

# Patrick Vaughan Heindel, MD, MPH

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## EDUCATION

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- 2021 – 2023 Harvard T.H. Chan School of Public Health, Boston, MA  
*Master of Public Health*
- 2014 – 2018 Keck School of Medicine of the University of Southern California, Los Angeles, CA  
*Doctor of Medicine*
- 2008 – 2012 University of Maryland, College Park, MD  
*Bachelor of Science in Psychology and Neuroscience*

## POSTDOCTORAL TRAINING

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- 2025 – 2027  
(*anticipated*) Beth Israel Deaconess Medical Center, Boston, MA  
*Fellow, Vascular Surgery*
- 2021 – 2023 National Institutes of Health T32  
Harvard-Longwood Research Training in Vascular Surgery, Boston, MA  
*Research Fellow*
- 2021 – 2023 Center for Surgery and Public Health  
Brigham and Women's Hospital / Harvard Medical School, Boston, MA  
*Research Fellow*
- 2018 – 2025 Brigham and Women's Hospital, Boston, MA  
*Intern and Resident, General Surgery*

## LICENSURE AND CERTIFICATION

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- 2026 Diplomate, American Board of Surgery, General Surgery (Certificate #077357)
- 2021 Physician Full License, Commonwealth of Massachusetts (License #287551)

## RESEARCH AND CLINICAL INTERESTS

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Robotic vascular surgery | Aortic disease | Hemodialysis access | Peripheral artery disease | Causal inference for comparative effectiveness and safety of vascular disease treatment strategies | Pharmacoepidemiology | Clinical data science and machine learning | Cardiovascular outcomes research

## PEER-REVIEWED ARTICLES

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47 publications, 15 first-author

1. **Heindel P**, Marcaccio C. A blind spot: Rethinking ocular carotid symptoms. *Journal of Vascular Surgery*. 2026;83;(5):1379–1380. doi:10.1016/j.jvs.2025.12.337.
2. **Heindel P**, Darling J, Guetter CR, Schermerhorn M, Stangenberg L. Deep vein arterialization for chronic limb-threatening ischemia: From PROMISE to practice. *The Journal of Cardiovascular Surgery*. 2026. doi:10.23736/S0021-9509.26.13624-6.
3. **Heindel P**, Stangenberg L. Robotics and the Future of Minimally Invasive Vascular Surgery. *Annals of Surgery*. 2026. doi:10.1097/SLA.0000000000007041.
4. Ujueta F, Henkin S, Biswas M, Mustapha A, Behrooz L, Gonzalez A, **Heindel P**, Brathwaite S, Alabi O. Multidisciplinary management of peripheral artery disease. *Seminars in Vascular Surgery*. 2025;38;(4):360–367. doi:10.1053/j.semvascsurg.2025.08.003.
5. Cruz M, Fitzgibbon JJ, Sampong A-A, **Heindel P**, Holden-Wingate LR, Hentschel DM, Ozaki CK, Billings F, Vlassakov K, Hussain MA. Safety of uninterrupted anticoagulation use in patients undergoing hemodialysis access creation with regional anesthesia: A research report. *Regional Anesthesia and Pain Medicine*. 2025;rapm-2025-106773. doi:10.1136/rapm-2025-106773.
6. Manchella MK, Appah-Sampong A, Ruan M, Fitzgibbon J, **Heindel P**, Secemsky E, Hentschel DM, Ozaki CK, Hussain MA. Longitudinal outcomes of forearm versus upper arm arteriovenous fistulas. *Journal of vascular surgery*. 2025;82;(3):1048–1057.e1. doi:10.1016/j.jvs.2025.05.021.
7. Fitzgibbon JJ, Ruan M, **Heindel P**, Appah-Sampong A, Dey T, Khan A, Hentschel DM, Ozaki CK, Hussain MA. Predicting long-term patency of radiocephalic arteriovenous fistulas with machine learning and the PREDICT-AVF web app. *Scientific reports*. 2025;15;(1):19203. doi:10.1038/s41598-025-04310-y.
8. Appah-Sampong A, Balaji A, Casey JH, Kotturu N, Montano D, Manchella M, Bacare B, Fitzgibbon JJ, **Heindel P**, Dey T, Bikdeli B, Hussain MA. A scoping review of electronic phenotyping methodologies used to identify peripheral artery disease in observational studies. *Vascular Medicine (London, England)*. 2025;1358863X251328671. doi:10.1177/1358863X251328671.
9. Fitzgibbon JJ, Appah-Sampong A, **Heindel P**, Holden-Wingate C, Ruan M, Dey T, Hentschel DM, Ozaki CK, Hussain MA. Regional and Center-Based Variation in Arteriovenous Fistula Placement as a First-Time Hemodialysis Access. *Journal of Vascular Surgery*. 2025;S0741-5214(25)00987-5. doi:10.1016/j.jvs.2025.04.027.
10. Rafaqat W, Panossian VS, Yi A, **Heindel P**, Abiad M, Ilkhani S, Heyman A, Garvey S, Anderson GA, Sanchez SE, Herrera-Escobar JP, Hwabejire JO. Long-term functional recovery after rib fractures: The impact of frailty. *The Journal of Trauma and Acute Care Surgery*. 2025;98;(3):452–459. doi:10.1097/TA.0000000000004489.
11. **Heindel P**, Dey T, Fitzgibbon JJ, Mamdani M, Hentschel DM, Belkin M, Ozaki CK, Hussain MA. Predicting recurrent interventions after radiocephalic arteriovenous fistula creation with machine learning and the PREDICT-AVF web app. *The journal of vascular access*. 2025;26;(1):202–210. doi:10.1177/11297298231203356.
12. Kong NW, Kim JM, Krawisz AK, **Heindel P**, Tale A, Song Y, Weinstein JL, Hussain MA, Secemsky EA. Outcomes Following Arteriovenous Fistula Creation in Medicare Beneficiaries With End-Stage Kidney Disease. *The American Journal of Cardiology*. 2025;234;79–86. doi:10.1016/j.amjcard.2024.10.006.

