

Wren Warren – Curriculum Vitæ

Address	240 Kelton St Apt. 2, Allston MA, 02134	Mobile Phone	(207) 607-1518
		E-mail	warrenandros@gmail.com

Personal Profile

I am a data scientist with significant experience in medical and especially neurological data, who desires to reshape the way we analyze medical data by using machine learning techniques to develop better holistic models of neurological disease onset and recovery. I enjoy problem-solving and exploring alternative and innovative techniques for analyzing, modeling, and predicting data. I also believe strongly in ethical and socially-conscious use of artificial intelligence and machine learning, recognizing that biased programmers may create biased algorithms that portray a majority-dominant perspective without adequate input from marginalized communities.

Education

2021-2024	Masters of Science - Northeastern University, Massachusetts Data Science <i>Current</i>
2018-2020	Non-Degree - Harvard University, Massachusetts Pre-Med Post-Baccalaureate Program, Extension School
2017-2018	Non-Degree - Northeastern University, Massachusetts Pre-Med Post-Baccalaureate Program, College of Professional Studies
2012-2016	Bachelors of Science - Tufts University, Massachusetts Major in Cognitive and Brain Science Minor in Computer Science Tufts Varsity Crew, 2012 - 2016

Research Experience

I have experienced many different aspects of the research process, including designing and running psychology experiments, analyzing data, and running and analyzing research MRIs, managing complicated datasets and databases, and performing statistical analyses, as well as writing and editing submissions to the IRB for multiple research projects.

7/2021 - Present	J. Philip Kistler Stroke Research Center , Massachusetts General Hospital, 175 Cambridge Street Suite 300, Boston <i>Clinical Data Manager</i>
-------------------------	--

- All duties and knowledge of previous role
- Managing all aspects of intensive data projects such as the upgrading of databases to new structures, completely reorganizing databases to be more stable and more helpful to researchers
- Training and managing coordinators on projects involving the processing and transmission of data
- Developing new systems and operating procedures for the center to further ensure proper data handling by all researchers.
- Independently managing IRB protocols and coordinating data use agreements for many Primary Investigators.
- Creating extensive documentation, converting old databases to future-forward formats, training successor.

Technologies: Microsoft SQL Server, syngo MR XA30, syngo MR VE11C, Microsoft Access, Python, REDCap, Microsoft Excel, Bash Scripting, Total Commander, Synedra, Analyze 11.0

**7/2017 -
7/2021**

J. Philip Kistler Stroke Research Center, Massachusetts General Hospital, 175 Cambridge Street Suite 300, Boston, MA 02114
Neuroimaging Clinical Research and Data Coordinator II

- Building on previous role, in addition managing multiple databases, handling all data queries requested from the research center by multiple PIs, labs, and sites.
- Assisting in the formatting and analysis of neurovascular data for numerous research projects resulting in published papers.
- Personal handling of in-house data metrics, financial statistic reporting, feasibility surveys, IRB amendments and Data Use Agreements.
- Maintaining and building databases, training other database users and data managers on the data structure, the special circumstances of multiple databases, general good data maintenance practices and specific variable nuances and definitions.
- Training and managing coordinators on reading CTs for hemorrhagic outcome markers, and coordinating the download and codification of clinical CTs and MRIs.
- Performing research MRIs on research subjects in 1.5T, 3T and 7T environments, with visual stimuli, hypercapnia tasks, and blood pressure reduction tasks.

Technologies: syngo MR VE11C, Microsoft Access, Python, REDCap, Microsoft Excel, Bash Scripting, Total Commander, Synedra, Analyze 11.0

**7/2016 -
7/2017**

J. Philip Kistler Stroke Research Center, Massachusetts General Hospital, 175 Cambridge Street Suite 300, Boston, MA 02114
Neuroimaging Clinical Research Coordinator I

- Trained to read Computed Tomography and Magnetic Resonance imaging for intracerebral hemorrhage and acute ischemic stroke measurements and risk factors, including hemorrhage volume, white matter disease scoring, brain atrophy scale, infarct presence, microhemorrhage presence, and location of stroke.
- Completed 1600-subject case analysis of subject data and imaging measurements for a hemorrhagic stroke cohort

Technologies: syngo MR VE11C, Microsoft Access, REDCap, Microsoft Excel, Synedra, Analyze 11.0, Epic Hyperspace

2/2015 - 5/2016 **Memory and Cognition Laboratory**, Tufts University, 490 Boston Avenue, Somerville, MA, United States
Research Assistant
 Senior Poster on Memory and Cognition of Assorted Word Groups
Technologies: SPSS, QuickBasic

Work Experience

7/2021 - Present **J. Philip Kistler Stroke Research Center**, Massachusetts General Hospital, 175 Cambridge Street Suite 300, Boston, MA, United States
Clinical Data Manager

- Creation of a conclusive Data Management Guidelines document detailing all aspects related to data operations of my position.
- Migrating a series of databases into SQL back-end formats to stabilize data and allow for more security.
- Reorganization of a samples database from multiple possible IDs for one subject down to one ID per subject in a specific table, in order to prevent the possibility of a sample being doubled, including a full analysis of sample matching.

