

Andrew J. Zimolzak
Curriculum Vitae, February 6, 2026

Personal Information

Research address: **Home address:**

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zimolzak@bcm.edu

Birth date: -

Birthplace: -

Education

Michigan State University. 8/13/1998–5/3/2002.

150 Administration Building; East Lansing, MI 48824-0210.

BS in Biochemistry with High Honor. Member of the Honors College.

Washington University in St. Louis School of Medicine. 8/19/2002–5/6/2007.

Campus Box 8021, 660 S. Euclid; St. Louis, MO 63110.

MD.

University of Missouri-Columbia. 7/1/2007–6/30/2008.

MA419 Medical Sciences Building DC043.00; Columbia, MO 65212.

Internal medicine PGY 1.

Saint Louis University Hospital. 7/1/2008–6/30/2010.

3635 Vista Avenue, 14th Floor S, Desloge Towers; St. Louis MO 63110-0250.

Internal medicine PGY 2 and 3.

Harvard Medical School. 7/1/2011–5/30/2013.

25 Shattuck Street; Boston, MA 02115.

MMSc in Medical Informatics.

Professional Experience

Clinical informatician at the VA Center for Innovations in Quality, Effectiveness and Safety (IQuEST), and at the Baylor Institute for Clinical and Translational Research, 11/12/2018–present. **Assistant professor**, Baylor College of Medicine. I am a practicing physician with significant personal experience writing reusable **database, statistical, and machine learning** computer code for research. I unify large collections of fragmented data elements into clinically meaningful concepts, thus making diverse clinical research studies possible. This work is known by several names: *secondary use* of electronic health record data, *clinical research informatics*, or *phenotyping*. I interpret clinical language and systems for data pull engineers/analysts, or vice versa (interpreting technical language for clinical investigators). I access a data warehouse covering more than 20 million unique individuals, and billions of observations, from 1999 to the present, aggregated from 130 VA sites (but incompletely standardized/harmonized). Major projects include disseminating algorithms to detect missed laboratory test follow-ups, and clinical trials matching. I also work as a **teaching attending** on the VA hospitalist service, supervising house staff and students. Supervisors: Hardeep Singh, Fasiha Kanwal, Jessica Davila, Chris Amos, Andrew Caruso, Lindsey Gay.

Clinical informatician, Massachusetts Veterans Epidemiology Research and Information Center (MAVERIC), 10/20/2014–11/9/2018. **Assistant professor**, Boston University School of Medicine, 8/2016–11/2018, and reciprocal appointment as Lecturer, Harvard Medical School. My work enabled a **genomic precision medicine** platform and learning health system for cancer, as well as a 13,000-subject point of care, randomized **comparative effectiveness trial** of

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two antihypertensives. Developed (2016) a system to ensure **reusable phenotyping algorithms** for genomic association and other studies, still in use as of 2024. Personally exported and encrypted data from this system to the mirror system at Oak Ridge National Laboratory (2018). Served as **co-program-director** of the Big Data-Scientist Training Enhancement Program (BD-STEP) site in Boston, and as principal investigator on a study of genomic predictors of stage of lung cancer at presentation. Mentored an internal medicine resident, who helped me make a highly accurate **natural language processing classifier** of serum protein electrophoresis reports. Inpatient medicine **teaching attending** at the VA hospital. Supervisors (research): Nhan Do, Valmeek Kudesia, Mary Brophy, Louis Fiore. Clinical: Steven Simon, Jay Orlander, Anthony Breu.

Research collaborator, Massachusetts Institute of Technology, Laboratory for Computational Physiology, 12/6/2013–9/2016. Lead clinician on a project to develop a data-based definition of acute kidney injury, using records of 11,000 patients from MIMIC II, an open collection of intensive care unit data covering 8 years. Collaborated on writing and submitting a R25 grant. Professor: Leo Celi.

Research fellow, Children's Hospital Informatics Program, Intelligent Health Laboratory, 7/1/2011–1/31/2014. Analyzed pharmacy claims to develop predictive models of medication adherence. Used **SAS and logistic regression** to analyze ~ 300M claims from 61M individuals. Designed and wrote all code (2,000 lines in the final analysis). Pilot projects using multivariable adaptive regression splines, and Fourier spectral analysis. Coursework in **epidemiology, biostatistics, data mining, machine learning, and grant writing**, partially through Harvard School of Public Health Program in Clinical Effectiveness. Professor: Kenneth Mandl. Program director: Alexa McCray.

Urgent care physician, Harvard Vanguard Medical Associates, 10/15/2011–6/30/2018. Diagnose and treat outpatients with acute medical problems, e.g. infections, dehydration, sprains, abscesses, lacerations, pelvic conditions, initial management of fractures. Supervise nurse practitioners and physician assistants. Supervisor: David Meenan.

Internal medicine chief resident, Saint Louis University Hospital, 7/1/2010–6/30/2011. Managed and scheduled 130 residents. Academic appointment as instructor in internal medicine. Attended on inpatient & outpatient general medicine in university and VA hospitals. Accepted transfers, supervised and improved patient handoffs. Precepted medical students, ran morbidity/mortality and clinicopathologic conferences, and ~ 100 resident report conferences. Interviewed and helped select residency program applicants. Program director: Miguel Paniagua.

Research elective, 2/2007–4/2007. Association rule mining on a database of 12,000 outpatients and 40,000 diagnoses. Wrote Perl code to find associations between any given pair of diseases in a patient, and to output the strongest associations in an easily visualized format. Professor: Walton Sumner, Washington University in St. Louis.

Professorial assistant, 9/1998–5/2002. Used molecular biology and cell culture techniques to analyze factors leading to malignant transformation of human cells. Professor: J. Justin McCormick, Michigan State University.

Technology skills. Experience with **R** statistical programming, **Git** source code management, and **SQL** all since 2011; and with the **Python** programming language since 2013. Experience with **SAS** statistical programming 2011–2014. GitHub username: zimolzak (have written code involving topics such as a Twitter text generator, cryptography, satisfiability solving, celestial navigation, and Amazon Web Services tasks). Experience with the Perl programming language, Linux/UNIX, **L^AT_EX**, and GNU Emacs since 2001. Intermediate experience with audio, video, and photo equipment and editing. **Electronic medical records:** experience with Epic Hyperspace since 2009, CPRS/VistA since 2007, and 1 year experience with Cerner PowerChart.