## PEER-REVIEWED ARTICLES, CONTINUED

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13. Mosarla RC, **Heindel PV**, Hussain MA, Schermerhorn M, Kuno T, D’Oria M, Li S, Secemsky EA. Utilization and Outcomes Associated With Intravascular Ultrasound During Abdominal and Thoracic Endovascular Aortic Interventions in the United States in the Contemporary Era (2016-2023). *Circulation: Cardiovascular Interventions*. 2025;18;(1):e014332. doi:10.1161/CIRCINTERVENTIONS.124.014332.
14. **Heindel P**, Fitzgibbon JJ, Secemsky E, Bhatt DL, Al-Omran M, Verma S, Almaghlouth IA, Madenci A, Hussain MA. Colchicine for cardiovascular and limb risk reduction in Medicare beneficiaries with peripheral artery disease: Emulation of target trials. *European Heart Journal Open*. 2024;4;(4):oeae062. doi:10.1093/ehjopen/oeae062.
15. Fitzgibbon JJ, **Heindel P**, Abdou M, Goudreau B, Dieffenbach BV, Aicher B, Menard MT. Contemporary outcomes of surgical decompression for functional popliteal entrapment syndrome. *Journal of vascular surgery*. 2024;79;(6):1412–1419. doi:10.1016/j.jvs.2024.01.202.
16. Fitzgibbon JJ, **Heindel P**, Appah-Sampong A, Holden-Wingate C, Hentschel DM, Mamdani M, Ozaki CK, Hussain MA. Temporal trends in hemodialysis access creation during the fistula first era. *Journal of Vascular Surgery*. 2024;79;(6):1483–1492.e3. doi:10.1016/j.jvs.2024.02.020.
17. Feliz JD, **Heindel P**, Fitzgibbon JJ, Ozaki CK, Gravereaux E, Nguyen LL, Menard M, Belkin M, Hussain MA. Descriptive Analysis of Amputation-Free Survival After First Time Infra-Inguinal Bypass Occlusion. *Journal of Surgical Research*. 2024;300;263–271. doi:10.1016/j.jss.2024.05.010.
18. **Heindel P**, Fitzgibbon JJ, Secemsky EA, Belkin M, Ozaki CK, Hussain MA. Evaluating the Effectiveness of Systemic Heparin During Arteriovenous Fistula Creation by Emulating a Target Trial. *American Journal of Epidemiology*. 2024;kwae098. doi:10.1093/aje/kwae098.
19. **Heindel P**, Fitzgibbon JJ, McKie K, Goudreau B, Dieffenbach BV, Aicher BO, Belkin M, Farber A, Menard MT, Hussain MA. Real-World Vein Mapping Practice Patterns Before Endovascular Treatment of Limb Ischemia. *Journal of Surgical Research*. 2024;301;62–70. doi:10.1016/j.jss.2024.05.011.
20. Shimoda T, D’Oria M, Kuno T, **Heindel P**, Lepidi S, Hussain MA, Takagi H, Secemsky EA. Comparative Effectiveness of Intravascular Ultrasound versus Angiography in Abdominal and Thoracic Endovascular Aortic Repair: Systematic Review and Meta-Analysis. *The American Journal of Cardiology*. 2024. doi:10.1016/j.amjcard.2024.05.017.
21. Fitzgibbon JJ, **Heindel P**, Hentschel DM, Ozaki CK, Hussain MA. Contemporary outcomes of distal radial artery ligation for access related hand ischemia. *The journal of vascular access*. 2023;11297298231195910. doi:10.1177/11297298231195910.
22. Fitzgibbon JJ, **Heindel P**, Feliz JD, Rouanet E, Wu W, Huynh C, Hentschel DM, Belkin M, Ozaki CK, Hussain MA. Staged autogenous to prosthetic hemodialysis access creation strategy to maximize forearm options. *Journal of Vascular Surgery*. 2023;77;(6):1788–1796. doi:10.1016/j.jvs.2023.02.002.
23. **Heindel P**, Feliz JD, Fitzgibbon JJ, Rouanet E, Belkin M, Hentschel DM, Ozaki CK, Hussain MA. Comparative effectiveness of bovine carotid artery xenograft and polytetrafluoroethylene in hemodialysis access revision. *The Journal of Vascular Access*. 2023;112972982311706. doi:10.1177/11297298231170654.
24. Ordoobadi AJ, Wickard A, **Heindel P**, Raykar N, Masiakos PT, Anderson GA. Quantifying Pediatric Gun Violence by Location, Time of Day, and Day of Week. *Journal of Pediatric Surgery*. 2023. doi:10.1016/j.jpedsurg.2023.11.002.
25. Spitzer SA, Vail DG, **Heindel P**, Dey T, Cooper Z, Salim A, Jarman MP. Gentrification as a Factor in the Incidence of Firearm Injuries. *JAMA Surgery*. 2023;158;(11):1152–1158. doi:10.1001/jamasurg.2023.3939.
26. Etheridge JC, **Heindel PV**, Paneitz DC, Kurth T. Probe deeper on intravascular ultrasound for blunt thoracic aortic injury. *Journal of Vascular Surgery*. 2022;76;(2):608–609. doi:10.1016/j.jvs.2022.02.062.

