

Jeremy B **Provance**, PhD, MS *Curriculum Vitae*

CONTACT INFORMATION

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Vascular Medicine Outcomes Research Group
Department of Internal Medicine, Section of Cardiovascular Medicine
Yale University School of Medicine
789 Howard Avenue
New Haven, Connecticut 06519

EDUCATION

PhD Bioinformatics (2021), University of Missouri-Kansas City School of Medicine
Dissertation: *Emerging Methods for Use of Real-World Clinical Data for Cardiovascular Outcomes Research*
MS Bioinformatics (2017), University of Missouri-Kansas City School of Medicine
Thesis: *Decisional Conflict in Peripheral Artery Disease: Association with Treatment Choice and Health Status*
BA Biology (2014), William Jewell College
Senior Project: *Fermentation Vessel Geometry Effects on Saccharomyces cerevisiae Metabolites with Gas Chromatograph-Mass Spectroscopy Analysis*

PROFESSIONAL EXPERIENCE

Postdoctoral Associate (2021-), Yale University School of Medicine (New Haven, Connecticut)
Graduate Research Assistant (2017-2021), Saint Luke's Mid America Heart Institute (Kansas City, Missouri)
Software Support Analyst (2015-2021), UMKC School of Medicine
Graduate Instructor (2020-2021), UMKC School of Medicine
Graduate Teaching Assistant (2019), UMKC School of Medicine
Microbiologist (2015), Boulevard Brewing Company (Kansas City, Missouri)
Production Brewer (2014), Tallgrass Brewing Company (Manhattan, Kansas)

PEER-REVIEWED PUBLICATIONS

1. Scierka L, Mena-Hurtado C, Shishehbor M, Spertus JA, Nagpal S, Babrowski T, Bunte MC, Politano A, Humphries M, Kirksey L, Chung J, Alabi O, Soukas P, Parikh S, Faizer R, **Provance JB**, Stone N, Scott K, Fuss C, Pacheco C, Gosch K, Harper-Brooks A, Smolderen KG. The Shifting Care and Outcomes for Patients with Endangered Limbs - Critical Limb Ischemia (SCOPE-CLI) Registry: Overview of Study Design and Rationale. 2021. *Circulation: Cardiovascular Quality and Outcomes*. Under review.
2. Jelani QUA, Llanos-Chea F, Bogra P, Trejo-Paredes C, **Provance JB**, Huang J, Turner J, Anantha-Narayanan M, Sheikh AB, Smolderen KG, Mena-Hurtado CA. 2021. Lack of Guideline-Directed Medical Therapy in Patients with Chronic Kidney Disease Undergoing Endovascular Procedures for Complex Critical Limb Ischemia. *American Journal of Nephrology*. Under review.
3. **Provance JB**, Spertus JA, Jones PG, Hoffman MA, Bunte MC, Vogel TR, Mena-Hurtado CI, Smolderen KG. 2021. Factors Associated with 30-Day Major Amputation in Patients with Critical Limb Ischemia Undergoing Endovascular Peripheral Vascular Intervention. *Journal of Vascular Surgery*. Under review.
4. Pichert MD, Smolderen KG, Castro-Dominguez Y, Jelani QA, Nagpal S, **Provance JB**, Huang J, Malik AO, Secemsky EA, Derbas LA, Mena-Hurtado CI. 2021. Trends in Drug Coated Device Use for Peripheral Arterial Disease: Insights from Vascular Quality Initiative. *Vascular Medicine*. Accepted.
5. Smolderen KG, Pacheco C, **Provance JB**, Stone N, Fuss C, Decker C, Bunte M, Jelani Q, Safley DM, Secemsky E, Sepucha K, Spatz ES, Mena-Hurtado CI, Spertus JA. 2020. Treatment Decisions for Patients with Peripheral Artery Disease and Symptoms of Claudication: Development Process and Alpha Testing of the SHOW-ME-PAD Decision-Aid. *Vascular Medicine*.
6. Malik AO, Peri-Okonny P, Gosch K, Thomas BT, Mena-Hurtado CI, Hiatt W, Aronow HD, Jones PG, **Provance JB**, Labroschiano C, Jelani Q, Spertus JA, Smolderen KG. 2020. Association of Perceived Stress with Health Status in Patients with Peripheral Artery Disease. *Journal of Psychosomatic Research*.
7. Peri-Okonny P, Spertus JA, Malik AO, Jackson EA, Shishehbor MH, Mena-Hurtado CI, **Provance JB**, Hejjaji V, Patel S, Gosch KL, Smolderen KG. 2020. Physical Activity after Treatment for Symptomatic Peripheral Artery Disease. *American Journal of Cardiology*.
8. Peri-Okonny P, Patel S, Heyligers JM, Spertus JA, Jackson EA, Malik AO, **Provance JB**, Mena C, Shishehbor MH, Hejjaji V, Gosch KL, Smolderen KG. 2020. Physical Activity in Patients with Symptomatic Peripheral Artery Disease: Insights from the PORTRAIT Registry. *European Journal of Vascular & Endovascular Surgery*.
9. Malik AO, Peri-Okonny P, Gosch K, Thomas M, Mena C, Hiatt WR, Jones PG, **Provance JB**, Labroschiano C, Jelani Q, Spertus JA, Smolderen KG. 2020. Association of Perceived Stress Levels with Long-Term Mortality in Patients with Peripheral Artery Disease. *Journal of the American Medical Association Network Open*. 3(6):e208741.
10. **Provance JB**, Spertus JA, Decker C, Jones PG, Smolderen KG. 2019. Assessing Patient Preferences for Shared Decision-Making in Peripheral Artery Disease: Insights from the PORTRAIT Registry. *Circulation: Cardiovascular Quality and Outcomes*. 12(8).
11. Ward-Smith P, Hawks JH, Quallich SA, **Provance JB**. 2018. Workplace incivility: Perceptions of urology nurses. *Urological Nursing*. 38(1), 20-26.
12. Hoffman MA, **Provance JB**. 2017. Visualization of Molecular Structures Using HoloLens-based Augmented Reality. *American Medical Informatics Association Joint Summits on Translational Science Meeting Proceedings*. 68-74.