Additional courses. *Machine Learning* (Coursera/Stanford, Andrew Ng, Octave language, 2011). *Intro to Theoretical Computer Science* (Udacity, Sebastian Wernicke, Python language, 2014). *Tackling the Challenges of Big Data* (edX/MIT, Daniela Rus, Sam Madden, Michael Stonebraker, 2/3/2015–3/17/2015). *Data Science Boot Camp* (Rice

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University, in-person, Chris Jermaine, Devika Subramanian: numpy, Jupyter, scikit-learn, 2019, 5 days). *Machine Learning with Python: From Linear Models to Deep Learning* (edX/MIT 6.86x, Regina Barzilay, Tommi Jaakkola: **numpy and pytorch** for RNNs, CNNs, etc., 2020, 11 weeks. Took 9600 words of notes with extensive mathematical notation and wrote around 2000 lines of code. In-class exercises average 95%, projects average 100%).

Grants

Senior/key personnel: **Consortium for Translational and Precision Health.** NCATS. 09/01/2024–07/31/2031. 1 UM1 TR004539-01A1. \$44.2 million. One of many senior/key personnel funded on this large, multi-institution Clinical and Translational Science Award.

Co-Investigator: **A Health Informatics Approach to Reduce Missed Opportunities for Barrett's Esophagus Screening.** American College of Gastroenterology. 07/01/2023–06/30/2026. Amount: \$450,000.

Co-Investigator: **Diagnostic Safety Center for Advancing E-triggers and Rapid Feedback Implementation (DIS-COVERI).** AHRQ R18. 10/01/2022–09/30/2026. 1 R18 HS029347-01. Amount: \$3,999,998. Drafted a large portion of the proposal and managed multiple steps in integrating sections, completing sections, and finalizing with administrators.

Completed

Co-Investigator: **Houston Patient Safety Center of Inquiry: Diagnosis Improvement Safety Center (DISCover).** VHA National Center for Patient Safety. 10/01/2022–09/30/2025. Amount: \$1,185,000.

Co-Investigator: **The Patient-Partnered Diagnostic Center of Excellence.** AHRQ R18. 10/01/2022–09/30/2026. 1 R18 HS029356-01. \$4,000,000.

Co-investigator: **Enhancing VA Implementation and Dissemination of Electronic Health Record Modernization through a National Collaborative Effort (EVIDENCE).** VA HSR&D Service-directed research. 10/2023–9/2025.

Co-Investigator: **An Electronic Trigger Tool to Detect Missed Opportunities for Barrett's Esophagus Screening.** Baylor College of Medicine, Department of Medicine Physician-Scientist/Investigator Faculty Development Award. 07/01/2022–06/30/2024. Amount: \$207,906.

Co-Investigator: **Measuring Missed Opportunities in the Diagnosis of Gastrointestinal Cancers.** Gordon and Betty Moore Foundation. 7/1/2022–12/31/2023. GBMF 11505. Amount: \$500,000 for 18 months.

Advisor: **Identifying current clinical care processes to reduce delays in colorectal cancer diagnoses.** Society to Improve Diagnosis in Medicine, DxQI Seed Grant Program. Lead: Disha Kumar, VA Chief Resident in Quality and Safety.

Co-Investigator: **Measuring and Improving the Safety of Test Result Follow-Up.** VA HSR&D. 10/2018–9/2023. I01 HX002439 / IIR 17-127.

Co-PI: **Safer Dx e-measures to reduce preventable delays in cancer diagnosis.** Gordon and Betty Moore Foundation. 11/2019–5/2021. GBMF 8838. Amount: \$520,162 for 18 months. Drafted the majority of the proposal.

Co-Investigator: **Application of Machine Learning to Enhance e-Triggers to Detect and Learn from Diagnostic Safety Events.** AHRQ. 09/30/19–09/29/2023. R01 HS027363-01. Amount: \$1,494,980.

Co-Investigator: **The Safer Dx Learning Lab: A Demonstration Project for Improving Diagnostic Safety.** Gordon and Betty Moore Foundation. 6/30/2017–5/31/2020. GBMF 5498. Amount: \$3,525,397 for 36 months.

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Teaching

Student Scholarship and Inquiry Project. 2023–present. Funded as faculty for a new curriculum component and course block, designed to promote hypothesis-driven medical student scholarship on a mentored project, with activities across all 4 years of medical school. Serving as a liaison between information technology and students, to construct an educational data warehouse extracted from local electronic health records, for use in student projects.

Mentoring (long-term contact)

Jennifer Sloane (informal). 2022–2025. Postdoctoral fellow in cognitive psychology. Mentored in clinical topics and VA data environment.

Theresa Nguyen (formal). 9/2021–2025. Fellow awarded Department of Medicine grant that includes me on mentorship team. Mentoring in VA data availability and predictive model application.

Paarth Kapadia (informal). 1/2020–2023. MD student at Baylor College of Medicine doing year-long research experience. Mentored in manuscript preparation, data analysis, regulatory compliance.

Nathanael Fillmore (formal). 2016–2017. Nonclinical PhD accepted to a VA advanced fellowship. As co-program director for BD-STEP, I was responsible for training all fellows regarding clinical topics, the data environment, and regulatory compliance. Hired full-time by VA in 2017, informal mentoring thereafter. Dr. Fillmore was later promoted to director of machine learning at the Boston VA clinical trials center.

Brett Johnson (formal). 2016–2017. BD-STEP fellow. Responsibilities: see *Fillmore* above. Hired full-time by VA in 2017, informal mentoring thereafter.

Justine Ryu (formal & informal). 7/2016 research elective, through 2020 publication. Internal medicine resident at Boston University. Mentored in exposure to machine learning techniques, journal submission, and revision.

Sahar Alkhairy (informal). 2014–2020. Undergraduate and graduate student in computer science and molecular biology at MIT. Mentored in research record keeping, clinical topics, journal submission, and revision.

Mentoring (short-term contact)

Adel Hassan (informal). 2023–2024. Medical student performing machine learning analyses. Mentored in clinical topics, VA data environment, scientific publication, and regulatory compliance.