## PEER-REVIEWED ARTICLES, CONTINUED

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27. **Heindel P**, Dieffenbach BV, Freeman NLB, McGinagle KL, Menard MT. Central Concepts for Randomized Controlled Trials and Other Emerging Trial Designs. *Seminars in Vascular Surgery*. 2022;35;(4):424–430. doi:10.1053/j.semvascsurg.2022.10.004.
28. **Heindel P**, Fitzgibbon JJ, Feliz JD, Hentschel DM, Burke SK, Al-Omran M, Bhatt DL, Belkin M, Ozaki CK, Hussain MA. Evaluating National Guideline Concordance of Recurrent Interventions after Radiocephalic Arteriovenous Fistula Creation. *Journal of Vascular Surgery*. 2022. doi:10.1016/j.jvs.2022.12.017.
29. **Heindel P**, Dey T, Feliz JD, Hentschel DM, Bhatt DL, Al-Omran M, Belkin M, Ozaki CK, Hussain MA. Predicting radiocephalic arteriovenous fistula success with machine learning. *NPJ digital medicine*. 2022;5;(1):160. doi:10.1038/s41746-022-00710-w.
30. **Heindel P**, Yu P, Feliz JD, Hentschel DM, Burke SK, Al-Omran M, Bhatt DL, Belkin M, Ozaki CK, Hussain MA. Radiocephalic Arteriovenous Fistula Patency and Use. *Annals of Surgery Open*. 2022;3;(3):e199–e199. doi:10.1097/as9.000000000000199.
31. **Heindel P**, Dieffenbach BV, Sharma G, Belkin M, Ozaki CK, Hentschel DM. Contemporary outcomes of a “snuffbox first” hemodialysis access approach in the United States. *Journal of Vascular Surgery*. 2021;74;(3):947–956. doi:10.1016/j.jvs.2021.01.069.
32. **Heindel P**, Ordoobadi A, Moheb ME, Serventi-Gleeson J, Garvey S, Heyman A, Patel N, Sanchez S, Kaafarani HMA, Escobar JH, Salim A, Nehra D. Patient Reported Outcomes 6-12 months after Isolated Rib Fractures: A Non-Trivial Injury Pattern. *The journal of trauma and acute care surgery*. 2021;92;(2):277–286. doi:10.1097/ta.0000000000003451.
33. Kip P, Sluiter TJ, Moore JK, Hart A, Ruske J, O’Leary J, Jung J, Tao M, MacArthur MR, **Heindel P**, Jong A de, Vries MR de, Burak MF, Mitchell SJ, Mitchell JR, Ozaki CK. Short-Term Pre-Operative Protein Caloric Restriction in Elective Vascular Surgery Patients: A Randomized Clinical Trial. *Nutrients*. 2021;13;(11):4024. doi:10.3390/nu13114024.
34. Schellenberg M, Benjamin E, Inaba K, **Heindel P**, Biswas S, Mooney JL, Demetriades D. When Is It Safe to Start Pharmacologic Venous Thromboembolism Prophylaxis After Pelvic Fractures? A Prospective Study From a Level I Trauma Center. *Journal of Surgical Research*. 2021;258:272–277. doi:10.1016/j.jss.2020.08.077.
35. Schellenberg M, Ruiz NS, Cheng V, **Heindel P**, Roedel EQ, Clark DH, Inaba K, Demetriades D. The Impact of Seat Belt Use in Pregnancy on Injuries and Outcomes After Motor Vehicle Collisions. *Journal of Surgical Research*. 2020;254:96–101. doi:10.1016/j.jss.2020.04.012.
36. Schellenberg M, Owattanapanich N, Cremonini C, **Heindel P**, Anderson GA, Clark DH, Demetriades D, Inaba K. Shotgun Wounds: Nationwide Trends in Epidemiology, Injury Patterns, and Outcomes from US Trauma Centers. *The Journal of Emergency Medicine*. 2020. doi:10.1016/j.jemermed.2020.02.021.
37. Schellenberg M, Inaba K, **Heindel P**, Forestiere MJ, Clark D, Matsushima K, Lam L, Demetriades D. The diagnostic dilemma of shotgun injuries. *European Journal of Trauma and Emergency Surgery*. 2019;1–6. doi:10.1007/s00068-019-01168-4.
38. Schellenberg M, Inaba K, Biswas S, **Heindel P**, Benjamin E, Strumwasser A, Matsushima K, Lam L, Demetriades D. When is It Safe to Start VTE Prophylaxis After Blunt Solid Organ Injury? A Prospective Study from a Level I Trauma Center. *World Journal of Surgery*. 2019;43;(11):2797–2803. doi:10.1007/s00268-019-05096-7.
39. Lessans S, Lassiter CB, Carozzi V, **Heindel P**, Semperboni S, Oggioni N, Chiorazzi A, Thompson C, Wagner M, Holden J, Rahn E, Sweatt JD, Cavaletti G, Renn CL, Dorsey SG. Global Transcriptomic Profile of Dorsal Root Ganglion and Physiological Correlates of Cisplatin-Induced Peripheral Neuropathy. *Nursing research*. 2018;1. doi:10.1097/nnr.0000000000000338.

