Sebastian Cohn

sebastian.cohn@northwestern.edu | sebastian-cohn.com

EDUCATION

Northwestern University, Chicago, IL Jul 2022-Present

M.D./Ph.D. candidate in Medicine and Biomedical Engineering (expected Jun 2030)

University of Pittsburgh, Pittsburgh, PA Apr 2022

B.S. in Neuroscience; Chemistry minor

Additional coursework in mathematics and biomedical engineering

RESEARCH

Markl Lab (Radiology) Jul 2024-Present

Peer-reviewed publications

- Fan L, Davó-Jiménez M, Benefield BC, Beydoun N, Dushfunian D, Cohn S, et al. Cardiovascular MRI–based Biventricular Perfusion Assessment in Two Patients with Chronic Thromboembolic Pulmonary Hypertension Undergoing Pulmonary Thromboendarterectomy. Radiology: Cardiothoracic Imaging. 2025 Dec;7(6):e250296. doi:10.1148/ryct.250296.
- Dushfunian D, Cohn S, Berhane H, Markl M. 4D Flow MRI of the Thoracic Aorta. Radiology: Cardiothoracic Imaging. 2025 Aug;7(4):e240532. doi:10.1148/ryct.240532.

Submitted manuscripts

- Cohn S, Weiss EK, Mehta CK, Markl M, Allen BD. Automated 4D Flow MRI-Based Dominant Entry Tear Detection and Risk Mapping in Descending Aortic Dissection. Manuscript submitted to Radiology: Cardiothoracic Imaging; 2026.
- Cohn S, Weiss E, Roy S, Markl M, Allen BD. Flap-Referenced Curved Planar 4D Flow MRI for Tear Visualization in Aortic Dissection. Manuscript submitted to Journal of Cardiovascular Magnetic Resonance; 2026.

Submitted abstracts

- Cohn S, Roy S, Markl M, Allen BD, Mehta C. Wall Shear Stress Distribution and Aortic Growth After Hemiarch Repair for Type A Dissection. AATS 107th Annual Meeting; 2027.

Conference presentations

- Roy S, Cohn S, Allen BD, Mansukhani NA. Utilizing 4D Flow MRI Hemodynamic Evaluation to Guide Management of Type B Aortic Dissection. SCVS 54th Annual Symposium; 2027.
- Cohn S, Weiss E, Roy S, Markl M, Allen BD. Flap-Referenced Curved Planar 4D Flow MRI for Tear Visualization in Aortic Dissection. SCMR 30th Annual Scientific Sessions; 2027.
- Ma S, Cohn S, Rigsby C, Johnson E, Chinkers M, Markl M, Robinson J. Regional Velocity, Kinetic Energy, and Energy Loss Rate in Pediatric Heart Transplant Recipients: A 4D Flow MRI Study. SCMR 30th Annual Scientific Sessions; 2027.
- Cohn S, Weiss E, Mehta C, Markl M, Allen B. Automated Entry Tear Localization and Spatial Risk Mapping in Aortic Dissection Using 4D Flow MRI. RSNA 112th Scientific Assembly and Annual Meeting; 2026.
- Cohn S, Weiss E, Mehta C, Markl M, Allen B. Automated 4D Flow MRI Detection and Spatial Risk Mapping of Dominant Entry Tears in Aortic Dissection. SMRA 38th Annual International Meeting; 2026.
- Cohn S, Weiss E, Mehta C, Markl M, Allen B. Automated 4D Flow MRI Detection of Dominant Entry Tears for Aortic Dissection Risk Assessment. NASCI 2026 Annual Meeting; 2026.
- Nguyen KA, Gersak B, Snyder M, Medina M, Cohn S, Malaisrie SC. Expansion of the Novel Supra-Annular Perceval Bentall (SUPERB): The First Ten Patients. Heart Valve Disease Forum 2026; 2026.
- Dong W, Apostolidis C, Johnson E, Dehadrai A, Sun E, Allen B, Sieren M, Frydrychowicz A, Cohn S, Oten S, Markl M. Automatic Aortic Segmentation and Diameter Quantification Using Deep Learning. SCCT 21st Annual Scientific Meeting; 2026.
- Cohn S, Weiss E, Mehta C, Apostolidis C, Dong W, Markl M, Allen B. Automated Extraction of False Lumen Flow Dynamics in Aortic Dissection Using 4D Flow MRI. 2026 ISMRM & ISMRT Annual Meeting & Exhibition; 2026.
- Berhane H, Johnson E, Cohn S, Allen B, Markl M. Deep-Learning Based Highly Sub-Sampled 2-Point Velocity Encoding 4D flow MRI. 2026 ISMRM & ISMRT Annual Meeting & Exhibition; 2026.
- Cohn S, Weiss E, Mehta C, Markl M, Allen B. Automated Extraction of False Lumen Flow Dynamics in Aortic Dissection Using 4D Flow MRI Correlates with False Lumen Ejection Fraction. SCMR 29th Annual Scientific Sessions; 2026.
- Apostolidis C, Johnson EMI, Berhane H, Dushfunian D, Sun E, Cohn S, Pfister CJ, Allen BD, Katsaggelos AK, Markl M. Fully Automated AI-Driven Quantification of Thoracic Aorta Dimensions from Contrast-Enhanced MRA. SCMR 29th Annual Scientific Sessions; 2026.