PUBLISHED ABSTRACTS

1. **Provance JB**, Smolderen KG, Mao J, Goodney PP, Henke PK, Sedrakyan A, Mena-Hurtado CI. 2021. Guideline Directed Medical Therapy After Peripheral Vascular Intervention And One-year Mortality In Patients With Peripheral Artery Disease In The Vascular Quality Initiative Medicare Linked Database. *American Heart Association*. Submitted.
2. Scierka LE, Mena-Hurtado CI, Shishehbor MH, Spertus JA, Nagpal S, Babrowski T, Bunte MC, Politano A, Humphries M, Chung J, Kirksey L, Alabi O, Soukas P, Sahil P, Faizer R, Stone N, Scott K, Fuss C, Pacheco C, Gosch K, **Provance JB**, Harper-Brooks A, Smolderen KG. 2021. Scope-CLI (Shifting Care and Outcomes for Patients with Endangered Limbs-Critical Limb Ischemia)-Overview of Study Design and Rationale. *American Heart Association*. Submitted.
3. Rajagopal G, **Provance JB**, Abu Kishk M, Drees B. 2021. Predictors of Non-Traumatic Lower Extremity Amputation in Patients with Diabetes and Peripheral Artery Disease. *American Diabetes Association*. Accepted.
4. **Provance JB**, Spertus JA, Jones PG, Bunte MC, Vogel TR, Hoffman MA, Mena-Hurtado CI, Anderson BS, Smolderen KG. 2020. Factors Associated with 30-Day Amputation in Patients with Critical Limb Ischemia Undergoing Endovascular Intervention. *American College of Cardiology*.
5. **Provance JB**, Spertus JA, Jones PG, Bunte MC, Vogel TR, Hoffman MA, Mena-Hurtado CI, Smolderen KG. 2020. Site Variability in 30-Day Amputation Rates Among Patients with Critical Limb Ischemia Undergoing Endovascular Intervention. *American College of Cardiology*.
6. **Provance JB**, Spertus JA, Decker C, Buchanan D, Jones P, Smolderen KG. 2019. Preferences and Patterns of Shared Decision-Making in Patients With Peripheral Artery Disease: Insights From the PORTRAIT Registry. *JACC*. 73(9): S1.
7. Peri-Okonny P, Malik A, **Provance JB**, Hejjaji V, Gosch K, Spertus JA, Smolderen KG. 2019. Cross Country Comparison of Leisure Time Physical Activity Trajectories in Patients With Symptomatic Peripheral Artery Disease: Insights From the PORTRAIT Registry. *JACC*. 73(9): S1.
8. Peri-Okonny P, Malik A, **Provance JB**, Hejjaji V, Gosch K, Spertus JA, Smolderen KG. 2019. Leisure Time Physical Activity After Invasive Treatment For Symptomatic Peripheral Artery Disease: Insights From the PORTRAIT Registry. *JACC*. 73(9): S1.
9. Malik AO, Peri-Okonny P, **Provance JB**, Gosch K, Thomas M, Labrosciano C, Spertus JA, Smolderen KG. 2019. The Association of Perceived Stress With Health Status Outcomes in Patients With Peripheral Artery Disease. *JACC*. 73(9): S1.
10. **Provance JB**, Spertus JA, Decker C, Smolderen KG. 2018. Examining Patients' Knowledge With Regards to Peripheral Artery Disease Treatments and Outcomes: Insights From the PORTRAIT Registry. *Circulation*. 138: A15970.
11. **Provance JB**, Spertus JA, Decker C, Smolderen KG. 2018. How Patients Value Different Treatment Goals and Outcomes in Peripheral Artery Disease Outcomes: Insights From the PORTRAIT Registry. *Circulation*. 138: A16038.
12. **Provance JB**, Spertus JA, Safley D, Jones PG, Sepucha K, Spatz E, Decker C, Smolderen KG. 2017. Decisional Conflict in Peripheral Artery Disease: Association with Treatment Choice and Health Status in the PORTRAIT Registry. *Circulation*. 136: A20550.