40. Murgai R, D’Oro A, **Heindel P**, Schoell K, Barkoh K, Buser Z, Wang JC. Incidence of Respiratory Complications Following Lumbar Spine Surgery. *International Journal of Spine Surgery*. 2018;12;(6):718–724. doi:10.14444/5090.
41. Compton E, **Heindel P**, Formanek B, Schoell K, Buser Z, Wang JC. Perioperative Invasive Vascular Catheterization Associated With Increased Risk of Postoperative Infection in Lumbar Spine Surgery: An Analysis of 114,259 Patient Records. *Clinical spine surgery*. 2018;1. doi:10.1097/bsd.0000000000000751.
42. Schoell K, Wang C, D’Oro A, **Heindel P**, Lee L, Wang JC, Buser Z. Depression Increases the Rates of Neurological Complications and Failed Back Surgery Syndrome in Patients Undergoing Lumbar Spine Surgery. *Clinical spine surgery*. 2018;1. doi:10.1097/bsd.0000000000000730.
43. Schellenberg M, Inaba K, Cheng V, Bardes JM, **Heindel P**, Matsushima K, Benjamin E, Demetriades D. Independent predictors of survival after traumatic atlanto-occipital dissociation. *The journal of trauma and acute care surgery*. 2018;85;(2):375–379. doi:10.1097/ta.0000000000001953.
44. Tamai K, Wang C, **Heindel P**, Pahpolak P, Buser Z, Wang JC. Perioperative Catheter Use as a Risk Factor for Surgical Site Infection After Cervical Surgery: An Analysis of 39,893 Patients. *SPINE*. 2018;44;(3):1–E161. doi:10.1097/brs.0000000000002790.
45. Matsushima K, Piccinini A, Schellenberg M, Cheng V, **Heindel P**, Strumwasser A, Benjamin E, Inaba K, Demetriades D. Effect of door-to-angioembolization time on mortality in pelvic fracture: Every hour of delay counts. *The journal of trauma and acute care surgery*. 2018;84;(5):1–692. doi:10.1097/ta.0000000000001803.
46. Nazareth A, D’Oro A, Liu JC, Schoell K, **Heindel P**, Jakoi A, Hah R, Wang JC, Buser Z. Risk Factors for Postoperative Venous Thromboembolic Events in Patients Undergoing Lumbar Spine Surgery. *Global spine journal*. 2018;9;(4):409–416. doi:10.1177/2192568218797094.
47. **Heindel P**, Tuchman A, Hsieh PC, Pham MH, D’Oro A, Patel NN, Jakoi AM, Hah R, Liu JC, Buser Z, Wang JC. Reoperation Rates After Single-level Lumbar Discectomy. *SPINE*. 2017;42;(8):E496–E501. doi:10.1097/brs.0000000000001855.

## PEER-REVIEWED BOOK CHAPTERS

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**Heindel P**, Ozaki CK. The Snuffbox Arteriovenous Fistula for Contemporary Hemodialysis Access. In: Eskandari MK, editor. *Current Vascular Surgery*. Northwestern University; 2022.

**Heindel P**, Seshadri A. Diagnosis and Management of Shock in the Injured Patient. In: Melnitchouk N, editor. *GMKA*. Global Medical Knowledge Alliance; 2022. Available from: <https://gmka.org/diagnosis-and-management-of-shock-in-the-injured>

## INVITED LECTURES

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**Heindel P**. Embracing Type 2 Fun. Brigham and Women’s Hospital Department of Surgery Final Service Conference, June 12, 2025; Boston, MA.

