al
2023; 94 (6): 1024-1035

- **PD-L1/PD-1 checkpoint pathway regulates hippocampal neuronal excitability and learning and memory behavior** *NEURON*
Zhao, J., Bang, S., Furutani, K., Mcginnis, A., Jiang, C., Roberts, A., Donnelly, C. R., He, Q., James, M. L., Berger, M., Ko, M., Wang, H., Palmiter, et al
2023; 111 (17): 2709-+
- **EEG pre-burst suppression: characterization and inverse association with preoperative cognitive function in older adults** *FRONTIERS IN AGING NEUROSCIENCE*
Reese, M., Christensen, S., Anolick, H., Roberts, K. C., Wong, M. K., Wright, M., Acker, L., Browndyke, J. N., Woldorff, M. G., Berger, M., MADCO-PC & INTUIT Investigators
2023; 15: 1229081
- **Awake Spinal Fusion Is Associated with Reduced Length of Stay, Opioid Use, and Time to Ambulation Compared to General Anesthesia: A Matched Cohort Study** *WORLD NEUROSURGERY*
Sykes, D. A. W., Tabarestani, T. Q., Chaudhry, N. S., Salven, D. S., Shaffrey, C. I., Bullock, W., Guinn, N. R., Gadsden, J., Berger, M., Abd-El-Barr, M. M.
2023; 176: E91-E100
- **Amyloid beta and postoperative delirium: partners in crime or strangers in the dark?** *BRITISH JOURNAL OF ANAESTHESIA*
Reekes, T. H., Deviney, M. J., Berger, M.
2023; 131 (2): 205-208
- **Perioperative changes in neurocognitive and Alzheimer's disease-related cerebrospinal fluid biomarkers in older patients randomised to isoflurane or propofol for anaesthetic maintenance** *BRITISH JOURNAL OF ANAESTHESIA*
Villalobos, D., Reese, M., Wright, M., Wong, M., Syed, A., Park, J., Hall, A., Browndyke, J. N., Martucci, K. T., Deviney, M. J., Acker, L., Moretti, E. W., Talbot, et al
2023; 131 (2): 328-337
- **A Real-Time Neurophysiologic Stress Test for the Aging Brain: Novel Perioperative and ICU Applications of EEG in Older Surgical Patients** *NEUROTHERAPEUTICS*
Berger, M., Ryu, D., Reese, M., McGuigan, S., Evered, L. A., Price, C. C., Scott, D. A., Westover, M., Eckenhoff, R., Bonanni, L., Sweeney, A., Babiloni, C.
2023; 20 (4): 975-1000
- **A Role for Blood-brain Barrier Dysfunction in Delirium following Non-Cardiac Surgery in Older adults.** *medRxiv : the preprint server for health sciences*
Devinney, M. J., Wong, M. K., Wright, M. C., Marcantonio, E. R., Terrando, N., Browndyke, J. N., Whitson, H. E., Cohen, H. J., Nackley, A. G., Klein, M. E., Ely, E. W., Mathew, J. P., Berger, et al
2023
- **Awake spinal anesthesia facilitates spine surgery in poor surgical candidates: A case series** *NEUROCHIRURGIE*
Sykes, D. A. W., Tabarestani, T. Q., Salven, D. S., Chaudhry, N. S., Wang, T. Y., Gottfried, O. N., Shaffrey, C. I., Guinn, N. R., Gadsden, J., Ayoub, C. M., Bullock, W., Berger, M., Abd-El-Barr, et al
2023; 69 (3): 101444
- **Perioperative neurocognitive and functional neuroimaging trajectories in older APOE4 carriers compared with non-carriers: secondary analysis of a prospective cohort study (vol 127, pg 917, 2021)** *BRITISH JOURNAL OF ANAESTHESIA*
Browndyke, J. N., Wright, M. C., Yang, R., Syed, A., Park, J., Hall, A., Martucci, K., Devinney, M. J., Shaw, L., Waligorska, T., Moretti, E. W., Whitson, H. E., Cohen, et al
2023; 130 (5): 646
- **Outcomes of Nonoperative vs Operative Management of Acute Appendicitis in Older Adults in the US** *JAMA SURGERY*
Meier, J., Stevens, A., Bhat, A., Berger, M., Balentine, C.
2023; 158 (6): 625-632
- **Blood-brain barrier permeability and cognitive dysfunction after surgery - A pilot study** *JOURNAL OF CLINICAL ANESTHESIA*
Lascola, C. D., Cotter, S. F., Klinger, R. Y., Bisanar, T., Wright, M., Berger, M., Martin, G., Podgoreanu, M. V., Newman, M. F., Terrando, N., Mathew, J. P.
2023; 86: 111059
- **Comparison of Postoperative Outcomes of Laparoscopic vs Open Inguinal Hernia Repair** *JAMA SURGERY*
Meier, J., Stevens, A., Berger, M., Makris, K., Bramos, A., Reisch, J., Cullum, C., Lee, S. C., Skinner, C., Zeh, H., Brown, C. J., Balentine, C. J.