- Cohn S, Dong W, Allen B, Markl M. Deep Learning Image-to-Image Translation from CEMRA to CTA via Conditioned Diffusion. SMRA 37th Annual International Meeting; 2025.
- Cohn S, Berhane H, Johnson E, Allen BD, Markl M. Highly AI Accelerated 4D Flow MRI of the Aorta: Network Performance and Impact on Quantification of Aortic Wall Shear Stress. USNCCM18; 2025.
- Apostolidis C, Johnson E, Berhane H, Dushfunian D, Cohn S, Allen BD, Katsaggelos AK, Markl M. AI-Driven Quantification of Aortic Diameters from Contrast-Enhanced MRA of the Thoracic Aorta. 2025 ISMRM & ISMRT Annual Meeting & Exhibition; 2025.

Huang Lab (Neuroscience) Jun 2020-Apr 2022

Peer-reviewed publication

- Ofoma H, Cheaney B II, Brown NJ, Lien BV, Himstead AS, Choi EH, Cohn S, Campos JK, Oh MY. Updates on techniques and technology to optimize external ventricular drain placement: a review of the literature. Clinical Neurology and Neurosurgery. 2022;213:107126. doi:10.1016/j.clineuro.2022.107126.

Conference presentations

- Cohn S, Huang C. Variability Suppression in a Neural Network Model. MathFest [University of Pittsburgh]; 2021.
- Cohn S, Huang C. Variability Suppression in a Neural Network Model. Neuroscience Club Symposium [University of Pittsburgh]; 2021.

Thesis

- Senior Honors Thesis.

Strick Lab (Neuroscience) Sep 2019-Jun 2020

WORK AND LEADERSHIP

Business Manager, Neuroscience Club Sep 2019-May 2022
Personal Care Attendant Feb 2019-Mar 2020

TEACHING ASSISTANT

Theoretical Neuroscience (Dr. Albanna) Jan 2022-May 2022
Brain and Behavior (Dr. Albanna) Aug 2020-Dec 2020
Research in Behavioral Neuroscience (Dr. Stricker) Jan 2020-May 2020
Brain and Behavior (Dr. Stricker) Aug 2019-Dec 2019

AWARDS

- First Place, Potchen-Passariello Award (Clinical Science Stream), Society for Magnetic Resonance Angiography (SMRA), 2026
- Northwestern MSTP Heller Scholarship
- Pitt Chancellor's Undergraduate Teaching Fellowship
- Pitt Honors College Scholarship
- Volunteer of the Month Award (SOY Elementary)
- Pitt Summer Tuition Assistance Award
- Pitt Tuition Assistance Award

ADDITIONAL SKILLS

- Coding: MATLAB and Python
- Fluent in Spanish

PATENT APPLICATIONS

- **Fen-Map: System and Method for Detecting, Mapping, and Quantifying Hemodynamically Active Inter-Region Fenestrations**
  Lead inventor. Provisional patent application filed; Northwestern University's technology transfer office is pursuing a nonprovisional application.