**Heindel P**. Innovation on the Bleeding Edge: Past, Present, and Future of Innovation in Vascular Surgery. Brigham and Women’s Hospital Department of Surgery Grand Rounds, February 12, 2025; Boston, MA.

**Heindel P**. Data Science as a Framework for Clinical Research. Brigham and Women’s Hospital Department of Surgery Grand Rounds, June 28, 2023; Boston, MA.

**Heindel P**. Data Science as a Framework for Clinical Research. Invited lecture, Beth Israel Deaconess Medical Center Smith Center for Outcomes Research in Cardiology, February 13, 2023; Boston, MA.

**Heindel P.** Machine Learning in Clinical Research. Brigham and Women's Hospital Center for Surgery and Public Health: Data Core Lecture Series, 2022; Boston, MA.

**Heindel P,** Rouanet E, Smink D. Peer-to-Peer Surgical Coaching Quality Improvement Initiative to Enhance the Performance of Surgeons-in-Training. Brigham and Women's Hospital Surgery Grand Rounds, 2019; Boston, MA.

## **ABSTRACTS AND PRESENTATIONS**

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**Heindel P,** Luo J, Kernodle A, Majumdar M, Thangappan K, Menard MT, Swerdlow N, Hussain MA, Wang J. Frontiers In Oncovascular Surgery: Robotic Transabdominal Inferior Retroperitoneal Approach (rTIRA) For Leiomyosarcoma Resection In The Aortocaval Space. The New England Society for Vascular Surgery 52nd Annual Meeting, Sept. 26-26, 2025; Providence, RI.

Fitzgibbon JJ, Appah-Sampong A, **Heindel P,** Zheng X, Mao J, Goodney P, Columbo J, Secemsky E, Bikdeli B, Piazza G, Chaar CIO, Hentschel DM, Ozaki CK, Hussain MA. High Flow Arteriovenous Hemodialysis Access Drives Increased Cardiac Complications. The New England Society for Vascular Surgery 52nd Annual Meeting, Sept. 26-26, 2025; Providence, RI.

Manchella MK, Appah-Sampong A, Ruan M, Fitzgibbon JJ, **Heindel P,** Secemsky E, Hentschel DM, Ozaki CK, Hussain MA. Longitudinal Outcomes of Forearm Versus Upper Arm Arteriovenous Fistulas and the Impact of Hospital Volume: A Pooled Analysis of Prospective Multicenter Clinical Trials. Society for Vascular Surgery Vascular Annual Meeting, June 4-7, 2025; New Orleans, LA.

Fitzgibbon JJ, Appah-Sampong A, **Heindel P,** Holden-Wingate C, Ruan M, Dey T, Hentschel DM, Ozaki CK, Hussain MA. Regional and Center-Based Variation in Arteriovenous Fistula Placement as a First-Time Hemodialysis Access. New England Society for Vascular Surgery 51st Annual Meeting, October 25-27, 2024; Portland, ME.

Fitzgibbon JJ, Ruan M, **Heindel P,** Appah-Sampong A, Dey T, Khan A, Hentschel DM, Ozaki CK, Hussain MA. Predicting Long-Term Patency of Radiocephalic Arteriovenous Fistulas with Machine Learning and the PREDICT-AVF Web App. Vascular Access Society of the Americas Vascular Access for Hemodialysis Symposium, May 16-18, 2024; Atlanta, GA.

Rafaqat W, Yi A, Ghaddar K, **Heindel P,** Abiad M, Ilkhani S, Anderson GA, Sanchez SE, Herrera-Escobar JP, Hwabejire JO. Long-term Functional Recovery after Rib Fractures: The Impact of Frailty. Chest Wall Injury Summit, April 11-13, 2024; Salt Lake City, UT.

Mosarla R, **Heindel P,** Hussain MA, D'Oria M, Li S, Secemsky EA. Intravascular ultrasound during endovascular aortic interventions is associated with improved early outcomes: an analysis of utilization and outcomes among us patients. American College of Cardiology, April 6-8, 2024; Atlanta, GA.

Kim J, Kong N, Krawisz AK, **Heindel P,** Tale AP, Song Y, Weinstein J, Hussain MA, Secemsky EA. Racial and sex disparities following arteriovenous fistula creation among Medicare beneficiaries with end stage kidney disease. American College of Cardiology, April 6-8, 2024; Atlanta, GA.

Fitzgibbon JJ, **Heindel P,** Appah-Sampong A, Hentschel DM, Mamdani M, Ozaki CK, Hussain MA. Temporal trends in hemodialysis access creation in the fistula first era: are rates of forearm arteriovenous fistulas increasing? 48th Annual Meeting of the Southern Association for Vascular Surgery, Jan 24-27, 2024; Scottsdale, AZ.