PODIUM PRESENTATIONS

1. *Visualization of molecular structures using HoloLens-based augmented reality*, Midwest Bioinformatics Conference, 2017 [video, start at 28:35]
 2. *Visualization of molecular structures using HoloLens-based augmented reality*, American Medical Informatics Association Joint Summits for Translational Science, 2017
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MODERATED POSTER PRESENTATIONS

1. *Preferences and Patterns of Shared Decision-Making in Patients with Peripheral Artery Disease: Insights from the PORTRAIT Registry*, American College of Cardiology Scientific Sessions, 2019
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POSTER PRESENTATIONS

1. Factors Associated with 30-Day Amputation in Patients with Critical Limb Ischemia Undergoing Endovascular Intervention, American College of Cardiology Scientific Sessions, 2021
2. Site Variability in 30-Day Amputation Rates Among Patients with Critical Limb Ischemia Undergoing Endovascular Intervention, American College of Cardiology Scientific Sessions, 2021
3. *Relationship between Catatonia Treatment and Diagnosis Code, Gender, and Location*, UMKC Medical Student Research Summit, 2020
4. *Comparing Types of Medications Prescribed and Type of Insurance Regarding Catatonia Diagnosis*, UMKC Medical Student Research Summit, 2020
5. *Association Between Insurance Provider and Psychoactive Drug Treatment for Catatonic Patients*, UMKC Medical Student Research Summit, 2020
6. *Patterns of Provider-type Encounters for Patients with Peripheral Artery Disease, Insights from the Cerner Health Facts Database*, UMKC Virtual Health Sciences Student Research Summit, 2020
7. *Catatonic patients given atypical antipsychotics have a significantly longer length of stay Catatonic patients treated early with a benzodiazepine have a significantly shorter length*, UMKC Medical Student Research Summit, 2019
8. *The Protective Effects of Smoking on Catatonia*, UMKC Medical Student Research Summit, 2019
9. *The Effects of Insurance Status on the Route Type of the Catatonia Medication Prescribed*, UMKC Medical Student Research Summit, 2019
10. *Preferences and Patterns of Shared Decision-Making in Patients with Peripheral Artery Disease: Insights from the PORTRAIT Registry*, Saint Luke's Hospital Annual Research Day, 2019
11. *Studying Non-Traumatic, Lower-Limb Amputations in the Cerner Health Facts EMR Database*, UMKC Health Sciences Student Research Summit, 2019
12. *Preferences and Patterns of Shared Decision-Making in Patients with Peripheral Artery Disease: Insights from the PORTRAIT Registry*, UMKC Health Sciences Student Research Summit, 2019
13. *Preferences and Patterns of Shared Decision-Making in Patients with Peripheral Artery Disease: Insights from the PORTRAIT Registry*, UMKC Community of Scholars Research Symposium, 2019
14. *Examining Patients' Knowledge with Regards to Peripheral Artery Disease Treatments and Outcomes: Insights from the PORTRAIT Registry*, American Heart Association Scientific Sessions, 2018