Disha Kumar (informal). 7/2022–2023. Chief resident in quality and safety at VA hospital. Mentored in data retrieval and phenotyping strategies to identify inpatients with advanced cirrhosis, and missed follow-up of colorectal cancer screening.

Angela Wu (informal). 2022. Computer science graduate student performing machine learning and natural language processing analyses. Mentored in clinical topics, VA data environment, and regulatory compliance.

Freddie Peng (informal). 2021–2022. Chief resident in quality and safety. Mentored in data techniques to identify patients with cirrhosis.

Angela Rao (informal). Chief resident in quality and safety. Mentored in data techniques to measure usage of an inpatient diabetes treatment order set.

Max Yu (informal). 12/2021–2022. Computer science undergraduate coming on board to assist in analysis. Mentored in clinical topics, VA data environment, and regulatory compliance.

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Credentials and Memberships

American Board of Internal Medicine certified 8/10/2011, participating in MOC.
Clinical Informatics board-certified 1/1/2014 (ABPM), completed 2023 CCP, valid through 12/31/2029.
Texas full medical license 8/24/2018–present. No. R8850, exp 8/31/2026.
Massachusetts full medical license 7/20/2011–present. No. 249050 (inactive), exp 11/21/2027.
Missouri full medical license 6/25/2010–present. No. 2010020878, exp 1/31/2027
American Medical Informatics Association member 2011–present.
Early career physician council, Massachusetts American College of Physicians, 9/2011–2015.
USMLE: passed Step 1 6/2005, Step 2 CS 4/2007, Step 2 CK 4/2007, Step 3 5/2010.
ACLS and BLS certified (exp 2/29/2028).

Honors and Awards

JAMIA Editor's Choice, 2025, for paper entitled “Application of a digital quality measure for cancer diagnosis in Epic Cosmos.”
Most Creative Use of Tools, Baylor College of Medicine Datathon, April 2024. Project entitled “An exploration of optimism in medical record notes for pneumonia and associated patient length of stay.”
Best oral presentation of the conference, Society to Improve Diagnosis in Medicine, 10/2023. Title: “Machine Learning for Enhanced Electronic Trigger Detection of Diagnostic Errors.”
GME Poster award, MEDVAMC Education Day, 3/2023. “Increasing Usage of an Inpatient Insulin Order Set.”
Poster award, BCM House Staff Research Symposium, 2023. “Increasing Usage of an Inpatient Insulin Order Set.”
Best of the best oral abstracts, Society to Improve Diagnosis in Medicine, 10/2022. Title: “Implementation, validation, and mortality association of 2 cancer diagnosis digital quality measures.”
Most innovative use of data, Baylor College of Medicine Datathon, April 2022. Project entitled “The association of biased language in medical text with diagnostic error.”
Excellence in Collaboration, Baylor College of Medicine Datathon, October 2020. Project entitled “Understanding predictors of severe COVID-19 outcomes.” One of the few projects to achieve end-to-end success in identifying data elements, data extraction, analysis, and results. All analyses performed by me in essentially 24 hours.
Reviewers' Choice Abstract, American Society of Human Genetics Annual Meeting, 2017. Abstract entitled “Developing validated phenotypic cancer cohorts....”
Finalist, Surescripts 2014 Adherence Challenge. Member of a team selected as one of ten finalists. Primary responsibility for drafting the proposal. 8/15/2014–1/8/2015.
Third prize, patient safety & quality improvement category, 8/2010. American College of Physicians, Missouri Chapter Scientific Meeting, associate poster competition.
Tower Guard, 1999–2000. Service-oriented academic honor society for Michigan State University sophomores.
Distinguished Freshman Scholarship, Michigan State University. Competitive four-year full tuition scholarship awarded to 35 students out of the incoming class of about 10,000.

Publications

Hill MA, Haskell H, Dainty KN, et al. **Scoping review of patient and family engagement interventions in diagnosis: a paradox of too much, yet so little.** *BMJ Qual Saf*. Published online December 23, 2025. doi:10.1136/bmjqqs-2025-019145

Olson APJ, Sloane J, Zimolzak A, et al. **A framework for defining diagnostically challenging conditions identifiable through electronic algorithms.** *Diagnosis (Berl)*. Published online October 27, 2025. doi:10.1515/dx-2025-0034

Khalaf N, Ali B, Zimolzak A, et al. **Digital quality measure of potentially avoidable emergency presentations among patients with colorectal cancer.** *BMJ Qual Saf*. Published online October 9, 2025. doi:10.1136/bmjqqs-2025-0034

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Zimolzak AJ, Kapadia P, Upadhyay DK, *et al.* **Frequent Missed Opportunities for Earlier Diagnosis of Advanced-Stage Colorectal or Lung Cancer.** *JAMA Intern Med.* 2025;185(9):1102–1108.

Godwin KM, Grigoryan L, Thrift AP, *et al.* **A cluster randomized trial of a Multicomponent Clinical Care Pathway (MCCP) to improve MASLD diagnosis and management in primary care: study protocol.** *BMC Health Serv Res.* 2025;25(1):645.

Khalaf N, Ali B, Zimolzak AJ, *et al.* **Prevalence and Outcomes of Emergency Presentations of Colorectal Cancer in Veterans Affairs Health Care System.** *Dig Dis Sci.* 2025;70(1):177–190.

Vaghani V, Gupta A, Mir U, Wei L, Murphy DR, Mushtaq U, Sittig DF, Zimolzak AJ, Singh H. **Implementation of Electronic Triggers to Identify Diagnostic Errors in Emergency Departments.** *JAMA Intern Med.* 2025;185(2):143–151.

Zimolzak AJ, Khan SP, Singh H, Davila JA. **Application of a digital quality measure for cancer diagnosis in Epic Cosmos.** *J Am Med Inform Assoc.* 2025;32(1):227–229. Paper was selected as a *JAMIA* “Editor’s Choice” article.

Zubkoff L, Zimolzak AJ, Meyer AND, *et al.* **A Virtual Breakthrough Series Collaborative for Missed Test Results: A Stepped-Wedge Cluster-Randomized Clinical Trial.** *JAMA Netw Open.* 2024;7(10):e2440269. Published 2024 Oct 1.