## ABSTRACTS AND PRESENTATIONS, CONTINUED

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**Heindel P**, Fitzgibbon JJ, Secemsky E, Bhatt DL, Al-Omran M, Verma S, Almaghlouth IA, Madenci A, Hussain MA. Long-term colchicine for cardiovascular and limb risk reduction in peripheral artery disease. American Heart Association Scientific Sessions, Nov 11-13, 2023; Philadelphia, PA.

Shimoda T, D’Oria M, Kuno T, Takagi H, **Heindel P**, Hussain MA, Secemsky EA. Comparative Effectiveness of Intravascular Ultrasound versus Angiography in Abdominal and Thoracic Endovascular Aortic Repair: Systematic Review and Meta-Analysis. American Heart Association Scientific Sessions, Nov 11-13, 2023; Philadelphia, PA.

**Heindel P**, Fitzgibbon JJ, McKie K, Goudreau B, Dieffenbach BV, Aicher B, Belkin M, Farber A, Menard MT, Hussain MA. Contextualizing BEST-CLI with real-world vein mapping practice patterns before endovascular treatment of chronic limb-threatening ischemia. 50th Anniversary Meeting of the New England Society for Vascular Surgery, Oct 6-8, 2023; Boston, MA.

Fitzgibbon JJ, **Heindel P**, Goudreau B, Aicher B, Dieffenbach BV, Menard MT. Contemporary outcomes of surgical decompression for functional popliteal entrapment syndrome. 50th Anniversary Meeting of the New England Society for Vascular Surgery, Oct 6-8, 2023; Boston, MA.

**Heindel P**, Dey T, Fitzgibbon JJ, Hentschel DM, Belkin M, Ozaki CK, Hussain MA. Guideline-concordant arteriovenous fistula care with the PREDICT-AVF web app. Canadian Society for Vascular Surgery Annual Meeting, Sep 8-9, 2023; Québec City, QC, Canada.

**Heindel P**, Fitzgibbon JJ, Secemsky E, Bhatt DL, Al-Omran M, Almaghlouth IA, Hussain MA. Colchicine for cardiovascular risk reduction in lower extremity peripheral artery disease. European Society of Cardiology Congress, Aug 25-28, 2023; Amsterdam, Netherlands.

**Heindel P**, Dey T, Fitzgibbon JJ, Hentschel DM, Belkin M, Ozaki CK, Hussain MA. Predicting recurrent interventions after radiocephalic arteriovenous fistula creation with machine learning and the PREDICT-AVF web app. Society for Vascular Surgery Vascular Annual Meeting, June 14-17, 2023; National Harbor, MD.

Fitzgibbon JJ, **Heindel P**, Hentschel DM, Ozaki CK, Hussain MA. Contemporary Outcomes of Distal Radial Artery Ligation for Access Related Hand Ischemia. Society for Vascular Surgery Vascular Annual Meeting, June 14-17, 2023; National Harbor, MD.

Balaji A, **Heindel P**, Fitzgibbon F, Hussain MA. Lack of Consensus for the Definition of Peripheral Artery Disease in Healthcare Data. 18th Annual Academic Surgical Congress, February 7-9, 2023; Houston, TX.

**Heindel P**, Fitzgibbon JJ, Secemsky E, Ozaki CK, Hussain MA. Effectiveness and Safety of Intravenous Heparin During Radiocephalic Arteriovenous Access Creation: A Target Trial Emulation. 47th Annual Meeting of the Southern Association for Vascular Surgery, January 18-21, 2023; Rio Grande, Puerto Rico.

**Heindel P**, Feliz JD, Appah-Sampong A, Cerecedo-Lopez C, Yates EF, Dey T, Hussain MA. Modeling to Improve Identification of Peripheral Artery Disease Cohorts from Administrative Data. American Medical Informatics Society Annual Symposium, November 5-9, 2022; Washington, DC.

Holden-Wingate C, **Heindel P**, Hart A, Feliz JD, Rouanet E, Rydberg N, Chamberlain R, Hussain MA, Hentschel DM, Ozaki CK. Auscultatory Machine Learning for Early Detection of Hemodialysis Access Dysfunction. Brigham Research Institute Annual Discover Brigham Showcase, November 1, 2022; Boston, MA.

## ABSTRACTS AND PRESENTATIONS, CONTINUED

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Ahmed N, Williams G, Feliz JD, **Heindel P**, Hussain MA. Risk Profile of Patients with Premature Peripheral Artery Disease: An Interim Analysis Using The Surgical Premature Peripheral Artery Disease Evaluation (SPPADE) Registry. Medical College of Georgia Medical Student Research Symposium, 2022; Augusta, GA.

**Heindel P**, Dieffenbach BV, Hussain MA. Endovascular Repair of Complex Acute Type B Aortic Dissection with Malperfusion. 49th Annual Meeting of the New England Society for Vascular Surgery, October 14-16, 2022; Newport, RI.

