



Anna Maria Bombardieri, MD, PhD, MSc

Clinical Associate Professor, Anesthesiology, Perioperative and Pain Medicine

CLINICAL OFFICE (PRIMARY)

- **Anesthesia**

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Bio

BIO

Anna Maria Bombardieri, MD, PhD, MSc, is an anesthesiologist specializing in regional anesthesiology and autonomic neuromodulation. She completed her residency training and PhD in Anesthesiology at the University of Florence. She subsequently completed fellowships in Regional Anesthesia and Acute Pain Medicine, as well as research training, at the Hospital for Special Surgery in New York, followed by fellowship training in Critical Care Medicine at Université Libre de Bruxelles in Belgium.

Dr. Bombardieri later served on the faculty of the Department of Anesthesiology at Université Sophia Antipolis in Nice, France, and at Washington University School of Medicine in St. Louis before joining the Department of Anesthesiology, Perioperative and Pain Medicine at Stanford University. While on faculty at Stanford, she completed a Master of Science in Epidemiology and Clinical Research at Stanford University School of Medicine, further strengthening her focus on clinical investigation and translational research.

CLINICAL FOCUS

- Regional Anesthesia
- Autonomic Neuromodulation
- Anesthesia
- Perioperative Medicine

ACADEMIC APPOINTMENTS

- Clinical Associate Professor, Anesthesiology, Perioperative and Pain Medicine
- Member, Cardiovascular Institute
- Member, Wu Tsai Neurosciences Institute

HONORS AND AWARDS

- Best Poster Award, European Society of Neurosonology and Cerebral Hemodynamics (2013)
- Charles L. Christian Award for Excellence in Musculoskeletal Research, Hospital for Special Surgery, NY (2012)

- Award for Academic Excellence, Hospital for Special Surgery, NY (2012)
- Resident Research Contest Award, Post Graduate Assembly in Anesthesiology, NY (2011)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, Protocol Working Group (sPWG), RECOVER-TLC Trial. National Institutes of Health (NIH), National Institute of Allergy and Infectious Diseases (NIAID), and RTI International (2025 - present)
- Committee on Regional Anesthesia and Acute Pain Medicine, American Society of Anesthesiology (2021 - present)
- Committee on Communications, American Society of Anesthesiology (2021 - present)
- Committee of Women in Anesthesia, American Society of Anesthesiology (2021 - present)
- Member, California Society of Anesthesiology (2020 - present)
- Member, American Society of Regional Anesthesia (2019 - present)
- Member, American Society of Anesthesiology (2018 - present)
- Member, International Anesthesia Research Society (2018 - present)
- Member, European Society of Neurosonology and Cerebral Hemodynamics (2014 - present)
- Member, Cerebral Autoregulation Research Network (2012 - present)

PROFESSIONAL EDUCATION

- Masters of Science (MS), Stanford University School of Medicine , Epidemiology and Clinical Research (2024)
- Board Certification: Anesthesia, University of Florence (2009)
- Fellowship: University Libre De Bruxelles (2014) Belgium
- PhD, University of Florence School of Medicine, Anesthesiology , Italy (2013)
- Fellowship: Hospital for Special Surgery Anesthesia Fellowships (2012) NY
- Fellowship, Hospital for Special Surgery, Research , NY (2011)
- Residency: University of Florence (2009) Italy
- Medical Education: University of Rome "La Sapienza" (2005)

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

My research program focuses on the autonomic nervous system as a modifiable determinant of physiological resilience and recovery across acute and chronic disease states. I investigate sympathetic modulation as a therapeutic strategy, examining how regional anesthetic and neuromodulation techniques, including cervical sympathetic and stellate ganglion blocks, influence cerebral perfusion, cardiovascular regulation, neuroimmune interactions, and functional outcomes.