Zimolzak AJ, Wei L, Mir U, *et al.* **Machine Learning to Enhance Electronic Detection of Diagnostic Errors.** *JAMA Netw Open.* 2024;7(9):e2431982. Published 2024 Sep 3.

Kapadia P, Zimolzak AJ, Upadhyay DK, *et al.* **Development and Implementation of a Digital Quality Measure of Emergency Cancer Diagnosis.** *J Clin Oncol.* 2024;42(21):2506–2515.

Honerlaw J, Ho YL, Fontin F, Gosian J, Maripuri M, Murray M, Sangar R, Galloway A, Zimolzak AJ, Whitbourne SB, Casas JP, Ramoni RB, Gagnon DR, Cai T, Liao KP, Gaziano JM, Muralidhar S, Cho K. **Framework of the Centralized Interactive Phenomics Resource (CIPHER) standard for electronic health data-based phenomics knowledgebase.** *J Am Med Inform Assoc.* 2024;31(5):1126–1134.

Murphy DR, Zimolzak AJ, Upadhyay DK, Wei L, Jolly P, Offner A, Sittig DF, Korukonda S, Rekha RM, Singh H. **Developing electronic clinical quality measures to assess the cancer diagnostic process.** *J Am Med Inform Assoc.* 2023 Aug 18;30(9):1526–1531.

Zimolzak AJ, Davila JA, Punugoti V, *et al.* **Lessons learned from an enterprise-wide clinical datathon.** *J Clin Transl Sci.* 2022;6(1):e125.

Meyer AND, Singh H, Zimolzak AJ, *et al.* **Cancer Evaluations During the COVID-19 Pandemic: An Observational Study Using National Veterans Affairs Data.** *Am J Prev Med.* 2022;63(6):1026–1030.

Zimolzak AJ, Singh H, Murphy DR, *et al.* (2022) **Translating electronic health record-based patient safety algorithms from research to clinical practice at multiple sites.** *BMJ Health Care Inform* 29(1):e100565.

Zimolzak AJ, Shahid U, Giardina T, Memon S, Mushtaq U, Zubkoff L, Murphy DR, Bradford A, Singh H. (2022) **Why Test Results Are Still Getting “Lost” to Follow-up: A Qualitative Study of Implementation Gaps.** *Journal of General Internal Medicine* 37(1):137–144. Published online 2021-04-27.

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Before 2022

Alkhairy S, Celi LA, Feng M, Zimolzak AJ. (2021) **Acute Kidney Injury Detection Using Refined and Physiological-Feature Augmented Urine Output.** Scientific Reports 11(1):19561.

Vassy JL, Gaziano JM, Green RC, Ferguson RE, Advani S, Miller SJ, Chun S, Hage AK, Seo SJ, Majahalme N, MacMullen L, Zimolzak AJ, Brunette CA. (2020) **Effect of Pharmacogenetic Testing for Statin Myopathy Risk vs Usual Care on Blood Cholesterol: A Randomized Clinical Trial.** JAMA Network Open 3(12):e2027092.

Ryu JH, Zimolzak AJ. (2020) **Natural Language Processing of Serum Protein Electrophoresis Reports in the Veterans Affairs Health Care System.** JCO Clinical Cancer Informatics 4:749–756.

Brunette CA, Miller SJ, Majahalme N, Hau C, MacMullen L, Advani S, Ludin SA, Zimolzak AJ, Vassy JL. (2020) **Pragmatic Trials in Genomic Medicine: The Integrating Pharmacogenetics in Clinical Care (I-PICC) Study.** Clinical and Translational Science 13(2):381–390. Epub 2019-12-18.

Fillmore N, Do N, Brophy M, Zimolzak A. (2019) **Interactive Machine Learning for Laboratory Data Integration.** Stud Health Technol Inform 264:133–137.

Fillmore NR, Yellapragada SV, Ifeorah C, Mehta A, Cirstea D, White PS, Rivero G, Zimolzak A, Pyarajan S, Do N, Brophy M, Munshi NC. (2019) **With equal access, African Americans have superior survival compared to Caucasians with Multiple Myeloma: a VA study.** Blood 133(24):2615–2618.

Vassy JL, Brunette CA, Majahalme N, Advani S, MacMullen L, Hau C, Zimolzak AJ, Miller SJ. (2018) **The Integrating Pharmacogenetics in Clinical Care (I-PICC) Study: Protocol for a point-of-care randomized controlled trial of statin pharmacogenetics in primary care.** Contemp Clin Trials 75:40–50.

Danziger J, Zimolzak AJ. **Residual Confounding Lurking in Big Data: A Source of Error.** In: MIT Critical Data, editors. Secondary Analysis of Electronic Health Records. Cham, Switzerland: Springer; 2016. pp. 71–78.

Fiore L, Ferguson RE, Brophy M, Kudesia V, Shannon C, Zimolzak A, Pierce-Murray K, Turek S, Lavori P. (2016) **Implementation of a Precision Oncology Program as an Exemplar of a Learning Health Care System in the VA.** Fed Pract 33(suppl 1):S26–S30.

Badawi O, Brennan T, Celi LA, Feng M, Ghassemi M, Ippolito A, Johnson A, Mark RG, Mayaud L, Moody G, Moses C, Naumann T, Pimentel M, Pollard TJ, Santos M, Stone DJ, Zimolzak A. (2014) **Making Big Data Useful for Health Care: A Summary of the Inaugural MIT Critical Data Conference.** JMIR Med Inform 2(2):e22.

Celi LA, Zimolzak AJ, Stone DJ. (2014) **Dynamic Clinical Data Mining: Search Engine-Based Decision Support.** JMIR Med Inform 2(1):e13.

Zimolzak AJ, Spettell CM, Fernandes J, Fusaro VA, Palmer NP, Saria S, Kohane IS, Jonikas M, Mandl KD. (2013) **Early Detection of Poor Adherers to Statins: Applying Individualized Surveillance to Pay for Performance.** PLoS ONE 8(11):e79611.

Zimolzak AJ. **Medication Adherence: How Should We Measure It, and Can We Detect It Early?** Harvard Medical School, Master of Medical Science thesis, 5/17/2013.