**Heindel P**, Feliz JD, Hentschel DM, Al-Omran M, Burke S, Bhatt DL, Belkin M, Ozaki CK, Hussain MA. Recurrent Interventions after Radiocephalic Arteriovenous Fistula Creation: A Post Hoc Analysis of Randomized Controlled Trials. 49th Annual Meeting of the New England Society for Vascular Surgery, October 14-16, 2022; Newport, RI.

Feliz JD, **Heindel P**, Ozaki CK, Gravereaux E, Nguyen LL, Menard MT, Belkin M, Hussain MA. Fate of the Occluded Infra-Inguinal Bypass: Natural History and Factors Contributing to Amputation-Free Survival. 49th Annual Meeting of the New England Society for Vascular Surgery, October 14-16, 2022; Newport, RI.

**Heindel P**, Dey T, Feliz JD, Hentschel DM, Al-Omran M, Bhatt DL, Belkin M, Ozaki CK, Hussain MA. A Novel Machine Learning Approach to Predicting Successful Radiocephalic Arteriovenous Fistula Use. Society for Vascular Surgery Vascular Annual Meeting, June 15-18, 2022; Boston, MA.

Feliz JD, **Heindel P**, Bhatt D, Belkin M, Hussain MA. Surgical Premature Peripheral Artery Disease Evaluation (SPPADE) Registry: Protocol for a Multicenter Retrospective Open Clinical Registry. Society for Vascular Surgery Vascular Annual Meeting, June 15-18, 2022; Boston, MA.

Cerecedo-Lopez CD, Feliz JD, **Heindel P**, Dieffenbach BV, Menard MT, Belkin M, Hussain MA. Covered vs. Bare-Metal Stents for Chronic Mesenteric Ischemia: Systematic Review and Meta-Analysis. Society for Vascular Surgery Vascular Annual Meeting, June 15-18, 2022; Boston, MA.

**Heindel P**, Feliz JD, Rouanet E, Cerecedo-Lopez C, Belkin M, Hentschel DM, Hussain MA, Ozaki CK. Bovine Carotid Artery Xenografts in Hemodialysis Access Revision. Vascular Access Society of the Americas Annual Symposium, June 9-11, 2022; Charleston, SC.

**Heindel P**, Feliz JD, Rouanet E, Cerecedo-Lopez C, Belkin M, Hussain MA, Ozaki CK. A Staged Autogenous/Prosthetic Hemodialysis Access Creation Strategy to Maximize Upper Extremity Options. Vascular Access Society of the Americas Annual Symposium, June 9-11, 2022; Charleston, SC.

**Heindel P**, Dey T, Feliz JD, Hentschel DM, Bhatt DL, Al-Omran M, Belkin M, Ozaki CK, Hussain MA. Radiocephalic Arteriovenous Fistula Use: Insights from the PATENCY-1 and PATENCY-2 Randomized Controlled Trials. Strandness Symposium Vascular Forum, March 20-24, 2022; Maui, HI.

**Heindel P**, Rouanet E. Rheo: A Mobile-Device Enabled System for The Early Detection of Dialysis Access Dysfunction. Harvard Business School New Venture Competition Semi-Finals, March 11, 2022; Boston, MA.

**Heindel P**, Welten VM, Irani JL, Aliaj A, Bleday R, Melnitchouk N, Goldberg JE. Robotic Approach for Organ Invasive Rectal Cancer. 63rd Annual Meeting of the Society for Surgery of the Alimentary Tract, May 21-24, 2022; San Diego, CA. Abstract in: *Gastroenterology*. 2022;162(7):S-1329. doi: 10.1016/S0016-5085(22)63890-3

Ordoobadi AJ, Wickard A, **Heindel P**, Raykar N, Masiakos PT, Anderson GA. Safer in School: Timing and Location of Firearm Injuries in School-Age Children. 17th Annual Academic Surgical Congress, February 1-3, 2022; Orlando, FL.

**Heindel P**, Cao T, Beatty J, Doherty GM, Ozaki CK. Creation of a Surgical Overflow Service to Offload Asymmetric Workforce Needs during the SARS-CoV-2 Pandemic. 68th Annual Meeting of the Massachusetts Chapter of the American College of Surgeons, December 4, 2021; Boston, MA.

**Heindel P**, El Moheb M, Ordoobadi A, Garvey S, Serventi-Gleeson J, Heyman A, Patel N, Sanchez S, Kaafarani HMA, Herrera-Escobar J, Salim A, Nehra D. Long-term functional and patient reported outcomes after isolated rib fractures. 80th Annual Meeting of the American Association for the Surgery of Trauma, Sept 29-Oct 2, 2021; Atlanta, GA.

**Heindel P**, Dieffenbach BV, Sharma G, Belkin M, Ozaki CK, Hentschel DM. Contemporary Outcomes of a "Snuffbox First" Hemodialysis Access Approach in the United States. The American Society of Diagnostic and Interventional Nephrology Annual Meeting. February 17-21, 2021; Online conference during pandemic.