7/2021 - Present **J. Philip Kistler Stroke Research Center**, Massachusetts General Hospital, 175 Cambridge Street Suite 300, Boston, MA, United States
Clinical Data Manager

- Creation of a conclusive Data Management Guidelines document detailing all aspects related to data operations of my position.
- Migrating a series of databases into SQL back-end formats to stabilize data and allow for more security.
- Reorganization of a samples database from multiple possible IDs for one subject down to one ID per subject in a specific table, in order to prevent the possibility of a sample being doubled, including a full analysis of sample matching.

7/2016 - 7/2021 **J. Philip Kistler Stroke Research Center**, Massachusetts General Hospital, 175 Cambridge Street Suite 300, Boston, MA, United States
Clinical Research Coordinator

- Maintaining a database of MRI and CT scans of patients with hemorrhagic stroke
- Searching for, retrieving, and performing the file conversions of MRI and CTs to prepare the scans for advanced analyses
- Performing quantitative analysis of CT/MRI scans obtained from patients enrolled in our hospital based as well as multicenter studies
- Storing the 3D lesion maps, recording the volumetric analysis results in our database
- Maintaining and writing scan processing scripts
- Reviewing CT scan analysis with interns
- Assisting in processing of imaging data from multi-center studies
- Updating and maintaining SOPs, guidelines and data forms for MGH and multi-center studies
- Assisting with informed consent of patients eligible for neuroimaging based clinical trials
- Assisting with drafting project and grant applications
- Searching medical literature and retrieving journal articles and other references
- Maintaining and overseeing regulatory documentation for MGH and multi-center studies
- Taking call approximately one weekend per month and 5 weeknights per month to help cover off hour study enrollments and procedures
- Coordinating and/or performing study procedures including but not limited to interviews, sample processing, phlebotomy and other protocol-specific clinical skills
- Assisting with other research-related administrative tasks as needed
- Maintaining IRB files and communication with IRB for specific studies
- Coordinating clinical research data collection, analysis, reporting and organization
- Developing programs to check the integrity of the data, including range, error, and logic checks
- Assisting staff with system-related questions or problems.
- Collaborating with study investigators and research fellows on the design of data queries to retrieve data and generate reports for projects and abstracts
- Developing simple user interfaces for data entry, workflow management and querying
- Assisting with designing and running regular reports on the quantity of data and quality in the data management system.
- Ensuring accuracy and completeness of data files and subject research files and provide support documents detailing file organization
- Assisting study coordinators and project/program managers with data-related amendments to the IRB including development and execution of Data Use Agreements
- Providing technical and research assistance to staff members with regard to both general technology and database-specific questions and troubleshooting

2011 -
2013

University of Maine 4-H Camp and Learning Center at Tanglewood, 1 Tanglewood Road, Lincolnville, ME, U
Day Camp Educator

- Structured and facilitated learning of children aged 4 – 8 in a hands-on, natural environment.
- Guided children to learn to solve problems as a group and on their own, including group challenges, investigations into natural phenomena, and artistic projects.
- Worked as a senior member of the learning team to devise strategies to promote learning and fun in nature.

Computer Software Skills

■ Programming Languages

C++, Python, HTML, CSS, QuickBasic, Microsoft VBA, SQL, R, SAS, LaTeX

■ Applications

Microsoft Office, Analyze 11.0, Synedra, Epic Hyperspace, Total Commander, DICOM Query/Retrieve Server, SPSS