Presentations (national/international)

Sarah Bezek, Sara Ehsan, Andrea Bradford, Andrew Zimolzak, Hardeep Singh, Traber Giardina. **Aligning Patient Experience and Clinician Priorities to Address Diagnostic Error in a Safety-Net Emergency Department.** DEX25.

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Ann Arbor, September 2025.

Rachel Zastrow, Eva Chang, Pablo Garcia, Danielle McDaniel, May Boyle, Sharyl Sher, Daniel Murphy, Andrew Zimolzak, Hardeep Singh, Traber Giardina, Andrea Bradford. **Integrating Electronic Triggers (e-Triggers) in Organizational Patient Safety Workflows.** DEX25. Ann Arbor, September 2025.

Rachel Zastrow, Eva Chang, Pablo Garcia, Danielle McDaniel, May Boyle, Sharyl Sher, Daniel Murphy, Andrea Bradford, Hardeep Singh, Traber Giardina, Andrew Zimolzak. **From Research to Practice: Development and Validation of Diagnostic Error: E-triggers in a Large Health System.** DEX25. Ann Arbor, September 2025.

Gabriel Sandoval, Paarth Kapadia, Andrew J. Zimolzak, Yan Liu, Hardeep Singh, Natalia Khalaf. **A Digital Quality Measure for Emergency Presentation of Pancreatic Cancer.** Digestive Disease Week (DDW). Chicago, 5/6/2025.

Zimolzak AJ. **Machine Learning for Enhanced Electronic Trigger Detection of Diagnostic Errors.** VA Method Advisory Council. January 29, 2025. Invited presentation [national].

Zimolzak A, Zastrow R, Bezek S, Bradford A, Mir U, Ehsan S, Vaghani V, Sittig D, Singh H. **Translating Electronic Trigger Tools to Partner Institutions for Learning and Exploration of Diagnostic Excellence.** DEX24. Minneapolis MN, 10/13/2024.

Kapadia P, Ali B, Zimolzak A, Singh H, Khalaf N. **Development of an Algorithm to Automate the Detection of Emergency Presentations Among Pancreatic Cancer Patients.** Digestive Disease Week. Washington DC, 5/21/2024.

Zimolzak AJ, *et al.* **Application of a Digital Quality Measure for Cancer Diagnosis in Epic Cosmos.** Oral and Poster Presentation. Danish Society for Patient Safety Conference 2024. April 2024. Copenhagen, Denmark.

Zimolzak A, Kapadia P, Murphy DR, Upadhyay D, Mushtaq U, Mir U, Offner A, Korukonda S, Murugaesh Rekha R, Abel G, Lyratzopoulos G, Mounce L, Singh H. **Development, Implementation, and Validation of a Digital Quality Measure of Emergency Cancer Presentation.** Oncologic Emergency Medicine Conference. Houston, 2/2024.

Zimolzak AJ, Yu M, Wu Y, Wei L, Mir U, Gupta A, Vaghani V, Hassan A, Mower J, Subramanian D, Singh H. **Machine Learning for Enhanced Electronic Trigger Detection of Diagnostic Errors.** Society to Improve Diagnosis in Medicine conference (awarded Best oral presentation of the conference as a whole). Cleveland, 10/2023.

Zimolzak AJ, Singh H, Davila J. **Application of a Digital Quality Measure for Cancer Diagnosis in Epic Cosmos.** Society to Improve Diagnosis in Medicine conference (oral presentation). Cleveland, 10/2023.

Matin R, Meyer AND, Zimolzak AJ, Mir U, Giardina T, Singh H. **A Framework to Implement E-Triggers for Missed Opportunities in Diagnosis in Learning Health Systems.** Society to Improve Diagnosis in Medicine conference. Cleveland, 10/2023.

Kapadia P, Ali B, Zimolzak A, Singh H, Khalaf N. **Development of an Automated Algorithm to Detect Emergency Presentations Among Pancreatic Cancer Patients.** American College of Gastroenterology annual meeting. Vancouver, 10/2023.

Carlson K, Kumar D, Comer L, Peng F, Rao A, Zimolzak A, Podany W, Hirani K, Cole R, Vaclavik L, Horstman M, Larson S. **Increasing Accuracy of Colonoscopy Indication through Electronic Medical Record Changes: A Quality Improvement Project.** American College of Gastroenterology annual meeting. Vancouver, 10/2023.

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Kumar D, Carlson K, Peng FB, Rao A, Podany W, Hirani K, Zimolzak A, Vaclavik L, Horstman M, Larson S. **Clinical Care Processes Causing Delay for Positive Colorectal Cancer Screening Diagnostic Colonoscopy Among Veterans.** Digestive Diseases Week. Chicago, 5/2023.

Sippel K, Zimolzak AJ, Davila JA, Punugoti V, Klotman PE, Petersen LA, Liao G, Leiber L, Amos CI. **Datathon Revisited: Implementation of Lessons Learned.** Translational Science 2023. Washington DC, 4/2023.

Horstman MJ, Lim J, Zimolzak A, Caruso A, Gay L. **How we got our (S)WAG back: Academic Hospitalist (Strategic) Writing Accountability Group.** Society of Hospital Medicine National Meeting. Austin, 3/2023.

Rao AN, Horstman M, Vaclavik L, Zimolzak A, Nguyen S, Sheth S, Vasudevan M. **Increasing Usage of an Inpatient Insulin Order Set.** Michael E. DeBakey VA Medical Center Education Day, won award in Graduate Medical Education category. Houston, 3/23/2023.

Zimolzak AJ, Zubkoff L, Shahid U, Giardina T, Memon S, Meyer AND, Murphy DR, Singh H. **Reducing Missed Test Results through a Virtual Breakthrough Series Collaborative.** VA HSR&D / QUERI National Meeting. Baltimore; 2/9/2023.

Zimolzak AJ, Kapadia P, Murphy DR, Upadhyay D, Mushtaq U, Mir U, Offner A, Korukonda S, Murugaesh Rekha R, Abel G, Lyratzopoulos G, Mounce L, Singh H. **Development/Implementation of Cancer Diagnosis Digital Quality Measures.** American Medical Informatics Association Annual Symposium, selected for oral presentation. Washington DC, 11/2022.