Through the integration of clinical trials, translational human physiology, and advanced physiologic monitoring, my work seeks to elucidate mechanisms of autonomic dysfunction and to develop evidence-based neuromodulation approaches for conditions such as aneurysmal subarachnoid hemorrhage, postural orthostatic tachycardia syndrome (POTS), and post-acute sequelae of COVID-19 (Long COVID). The long-term objective of this research is to advance interdisciplinary models of care and to translate autonomic science into therapeutic strategies that improve long-term patient outcomes.

CLINICAL TRIALS

- Cerebral Blood Flow Evaluation With Transcranial Doppler After Interscalene Nerve Block, Not Recruiting
- Cervical Sympathetic Block in Patients With Cerebral Vasospasm, Not Specified

Publications

PUBLICATIONS

- **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
- **Cervical sympathetic block to treat Long COVID: a scoping review.** *Regional anesthesia and pain medicine*
Bombardieri, A. M., Denoue, C. F.
2025
- **A Bridge Through the (Ventricular Tachycardia) Storm: The Role of Continuous Stellate Ganglion Blockade-A Case Report.** *A&A practice*
Lim, M. A., Kim, R. K., Bombardieri, A. M., Mihm, F.
2025; 19 (7): e02022
- **Update on scalp nerve block for craniotomy.** *Current opinion in anaesthesiology*
Maria Bombardieri, A., Pochebyt, M., Burbridge, M. A.
2025
- **Perfusion imaging for delayed cerebral ischemia detection in patients following ruptured aneurysmal subarachnoid hemorrhage: Interrater reliability assessment.** *Interventional neuroradiology : journal of peritherapeutic neuroradiology, surgical procedures and related neurosciences*
Bombardieri, A. M., Wouters, A., Seners, P., Zamarud, A., Mlynash, M., Yuen, N., Albers, G. W., Sussman, E. S., Pulli, B., Lansberg, M. G., Steinberg, G. K., Heit, J. J.
2024: 15910199241277953
- **Advancing diagnostic precision of delayed cerebral ischemia in aneurysmal subarachnoid hemorrhage: The potential for a vasospasm index score on perfusion imaging to detect vasospasm.** *European journal of radiology*
Maria Bombardieri, A., Seners, P., Wouters, A., Zamarud, A., Mlynash, M., Yuen, N., Albers, G. W., Sussman, E. S., Pulli, B., Lansberg, M. G., Steinberg, G. K., Heit, J. J.
2024; 178: 111578
- **Regional anesthesia for head and neck neurosurgical procedures: a narrative review in adult and pediatric patients.** *International anesthesiology clinics*
Pochebyt, M., Herron, S. M., Pan, S. J., Burbridge, M., Bombardieri, A. M.
2024; 62 (1): 10-20
- **Response to Correspondence on "Percutaneous cervical sympathetic block to treat cerebral vasospasm and delayed cerebral ischemia: a review of the evidence" by AL McLean.** *Journal of neurointerventional surgery*
Bombardieri, A. M., Heit, J. J.
2023
- **Percutaneous cervical sympathetic block to treat cerebral vasospasm and delayed cerebral ischemia: a review of the evidence.** *Journal of neurointerventional surgery*
Bombardieri, A. M., Albers, G. W., Rodriguez, S., Pileggi, M., Steinberg, G. K., Heit, J. J.
2022
- **Cervical sympathectomy to treat cerebral vasospasm: a scoping review.** *Regional anesthesia and pain medicine*
Bombardieri, A. M., Heifets, B. D., Treggiari, M., Albers, G. W., Steinberg, G. K., Heit, J. J.
2022
- **Changes in cerebral hemodynamics after veno-venous extracorporeal membrane oxygenation implementation.** *Intensive care medicine*
Bombardieri, A. M., Annoni, F., Partipilo, F., Taccone, F. S.
2022
- **Vasopressor Effects on Cerebral Microcirculation: Comment.** *Anesthesiology*
Bombardieri, A. M., Tsui, B. C.
2022; 136 (5): 867-868