Bibliography

1. Abramson JR, Castello JP, Keins S, Kourkoulis C, Rodriguez-Torres A, Myserlis EP, Alabsi H, **Warren AD**, Henry JQA, Gurol ME, Viswanathan A, Greenberg SM, Towfighi A, Skolarus L, Anderson CD, Rosand J, Biffi A. Biological and Social Determinants of Hypertension Severity Before vs After Intracerebral Hemorrhage. *Neurology*. 2022 Mar 29;98(13):e1349-e1360. doi: 10.1212/WNL.0000000000200003
2. Biffi A, Teo KC, Castello JP, Abramson JR, Leung IYH, Leung WCY, Wang Y, Kourkoulis C, Myserlis EP, **Warren AD**, Henry J, Chan KH, Cheung RTE, Ho SL, Anderson CD, Gurol ME, Viswanathan A, Greenberg SM, Lau KK, Rosand J. Impact of Uncontrolled Hypertension at 3 Months After Intracerebral Hemorrhage. *J Am Heart Assoc*. 2021 Jun;10(11):e020392. doi: 10.1161/JAHA.120.020392
3. Castello JP, Teo KC, Abramson JR, Keins S, Takahashi CE, Leung IYH, Leung WCY, Wang Y, Kourkoulis C, Pavlos Myserlis E, **Warren AD**, Henry J, Chan KH, Cheung RTE, Ho SL, Gurol ME, Viswanathan A, Greenberg SM, Anderson CD, Lau KK, Rosand J, Biffi A. Long-Term Blood Pressure Variability and Major Adverse Cardiovascular and Cerebrovascular Events After Intracerebral Hemorrhage. *J Am Heart Assoc*. 2022 Mar 15;11(6):e024158. doi: 10.1161/JAHA.121.024158
4. Das AS, Gokcal E, Regenhardt RW, **Warren A**, Schwab K, Viswanathan A, Greenberg SM, Rost NS, Rosand J, Schwamm LH, Gurol ME. Atrial Fibrillation is Associated With Severe Basal Ganglia Perivascular Spaces [WP238]. *Stroke* 2020; 51(Suppl_1): AWP238
5. De Kort AM, Kuiperij HB, Marques TM, Jäkel L, van den Berg E, Kersten I, van Berckel-Smit HEP, Duering M, Stoops E, Abdo WF, Rasing I, Voigt S, Koemans EA, Kaushik K, **Warren AD**, Greenberg SM, Brinkmalm G, Terwindt GM, Wermer MJH, Schreuder FHBM., Klijn CJM, Verbeek MM. Decreased Cerebrospinal Fluid Amyloid β 38, 40, 42, and 43 Levels in Sporadic and Hereditary Cerebral Amyloid Angiopathy. *Ann Neurol*. 2023;93: 1173-1186. <https://doi.org/10.1002/ana.26610>
6. Dowlathshahi D, Morotti A, Al-Ajlan FS, Boulouis G, **Warren AD**, Petrcich W, Aviv RI, Demchuk AM, Goldstein JN. Interrater and Intrarater Measurement Reliability of Noncontrast Computed Tomography Predictors of Intracerebral Hemorrhage Expansion. *Stroke*. 2019;50(5):1260-1262. doi:10.1161/STROKEAHA.118.024050
7. Fotiadis P, van Veluw S, Salat D, **Warren A**, Grill S, Schwab K, Zollei L, Viswanathan A, Gurol ME, Greenberg SM. Loss of Gray-White Contrast in Cerebral Amyloid Angiopathy: An in-vivo and Ex-Vivo Exploratory Approach [TMP109]. *Stroke* 2019; 50(Suppl_1): ATMP109
8. Fotiadis P, Pasi M, Charidimou A, **Warren AD**, Schwab KM; Alzheimer's Disease Neuroimaging Initiative, Rosand J, van der Grond J, van Buchem MA, Viswanathan A, Gurol ME, Greenberg SM. Decreased Basal Ganglia Volume in Cerebral Amyloid Angiopathy. *J Stroke*. 2021 May;23(2):223-233. doi: 10.5853/jos.2020.04280