Peng FB, Kumar D, Vaclavik L, Horstman MJ, Zimolzak AJ, Jackson LK, Braun UK, Hernaez R, Flores AG. **Quality improvement in palliative hepatology: increasing curative and palliative care for veterans with decompensated cirrhosis.** The Liver Meeting (AASLD, poster). Washington DC, 11/2022.

Zimolzak AJ, Kapadia P, Murphy DR, Upadhyay D, Mushtaq U, Mir U, Offner A, Korukonda S, Murugaesh Rekha R, Abel G, Lyratzopoulos G, Mounce L, Singh H. **Implementation, validation, and mortality association of 2 cancer diagnosis digital quality measures.** Society to Improve Diagnosis in Medicine conference (Best of the best oral presentation). Minneapolis, 10/2022.

Zimolzak AJ, Choi D, Dawson D, Fletcher T, Scott T, Giardina T. **The association of race and ethnicity with negative descriptors in clinical texts.** Society to Improve Diagnosis in Medicine conference (oral presentation). Minneapolis, 10/2022.

Zimolzak AJ, Singh H, Murphy DR, Wei L, Memon SA, Upadhyay D, Korukonda S, Zubkoff L, Sittig DF. **Translating electronic health record-based patient safety research algorithms to multiple clinical sites.** American Medical Informatics Association Clinical Informatics Conference, selected for oral presentation. Houston, 5/25/2022.

Murphy DR, Zimolzak AJ, Wei L, Jolly P, Offner A, Sittig DF, Singh H. **Developing Digital Quality Measures to Assess Potential Missed Opportunities in Cancer Diagnosis.** American Medical Informatics Association Clinical Informatics Conference. Houston, 5/25/2022.

Kapadia P, Zimolzak AJ, Murphy DR, Upadhyay D, Mushtaq U, Mir U, Korukonda S, Murugaesh Rekha R, Wei L, Lyratzopoulos G, Abel G, Offner A, Singh H. **A Digital Quality Measure of Emergency Cancer Diagnosis Using EHR Data in Two Large Health Systems.** American Medical Informatics Association Clinical Informatics Conference, selected for oral presentation. Houston, 5/25/2022.

Zimolzak AJ, Davila JA, Punugoti V, Sippel KH, Balasubramanyam A, Klotman P, Petersen LA, Rochat RH, Liao

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G, Laubscher RR, Leiber L, Amos CI. **Lessons Learned from an Enterprise-Wide Clinical Datathon.** American Medical Informatics Association Annual Symposium, selected for oral presentation. San Diego, 11/2/2021.

Zimolzak AJ, Davila JA, Amos CI. **Lessons learned from an enterprise-wide clinical datathon.** APHA 2021 Annual Meeting, selected for oral presentation. Denver, 10/25/2021.

Zimolzak AJ, Murphy DR, Upadhyay D, Wei L, Mushtaq U, Jolly P, Korukonda S, Lyratzopoulos G, Abel G, Offner A, Singh H. **Development of an electronic quality measure of late stage cancer diagnosis.** Society to Improve Diagnosis in Medicine conference (poster). 10/25/2021.

Meyer AND, Singh H, Zimolzak AJ, Wei L, Martinez A, Murphy DR. **Association Between the COVID-19 Pandemic and Follow-up of Cancer-Related Abnormal Test Results.** Society to Improve Diagnosis in Medicine conference. 10/2021.

Kapadia P, Zimolzak AJ, Murphy DR, Upadhyay D, Mushtaq U, Jolly P, Korukonda S, Wei L, Lyratzopoulos G, Abel G, Offner A, Singh H. **Development of an electronic diagnostic quality measure based on emergency cancer presentations in the United States.** Society to Improve Diagnosis in Medicine conference, selected for oral presentation. 10/2021.

Kapadia P, Zimolzak A, Murphy D, Lyratzopoulos G, Abel G, Upadhyay D, Scott T, Singh H. **Development of eMeasures to Study Missed and Delayed Diagnosis of Lung and Colorectal Cancer.** Society to Improve Diagnosis in Medicine conference. 10/19/2020.

Vaghani V, Murphy D, Memon S, Zimolzak A, Subramanian D, Upadhyay D, Singh H. **A Portfolio of e-Triggers to Identify Diagnostic Errors in Emergency Departments: A Prioritization Exercise.** Society to Improve Diagnosis in Medicine conference. 10/19/2020.

Kapadia P, Vaghani V, Zimolzak A, Singh H, Subramanian D. **Development of a Machine Learning Enhanced Trigger to Detect Diagnostic Error.** Society to Improve Diagnosis in Medicine conference. 10/20/2020.

Kapadia P, Murphy D, Zimolzak A, Lyratzopoulos G, Abel G, Scott T, Singh H. **Measuring the Proportion of Cancer Diagnosed as an Emergency in the VA Health System.** Society to Improve Diagnosis in Medicine conference. 10/20/2020.

Vaghani V, Wei L, Mushtaq U, Zimolzak A, Sittig D, Singh H. **Performance of an e-Trigger to Detect Missed Stroke Diagnosis in Patients with Headache or Dizziness Symptoms in Emergency Department.** American Medical Informatics Association Annual Symposium. 11/16/2020.

Zimolzak A, Shahid U, Memon S, Giardina T, Mushtaq U, Murphy D, Zubkoff L, Singh H. **Top Contributors to Missed Test Results in the VA Health Care System.** Diagnostic Error in Medicine 12th Annual International Conference. Washington, D.C.; 11/11/2019.

Vaghani V, Wei L, Mushtaq U, Zimolzak A, Sittig D, Singh H. **Performance of an e-Trigger to Detect Missed Stroke Diagnosis In Patients with Headache or Dizziness Symptoms in Emergency.** Diagnostic Error in Medicine 12th Annual International Conference. Washington, D.C.; 11/11/2019.

Research before 2018

Brunette CA, Advani S, Hage A, Seo S-J, Miller SJ, Majahalme N, Zimolzak AJ, Vassy JL. **Impact of pharmacogenetic testing on statin outcomes: Primary results from the Integrating Pharmacogenetics in Clinical Care**

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(I-PICC) Study randomized trial. American Society of Human Genetics Annual Meeting. Houston; October 19, 2019.