- **The Regional Cerebral Oxygen Saturation Effect of Inotropes/Vasopressors Administered to Treat Intraoperative Hypotension: A Bayesian Network Meta-analysis.** *Journal of neurosurgical anesthesiology*
Bombardieri, A. M., Singh, N. P., Yaeger, L., Athiraman, U., Tsui, B. C., Singh, P. M.
2021
- **The effect on cerebral oxygen saturation of vasopressors administered to treat intraoperative hypotension: a Bayesian network meta-analysis**
Bombardieri, A., Singh, N. P., Tsui, B., Athiraman, U., Singh, P. M.
LIPPINCOTT WILLIAMS & WILKINS.2021: 553-554
- **Practical Training of Anesthesia Clinicians in Electroencephalogram-Based Determination of Hypnotic Depth of General Anesthesia.** *Anesthesia and analgesia*
Bombardieri, A. M., Wildes, T. S., Stevens, T., Wolfson, M., Steinhorn, R., Ben Abdallah, A., Sleight, J., Avidan, M. S.
2020; 130 (3): 777-786
- **Intraoperative Awareness With Recall: A Descriptive, Survey-Based, Cohort Study.** *Anesthesia and analgesia*
Bombardieri, A. M., Mathur, S., Soares, A., Sharma, A., Ben Abdallah, A., Wildes, T. S., Avidan, M. S.
2019; 129 (5): 1291-1297
- **An Observational Study of Cerebral Blood Flow Velocity Evaluation in the Prone Position During Posterior Lumbar Surgery.** *Anesthesia and analgesia*
Bombardieri, A. M., Beckman, J., Urban, M., Go, G., De Gaudio, A. R., Girardi, F. P., Ma, Y., Memtsoudis, S. G.
2019; 129 (2): 487-492
- **A comparison of two different concentrations and infusion rates of ropivacaine in perineural infusion administered at the same total dose for analgesia after foot and ankle surgery: a randomized, double blinded, controlled study.** *Minerva anesthesiologica*
Bombardieri, A. M., Maalouf, D. B., Kahn, R. L., Ma, Y., Bae, J. J., Wukovits, B., Lee, A., Jules-Elysee, K. M., De Gaudio, A. R., Liguori, G. A.
2019; 85 (2): 139-147
- **An Observational Study of Cerebral Blood Flow Velocity During Hypotensive Epidural Anesthesia.** *Anesthesia and analgesia*
Bombardieri, A. M., Sharrock, N. E., Ma, Y., Go, G., Drummond, J. C.
2016; 122 (1): 226-33
- **Does limb preconditioning reduce pain after total knee arthroplasty? A randomized, double-blind study.** *Clinical orthopaedics and related research*
Memtsoudis, S. G., Stundner, O., Yoo, D., Gonzalez Della Valle, A., Boettner, F., Bombardieri, A. M., Jules-Elysee, K., Poultides, L., Ma, Y., Sculco, T. P.
2014; 472 (5): 1467-74
- **Pulmonary circulatory changes after bilateral total knee arthroplasty during regional anesthesia.** *Journal of clinical anesthesia*
Bombardieri, A. M., Memtsoudis, S. G., Go, G., Ma, Y., Sculco, T., Sharrock, N.
2013; 25 (1): 4-8
- **Comparative utility of centrally versus peripherally transduced venous pressure monitoring in the perioperative period in spine surgery patients.** *Journal of clinical anesthesia*
Bombardieri, A. M., Beckman, J., Shaw, P., Girardi, F. P., Ma, Y., Memtsoudis, S. G.
2012; 24 (7): 542-8
- **The effect of low versus high tidal volume ventilation on inflammatory markers in healthy individuals undergoing posterior spine fusion in the prone position: a randomized controlled trial.** *Journal of clinical anesthesia*
Memtsoudis, S. G., Bombardieri, A. M., Ma, Y., Girardi, F. P.
2012; 24 (4): 263-9
- **Mortality of patients with respiratory insufficiency and adult respiratory distress syndrome after surgery: the obesity paradox.** *Journal of intensive care medicine*
Memtsoudis, S. G., Bombardieri, A. M., Ma, Y., Walz, J. M., Chiu, Y. L., Mazumdar, M.
2011; 27 (5): 306-11