9. Freeze WM, Zanon Zotin MC, Scherlek AA, Perosa V, Auger CA, **Warren AD**, van der Weerd L, Schoemaker D, Horn MJ, Gurol ME, Gokcal E, Bacskai BJ, Viswanathan A, Greenberg SM, Reijmer YD, van Veluw SJ. Corpus callosum lesions are associated with worse cognitive performance in cerebral amyloid angiopathy. *Brain Commun.* 2022 Apr 26;4(3):fcac105. doi: 10.1093/braincomms/fcac105
10. Gokcal E, Horn MJ, van Veluw SJ, Frau-Pascual A, Das AS, Pasi M, Fotiadis P, **Warren AD**, Schwab K, Rosand J, Viswanathan A, Polimeni JR, Greenberg SM, Gurol ME. Lacunes, Microinfarcts, and Vascular Dysfunction in Cerebral Amyloid Angiopathy. *Neurology.* 2021 Mar 23;96(12):e1646-e1654. doi: 10.1212/WNL.0000000000011631
11. Horn MJ, Gokcal E, Becker AJ, Das AS, **Warren AD**; Alzheimer Disease Neuroimaging Initiative, Schwab K, Goldstein JN, Biffi A, Rosand J, Polimeni JR, Viswanathan A, Greenberg SM, Gurol ME. Cerebellar atrophy and its implications on gait in cerebral amyloid angiopathy. *J Neurol Neurosurg Psychiatry.* 2022 May 9;jnnp-2021-328553. doi: 10.1136/jnnp-2021-328553
12. Li Q, **Warren AD**, Qureshi AI, Morotti A, Falcone GJ, Sheth KN, Shoamanesh A, Dowlathshahi D, Viswanathan A. Ultra-Early Blood Pressure Reduction Attenuates Hematoma Growth and Improves Outcome in Intracerebral Hemorrhage. *Ann Neurol.* 2020. doi:10.1002/ana.2579
13. Li Q, Zotin MC, **Warren AD**, Ma Y, Gurol ME, Goldstein JN, Greenberg SM, Charidimou A, Raposo N, Viswanathan A. CT-visible convexity subarachnoid hemorrhage is associated with cortical superficial siderosis and predicts recurrent ICH. *Neurology.* 2020; doi:10.1212/wnl.0000000000011052
14. Morotti A, Boulouis G, Charidimou A, Li Q, Poli L, Costa P, De Giuli V, Leuci E, Mazzacane F, Busto G, Arba F, Brancaloni L, Giacomozzi S, Simonetti L, Laudisi M, Micieli G, Cavallini A, Candeloro E, Gamba M, Magoni M, **Warren AD**, Anderson CD, Gurol ME, Biffi A, Viswanathan A, Casetta I, Fainardi E, Zini A, Pezzini A, Padovani A, Greenberg SM, Rosand J, Goldstein JN. Hematoma Expansion in Intracerebral Hemorrhage With Unclear Onset. *Neurology.* 2021 May 11;96(19):e2363-e2371. doi: 10.1212/WNL.0000000000011895
15. Morotti A, Boulouis G, Charidimou A, Poli L, Costa P, Giuli V, Leuci E, Mazzacane F, Busto G, Arba F, Brancaloni L, Giacomozzi S, Simonetti L, Laudisi M, Cavallini A, Gamba M, Magoni M, Cornali C, Fontanella MM, **Warren AD**, Gurol EM, Viswanathan A, Gasparotti R, Casetta I, Fainardi E, Zini A, Pezzini A, Padovani A, Greenberg SM, Rosand J, Goldstein JN. Imaging markers of intracerebral hemorrhage expansion in patients with unclear symptom onset. *Int J Stroke.* 2022 Jan 4;17474930211068662. doi: 10.1177/17474930211068662
16. Morotti A, Boulouis G, Nawabi J, Charidimou A, Pasi M, Schlunk F, Shoamanesh A, Katsanos A, Mazzacane F, Busto G, Arba F, Brancaloni L, Giacomozzi S, Simonetti L, **Warren AD**, Laudisi M, Cavallini A, Gurol ME, Viswanathan A, Zini A, Casetta I, Fainardi E, Greenberg SM, Padovani A, Rosand J, and Goldstein JN. Association between hematoma expansion severity and outcome and its interaction with baseline intracerebral hemorrhage volume. *Neurology.* 2023;101(16). doi:10.1212/wnl.0000000000207728
17. Morotti A, Boulouis G, Nawabi J, Li Q, Charidimou A, Pasi M, Schlunk F, Shoamanesh A, Katsanos AH, Mazzacane F, Busto G, Arba F, Brancaloni L, Giacomozzi S, Simonetti L, **Warren AD**, Laudisi M, Cavallini A, Gurol ME, Viswanathan A, Zini A, Casetta I, Fainardi E, Greenberg SM, Padovani A, Rosand J, Goldstein JN. Using noncontrast computed tomography to improve prediction of intracerebral hemorrhage expansion. *Stroke.* 2023;54(2):567-574. doi:10.1161/strokeaha.122.041302
18. Pasi M, Pongpitakmetha T, Charidimou A, Singh SD, Tsai H, Xiong L, Boulouis G, **Warren AD**, Rosand J, Frosch MP, Viswanathan A, Gurol ME, Greenberg SM. Cerebellar Microbleed Distribution Patterns and Cerebral Amyloid Angiopathy. *Stroke.* 2019;50(7):1727-1733. doi:10.1161/STROKEAHA.119.024843
19. Pongpitakmetha T, Fotiadis P, Pasi M, Boulouis G, Xiong L, **Warren AD**, Schwab KM, Rosand J, Gurol ME, Greenberg SM, Viswanathan A, Charidimou A. Cortical superficial siderosis progression in cerebral amyloid angiopathy: Prospective MRI study. *Neurology.* 2020;94(17):e1853-e1865. doi:10.1212/WNL.0000000000009321
20. Singh SD, Pasi M, Schreuder FHBM, Morotti A, Senff JR, **Warren AD**, McKaig BN, Schwab K, Gurol ME, Rosand J, Greenberg SM, Viswanathan A, Klijn CJM, Rinkel GJE, Goldstein JN, Brouwers HB. Computed Tomography Angiography Spot Sign, Hematoma Expansion, and Functional Outcome in Spontaneous