Do NV, Ramos JC, Fillmore NR, Grossman RL, Fitzsimons M, Elbers DC, Meng F, Zimolzak AJ, Johnson BR, Ajjarapu S, DeDomenico CL, Pierce-Murray KE, Hall RB, Do AF, Gaynor K, Elkin PL, Brophy MT. **Machine learning methods to predict lung cancer survival using the Veterans Affairs Research Precision Oncology Data Commons.** Medinfo (World Congress of Medical Informatics). Lyon, France; 8/26/2019.

Zimolzak A. **Early and late stage lung cancer: correlating clinical data and genomics in the Million Veteran Program.** American Thoracic Society International Conference. Dallas; 5/20/2019.

Do N, Bono J, Fillmore N, Zimolzak A, Johnson B, Meng F, Elbers D, Hall R, Ajjarapu S, Brophy M, Elkin P. **Development of an AI empowered Electronic Molecular Tumor Board Application Connected Utilizing the SMART on FHIR Framework.** American Medical Informatics Association Annual Symposium. San Francisco; 11/5/2018.

Advani S, Brunette CA, Miller SJ, Majahalme N, MacMullen L, Hau C, Zimolzak AJ, Vassy JL. **The Integrating Pharmacogenetics in Clinical Care (I-PICC) study: Baseline characteristics of participants in a point-of-care randomized trial.** American Society of Human Genetics Annual Meeting. San Diego; 10/17/2018.

Johnson BR, Elbers DC, Pierce E, Meng F, Fillmore N, Ayandeh S, Chen D, Selva L, Begley NB, Zimolzak AJ, Brophy MT, Do NV. **The Veterans Health Administration's Research Precision Oncology Project: Integrating Real-World Data into a Learning Health System.** American Society of Human Genetics Annual Meeting. San Diego; 10/18/2018.

Brunette CA, Miller SJ, Majahalme N, Hau C, MacMullen L, Advani S, Zimolzak AJ, Vassy JL. **Pragmatism in Pharmacogenetics Trials: A PRECIS-2 perspective on the Integrating Pharmacogenetics in Clinical Care (I-PICC) Study.** American Society of Human Genetics Annual Meeting. San Diego; 10/19/2018.

Do N, Pierce-Murray K, Peirce E, DeDomenico C, Meng F, Elbers D, Katcher B, Hall R, Zimolzak A, Ajjarapu S, Shannon C, Turek S, Johnson B, Fillmore N, Brophy M, Fiore L. **The Development of the Research Precision Oncology Program Data Repository (PODR) in the Veterans Affairs Healthcare System.** American Medical Informatics Association Annual Symposium. Washington, D.C.; 11/6/2017.

Ajjarapu S, Meng F, Elbers D, Do N, Hall R, Pierce-Murray K, Selva L, Katcher B, Johnson B, Zimolzak A, DeDomenico C, Brophy M, Fiore L. **Releasing De-identified Clinical, Imaging, and Genomic Data from the VA to External Repositories for the APOLLO Network.** American Medical Informatics Association Annual Symposium. Washington, D.C.; 11/6/2017.

Majahalme N, Miller S, Zimolzak A, Vassy J. **Scaling Down Clinical Trial Software from 13,500 to 400 Participants.** American Medical Informatics Association Annual Symposium. Washington, D.C.; 11/6/2017.

Miller SJ, Hau C, Majahalme N, Zimolzak AJ, MacMullen L, Vassy JL. **Potential impact of statin pharmacogenetic testing in an integrated healthcare system: The Integrating Pharmacogenetics in Clinical Care (I-PICC) Study.** American Society of Human Genetics Annual Meeting. Orlando; 10/19/2017.

Johnson BR, Fillmore N, Zimolzak A, Ho YL, Elbers D, Katcher B, Gagnon D, Meng F, Brophy M, Fiore L, Lesse A, Concato J, Gaziano JM, Do N, Elkin PL, Cho K. **Developing validated phenotypic cancer cohorts for molecular stratification and susceptibility assessment, a use case: patients diagnosed with early versus late stage non-small cell lung cancer.** American Society of Human Genetics Annual Meeting. Orlando; 10/19/2017.

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Zimolzak AJ, Kudesia VM. **Secondary Use of an Eighty-Billion-Row Clinical Data Warehouse.** Society for Industrial and Applied Mathematics 2016 annual meeting. Boston; 7/14/2016.

Raju SP, Ho Y-L, Zimolzak AJ, Katcher B, Cho K, Gagnon DR. **Validation of Laboratory Values in a Heterogeneous Healthcare System: The US Veterans Affairs Experience.** 31st International Conference on Pharmacoepidemiology & Therapeutic Risk Management (ICPE). Boston; 8/22–26/2015.

Leatherman SM, Riley KE, Woods PA, Zimolzak AJ, Majahalme N, Kudesia V, Ferguson RE, Fiore LD. **Ascertainment of Clinical Outcomes from Electronic Medical Record Data for Point-of-Care Clinical Trials.** VA HSR&D / QUERI National Conference. Philadelphia; 7/8–10/2015.

Zimolzak AJ. **Early Detection of Statin Adherence/Nonadherence.** National Library of Medicine Informatics Training Conference, Salt Lake City; 6/19/2013.

Zimolzak AJ, Spettell CM, Fernandes J, Fusaro VA, Palmer NP, Saria S, Jonikas M, Kohane IS, Mandl KD. **Early Statin Adherence As a Predictor of Later Adherence.** American Medical Informatics Association Summit on Clinical Research Informatics. San Francisco; 3/20/2013.

Presentations (local seminars, course lectures)

Natalia Khalaf, Basim Ali, Andrew J. Zimolzak, Fasiha Kanwal, Hardeep Singh. **Potentially Avoidable Emergency Presentations Among Patients with Colorectal Cancer: Digital Quality Measure Enhancement and Application.** BCM QIPS conference.

Natalia Khalaf, Gabriel Sandoval, Andrew J. Zimolzak, Yan Liu, Hardeep Singh. **A Digital Quality Measure for Emergency Presentation of Pancreatic Cancer.** BCM QIPS conference.

Zimolzak AJ. **Machine Learning to Enhance Electronic Detection of Diagnostic Errors.** Invited presentation [local]: UTHealth School of Biomedical Informatics research seminar. November 19, 2025.