Schellenberg M, Benjamin E, Inaba K, **Heindel P**, Biswas S, Mooney JL, Demetriades D. When Is It Safe to Start VTE Prophylaxis After Pelvic Fractures? A Prospective Study from a Level I Trauma Center. Western Surgical Association 127th Scientific Session. Nov 2-5, 2019; Las Vegas, NV.

Schellenberg M, Inaba K, **Heindel P**, Benjamin E, Strumwasser A, Matsushima K, Lam L, Demetriades D. When is it Safe to Start VTE Prophylaxis After Blunt Solid Organ Injury? A Prospective Study from a Level I Trauma Center. 77th Annual Meeting of the American Association for the Surgery of Trauma, Sep 26-29, 2018; San Diego, CA.

Matsushima K, **Heindel P**, Schellenberg M, Demetriades D. Intraperitoneal Damage Control for Pelvic Fracture Bleeding. American College of Surgery, Clinical Congress, 2017; San Diego, CA.

**Heindel P**, D'Oro A, Schoell K, Buser Z, Wang JC. Perioperative Invasive Vascular Catheterization Associated with Increased Risk of Postoperative Infection in Lumbar Spine Surgery. American Association of Neurological Surgeons Annual Meeting, Apr 22-26, 2017; Los Angeles, CA. *Global Spine Journal*. 2017;7(2):63S. doi:10.1177/2192568217708577.

**Heindel P**, Tuchman A, Hsieh PC, Pham MH, D'Oro A, Patel NN, Jakoi AM, Hah R, Liu JC, Buser Z, Wang JC. Reoperation Rates Following Single-Level Lumbar Discectomy. North American Spine Society Annual Meeting, Oct 26-29, 2016; Boston, MA.

## AWARDS AND HONORS

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2023 American Heart Association Jay D. Coffman Early Career Investigator Award, Finalist

2022 Section Winner, Poster Competition, SVS Vascular Annual Meeting

2022 Best Resident Presentation, Vascular Access Society of the Americas, Runner-up

2022 New Venture Competition Semi-Finalist (Rheo), Harvard Business School

2022	Strandness Symposium Vascular Forum Travel Scholarship
2021	Southern Association for Vascular Surgery Travel Scholarship
2021	Lea Carpenter du Pont Fellowship Education Grant
2021 – 2023	National Research Service Award (T32), National Institutes of Health
2018	Sagar Gupta Scholarship, Keck SOM
2018	The Guardian’s Endowed Merit Scholarship, Keck SOM
2018	Graduation with Distinction in Research, Keck SOM
2017	Alpha Omega Alpha Honor Medical Society
2017	ARCS Foundation Scholarship for Leadership in Science
2017	Walker Foundation Scholarship Award, Keck SOM
2017	MEDSTARS USC Surgical Research Competition, Finalist
2016	Most Meritorious Distinction, Medical Student Research Forum, Keck SOM
2016	ARCS Foundation Scholarship for Leadership in Science
2015, 2016	Robert Wright Foundation Medical Scholarship
2015	Summer Research Fellowship Award, Keck School of Medicine of USC
2012	Phi Beta Kappa Honors Society

**PROFESSIONAL SOCIETY MEMBERSHIP**

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- American Heart Association, Member
- Society for Vascular Surgery, Candidate Member
- American College of Surgeons, Resident Member
- Vascular Access Society of the Americas, Member

## **SERVICE, LEADERSHIP, AND TEACHING**

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- 2025 – Present      Teaching Conference and Journal Club Organizer, Division of Vascular Surgery, BIDMC  
Organize and facilitate weekly vascular surgery division journal club and teaching conferences.
- 2024 – Present      Member, Early Career Committee of the Council on Peripheral Vascular Disease, AHA  
Nominated to serve on the Fellow-In-Training & Early Career Committee of the Council on Peripheral Vascular Disease of the American Heart Association.
- 2020 – Present      Academic Journal Reviewer  
Contributed ad hoc peer reviews for academic journals including *Journal of Vascular Surgery*, *Clinical Journal of the American Society of Nephrology*, *Injury Prevention*, *Cardiovascular Diagnosis and Therapy*, *npj Digital Medicine*, and *Vascular and Endovascular Surgery*.
- 2018 – Present      Clinical Teaching Fellow, Harvard Medical School  
Teaching of medical students and general surgery residents at Beth Israel Deaconess Medical Center and Brigham and Women’s Hospital, including simulation lab and anatomy lab instruction.
- 2018 – 2025          Program Evaluation Committee Member, BWH Surgery Residency  
Nominated by co-residents to participate in quarterly meetings with resident leaders, key surgical faculty, and administrators to improve the quality of resident education and experience.
- 2015 – 2018          Admissions Committee Interviewer, USC Keck  
Interviewed prospective medical students for admission.
- 2011 – 2014          Volunteer Instructor, Team River Runner 501(c)(3), Walter Reed NMMC  
Whitewater kayaking instruction for wounded veterans and their families

## **REFERENCES**

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Available upon request.