Cerebellar Intracerebral Hemorrhage. Stroke. 2021 Aug;52(9):2902-2909. doi: 10.1161/STROKEAHA.120.033297

21. Su CM, **Warren A**, Kraus C, Macias-Konstantopoulos W, Zachrison KS, Viswanathan A, Anderson C, Gurol ME, Greenberg SM, Goldstein JN. Lack of racial and ethnic-based differences in acute care delivery in intracerebral hemorrhage. Int J Emerg Med. 2021 Jan 19;14(1):6. doi: 10.1186/s12245-021-00329-w
22. Teo KC, Keins S, Abramson JR, Leung WCY, Leung IYH, Wong Y, Yeung C, Kourkoulis C, **Warren AD**, Chan K, Cheung RTE, Ho S, Gurol ME, Viswanathan A, Greenberg SM, Anderson CD, Lau K, Rosand J, Biffi A. Blood pressure control targets and risk of cardiovascular and cerebrovascular events after intracerebral hemorrhage. Stroke. 2023;54(1):78-86. doi:10.1161/strokeaha.122.039709
23. van den Berg E, de Kort AM, Kersten I, Brinkmalm G, Johansson K, Marques T, Jäkel L, Gobom J, Stoops E, Portelius E, Gkanatsiou E, Abdo WF, Rasing I, Voigt S, Koemans EA, Kaushik K, **Warren AD**, Greenberg SM, Terwindt GM, Wermer MJH, Klijn CJM, FHBM, Zetterberg H, Blennow K, Kuiperij HB, M. Verbeek MM. Profiling amyloid- β peptides as diagnostic biomarkers for cerebral amyloid angiopathy. Alzheimers Dement. 2023;19(S15). doi:10.1002/alz.076080
24. **Warren AD**, Li Q, Schwab K, Greenberg SM, Viswanathan A, Rosand J, Gurol ME, Patel AB, Goldstein JN. External ventricular drain placement is associated with lower mortality after intracerebral hemorrhage with intraventricular hemorrhage. Int J Emerg Med. 2022;15(1). doi:10.1186/s12245-022-00450-4
25. Wilker EH, Mostofsky E, Fossa A, Koutrakis P, **Warren A**, Charidimou A, Mittleman MA, Viswanathan A. Ambient Pollutants and Spontaneous Intracerebral Hemorrhage in Greater Boston. Stroke. 2018 Oct 18;2764-2766. doi: 10.1161/STROKEAHA.118.023128. PMID: 30580707
26. Yogendrakumar V, Ramsay T, Fergusson D, Demchuk AM, Aviv RI, Rodriguez-Luna D, Molina CA, Silva Y, Dzialowski I, Kobayashi A, Boulanger J, Lum C, Gubitz G, Srivastava P, Roy J, Kase CS, Bhatia R, Hill ME, **Warren AD**, Anderson CD, Gurol ME, Greenberg SM, Viswanathan A, Rosand J, Goldstein JN, Dowlathshahi D. New and expanding ventricular hemorrhage predicts poor outcome in acute intracerebral hemorrhage. Neurology. 2019;93(9):e879-e888. doi:10.1212/WNL.0000000000008007

References

Name	Zora DiPucchio	Name	Joshua N. Goldstein
Company	J. Philip Kistler Stroke Research Center	Company	Massachusetts General Hospital
Position	Sr. Program Manager	Position	Co-Director, Center for Neurologic Emergencies
E-mail	ZDIPUCCHIO@mgh.harvard.edu	E-mail	JGOLDSTEIN@mgh.harvard.edu
Phone	(617) 726-7710	Phone	(617) 726-7710