Zimolzak AJ. **Applications of Epic Cosmos.** Invited presentation [local]: BCM data science seminar. April 16, 2025.

Zimolzak AJ. **Applications of Epic Cosmos.** Invited presentation [local]: BCM Love Data Week. February 12, 2025.

Zimolzak AJ. **AI and ML History, Definitions, and Pitfalls: An Opinionated Overview.** Invited presentation [local]: BCM data science seminar. December 18, 2024.

Sandoval G, Zimolzak AJ, Khalaf N. **A Digital Quality Measure for Emergency Presentation of Pancreatic Cancer.** Michael E. DeBakey VA Medical Center Quality Management and Improvement Summit, selected for oral presentation. Houston, 10/15/24.

Zimolzak AJ. **Electronic Health Record Data Quality.** Lecture. 7/2024.
<https://zenodo.org/doi/10.5281/zenodo.11393188>

Zimolzak AJ. **Electronic Health Record Data for Health Policy Research.** Invited lecture to medical students in the health policy track. 12/5/2023. <https://doi.org/10.5281/zenodo.10267057>

Zimolzak AJ. **Clinical Research Informatics with Applications to Diagnostic Safety.** Invited presentation to Patient-Partnered Diagnostic Center of Excellence learning community. 8/21/2023.

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Zimolzak AJ. **Is it called Artificial Intelligence, or Machine Learning, or something else?** Invited presentation to IQuEST methodology core. 5/26/2023.

Zimolzak AJ. **Working with data sets for translational research.** Baylor College of Medicine course “Orientation to Clinical Translational Research,” course no. GS-GS-6206. Second-year PhD students in the Graduate School of Biomedical Sciences. 2023–2025 (3 years).

Zimolzak AJ. **Concept embeddings for stroke diagnostic error.** Gulf Coast Consortia Artificial Intelligence in Healthcare Symposium. 5/18/2022.

Zimolzak AJ. **Translating Electronic Health Record-Based Patient Safety Algorithms from Research to Clinical Practice.** Invited seminar talk, Baylor College of Medicine, Computational and Integrative Biomedical Research Center. Quantitative & Computational Biosciences graduate seminar. 2/23/2022.

Zimolzak AJ. **Data processes and machine learning for health research, in the US Department of Veterans Affairs.** Invited seminar talk, University of Houston Department of Industrial Engineering. 4/16/2021.

Johnson BR, Fillmore NR, Brophy M, Fiore LD, Elkin PL, Katcher B, Ho Y-L, Zimolzak AJ. **Phenotyping Non-Small-Cell Lung Cancer at the VA: Cohort and Susceptibility Analysis.** VA Research week. Boston; 5/18/2017.

Fillmore NR, Zimolzak AJ, Johnson BR, Brophy M, Munshi N. **Ascertaining Cases of Multiple Myeloma Using Multiple VA National Structured Data Sources.** VA Research week. Boston; 5/18/2017.

Professional Service

Faculty Senate, BCM, 2025–present.

Phenotype Working Group, part of BCM Department of Medicine Learning Health System initiative. 2023–present.

Artificial intelligence Request for applications, reviewer. BCM-wide funding opportunity for AI projects. 2024.

BCM Data Governance Committee, member. 2024–present.

Internal grant review, IQuEST. 2023–present. Critiqued faculty and career development grants (3).

Faculty candidate interviewer, IQuEST. 2023–present.

VA CIPHER expert panel, 2024. Advise on the future direction of the Centralized Interactive Phenomics Resource.

Electronic laboratory notebook working group, Baylor College of Medicine. 10/2021–7/2022.

Research Data Security Committee, IQuEST. 2/2022–present.

House Staff Research Symposium, reviewer. BCM department of medicine. 4/2022.

Methods Analytics and Data Education Initiative, IQuEST. 1/2020–present.

Patient, Physician, and Society preceptor, Baylor College of Medicine 2019–2020.

Institutional Review Board, member, VA Boston Healthcare System. 9/2017–11/2018.

BMJ Open, ad-hoc reviewer. 2025–present.

JAMA Network Open, ad-hoc reviewer. 2025–present.

Pharmacoepidemiology and Drug Safety, ad-hoc reviewer. 2025–present.

Future Oncology, ad-hoc reviewer. 2025–present.

Diagnosis, ad-hoc reviewer. 2024–present.

F1000Research, reviewer. 3/2021–present. See also <https://f1000research.com/articles/9-1186>

VA Lung Precision Oncology Project, grant review section. VA Central Office (CSR&D). 9/2020.

JCO Clinical Cancer Informatics, reviewer. 2/2020–present.

Digital Health, reviewer. 12/2019–present.

JMIR Research Protocols, reviewer. 1/2019–present.

Journal of Health Services Research & Policy, reviewer. 8/2015–present.

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AMIA Annual Symposium, reviewer. 2015–present.

NEJM Group Open Forum. Moderator for a forum where authors discuss their NEJM articles. 2/2015–3/2015.

PLoS ONE, reviewer. 11/2012–present.

Physicians and Social Media: Keeping it Professional. Planning committee member, panel moderator. 9/26/2013.

Critical Data. Planning committee, participant. “Data marathons” at MIT. 1/3/2014–1/7/2014, and 9/5/2014–9/7/2014.

Computing in Cardiology. Planning committee & reviewer. Three day conference for international participants from medicine, physics, engineering, and computer science. 9/8/2014–9/10/2014.

Massachusetts American College of Physicians Annual Scientific Meeting. Planning committee, quiz moderator, reviewer. 2014–2016.

References

Hardeep Singh	2002 Holcombe Blvd	Houston TX 77030	-
Andrew Caruso	2002 Holcombe Blvd Mailcode 111	Houston TX 77030	-
Lindsey Gay	2002 Holcombe Blvd Mailcode 111	Houston TX 77030	-
Mary Brophy	150 S. Huntington, mail stop 151MAV	Boston MA 02130	-
Nhan Do	150 S. Huntington, mail stop 151MAV	Boston MA 02130	-
Anthony Breu	1400 VFW Pkw	West Roxbury MA 02132	-
Valmeek Kudesia	30 Winter St	Boston MA 02108	-
Kenneth Mandl	300 Longwood Ave	Boston MA 02115	-
David Meenan	133 Brookline Ave	Boston MA 02215	-