2023; 158 (2): 172-180

- **Hevin/Sparcl1 drives pathological pain through spinal cord astrocyte and NMDA receptor signaling** *JCI INSIGHT*
Chen, G., Xu, J., Luo, H., Luo, X., Singh, S. K., Ramirez, J. J., James, M. L., Mathew, J. P., Berger, M., Eroglu, C., Ji, R.
2022; 7 (23)
- **Conserved YKL-40 changes in mice and humans after postoperative delirium** *BRAIN, BEHAVIOR, & IMMUNITY - HEALTH*
David-Bercholz, J., Acker, L., Caceres, A. I., Wu, P., Goenka, S., Franklin, N. O., Rodriguez, R. M., Wetsel, W. C., Devinney, M., Wright, M., Zetterberg, H., Yang, T., Berger, et al
2022; 26: 100555
- **Neuroimaging and immunological features of neurocognitive function related to substance use in people with HIV** *JOURNAL OF NEUROVIROLOGY*
Murdoch, D. M., Barfield, R., Chan, C., Towe, S. L., Bell, R. P., Volkheimer, A., Choe, J., Hall, S. A., Berger, M., Xie, J., Meade, C. S.
2023; 29 (1): 78-93
- **Intraoperative Anesthetic Probes of Brain Health: Ketamine as a Canary in the Coal Mine?** *Anesthesia and analgesia*
Reese, M., Heifets, B. D., Berger, M.
2022; 135 (4): 679-682
- **The potential link between obstructive sleep apnea and postoperative neurocognitive disorders: current knowledge and possible mechanisms** *CANADIAN JOURNAL OF ANESTHESIA-JOURNAL CANADIEN D ANESTHESIE*
Devinney, M. J., VanDusen, K. W., Kfoury, J. M., Avasarala, P., Spector, A. R., Mathew, J. P., Berger, M.
2022; 69 (10): 1272-1287
- **Regional vs General Anesthesia and Incidence of Postoperative Delirium in Older Patients Undergoing Hip Fracture Surgery** *JAMA-JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION*
Nobuhara, C., Devinney, M., Berger, M.
2022; 327 (17): 1707-+
- **Pre- and Postoperative CSF Proteomic Signatures of Postoperative Delirium**
Thomas, J., Corcoran, D., Fuller, M., Moseley, A., Cooter, M., Lutz, M., Mathew, J. P., Berger, M., Devinney, M.
LIPPINCOTT WILLIAMS & WILKINS.2022: 467-470
- **Cognitive and cerebrospinal fluid Alzheimer's Disease biomarker changes over time in older surgical patients and matched nonsurgical controls**
Wong, M., Reese, M., Cooter, M., Browndyke, J. N., Mathew, J. P., Cohen, H. J., Whitson, H. E., Berger, M.
LIPPINCOTT WILLIAMS & WILKINS.2022: 954-956
- **Perioperative neurocognitive and CSF Alzheimer's biomarker trajectories in older patients randomized to Isoflurane or Propofol for Anaesthetic Maintenance**
Villalobos, D., Berger, M., Cooter, M., Browndyke, J. N., Syed, A., Moretti, E., Devinney, M.
LIPPINCOTT WILLIAMS & WILKINS.2022: 488-490
- **The SANDMAN Study: Sleep Apnea, Neuroinflammation, and Cognitive Dysfunction Manifesting After Non-cardiac surgery**
Avasarala, P., Thomas, J., Spector, A. R., Browndyke, J. N., Smith, P. J., Dominguez, J., Cooter, M., Bunning, T., Eleswarpu, S., VanDusen, K. W., Cai, V., Whitson, H. E., Mathew, et al
LIPPINCOTT WILLIAMS & WILKINS.2022: 1100-1102
- **Preoperative EEG Inattention Signatures and Postoperative Delirium**
Acker, L., Au, S., Roberts, K., Giattino, C., Moretti, E., Devinney, M., Reese, M., Cohen, H. J., Mathew, J. P., Woldorff, M. G., Whitson, H. E., Berger, M.
LIPPINCOTT WILLIAMS & WILKINS.2022: 496
- **Machine learning XGBoost classification of postoperative delirium by intraoperative EEG metrics**
Reese, M., Roberts, K., Woldorff, M. G., Cooter, M., Acker, L., Wu, S., Whitson, H. E., Berger, M.
LIPPINCOTT WILLIAMS & WILKINS.2022: 609-611
- **Postoperative changes in cognition and cerebrospinal fluid neurodegenerative disease biomarkers** *ANNALS OF CLINICAL AND TRANSLATIONAL NEUROLOGY*
Berger, M., Browndyke, J. N., Wright, M., Nobuhara, C., Reese, M., Acker, L., Bullock, W., Colin, B. J., Devinney, M. J., Moretti, E. W., Moul, J. W., Ohlendorf, B., Laskowitz, et al

2022; 9 (2): 155-170

- **Developing a Real-Time Electroencephalogram-Guided Anesthesia-Management Curriculum for Educating Residents: A Single-Center Randomized Controlled Trial** *ANESTHESIA AND ANALGESIA*
Berger, M., Eleswarpu, S. S., Wright, M., Ray, A. M., Wingfield, S. A., Heflin, M. T., Bengali, S., Udani, A. D.
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