15. *How Patients Value Different Treatment Goals and Outcomes in Peripheral Artery Disease Outcomes: Insights from the PORTRAIT Registry*, American Heart Association Scientific Sessions, Chicago, 2018
 16. *The Effect of Language Barrier on Prescribing of Pain Medication for Patients Diagnosed in the Emergency Department with Kidney Stones*, Truman Medical Center Emergency Medicine Resident Research Day, 2018
 17. *Decisional Conflict in Peripheral Arterial Disease: Association with Treatment Choice and Health Status in the PORTRAIT Registry*, Saint Luke's Hospital Annual Research Day, 2018
 18. *Comparison of a National and a Local Electronic Health Data Warehouse for Clinical Laboratory Quality Improvement Research*, Midwest Bioinformatics Conference, 2018
 19. *Decisional Conflict in Peripheral Arterial Disease: Association with Treatment Choice and Health Status in the PORTRAIT Registry*, American Heart Association Scientific Sessions, 2017
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PROGRAMMING

Expert: R, SAS, SQL, Markdown

Intermediate: MongoDB, Python, MySQL, PostgreSQL

Working Knowledge: PHP, HTML5, CSS, Oracle, Command Line

HONORS & AWARDS

Ida Bamberger Memorial Research Award, 2021, UMKC School of Medicine

Scientific Writing Program Selection, 2020, Genetics Society of America and BioKansas

3rd Place (Poster), 2019, UMKC Community of Scholars Research Symposium

Ida Bamberger Memorial Research Award, 2019, UMKC School of Medicine

Travel Award, 2019, UMKC School of Graduate Studies

Sarah Morrison Student Research Award, 2018, UMKC Office of Research Administration

Travel Award, 2018, UMKC School of Graduate Studies

Travel Award, 2017, UMKC School of Graduate Studies

Omicron Delta Kappa Honor Society, 2016

Golden Key International Honor Society, 2016

GRANT PARTICIPATION

2016-2018

Role: *Electronic Data Warehouse Analyst* (0.2 FTE)

Project: Practice-Based Evidence Using Local and National Data for Quality Improvement

Principal Investigators: Mark Hoffman, PhD; Kamani Lankachandra, MD

Funding Agency: Center for Disease Control (RFA-OE16-1602)

Grant amount: \$956,553 (3 years)

TEACHING EXPERIENCE

Graduate Instructor, Department of Biomedical & Health Informatics, UMKC School of Medicine
MEDB 5512: Clinical Trials (2020, 2021)

Teaching Assistant, Department of Biomedical & Health Informatics, UMKC School of Medicine
MEDB 5512: Clinical Trials (2019)

INVITED PRESENTATIONS & GUEST LECTURES

Quality of Care and Outcomes in Patients with Critical Limb Ischemia: Derivation of a Nationwide Cerner Health Facts Vascular Datamart, 2021, Yale Internal Medicine Faculty Research Forum, Yale School of Medicine [slides]

Clinical Research Informatics: Information Needs and Systems in the Clinical Research Environment, 2021, Introduction to Medical Informatics course, UMKC School of Medicine [slides]

Preparing Next-generation Scientists for Biomedical Big Data: Artificial Intelligence Approaches, 2019, Multi-disciplinary Seminar, UMKC School of Medicine [slides]

Generalized Linear Mixed Models-Logistic Regression, 2018, Biostatistics III, UMKC School of Medicine

Introduction to Digital Open Science, 2018, Multi-disciplinary Seminar, UMKC School of Medicine [slides]

Using Cerner i2b2 and Health Facts for Clinical Trials and General Research, 2018, Clinical Trials, UMKC School of Medicine

Visualization of molecular structures using HoloLens-based augmented reality, 2017, Multi-disciplinary Seminar, UMKC School of Medicine

Using the De-identified Cerner i2b2 Database as a Research Resource, 2017, Medical Student Neuroscience Course, UMKC School of Medicine

RESEARCH MENTORSHIP

Sunny Ruggeri, UMKC School of Nursing, *Doctoral Committee Member* (2021-2023)

Geetha Rajagopal, Medical Student, UMKC School of Medicine (2020-2021)

Medical Student Neuroscience Course Statistical Mentorship, UMKC School of Medicine (2019, 2020)

Fahad Qureshi, Medical Student, UMKC School of Medicine (2019-2020)

PROFESSIONAL SERVICE

American Medical Association, *Journal of the American Medical Association Network Open* (Reviewer, 2020-)

American Heart Association, *Quality of Care & Outcomes Research Scientific Sessions* (Abstract Reviewer, 2020-)

Saint Luke's Hospital Research Day (Poster Judge, 2019)

American Heart Association, *Circulation: Cardiovascular Quality and Outcomes* (Reviewer, 2017-)

American Medical Informatics Association, *Informatics Summits* (Abstract Reviewer, 2017-)

PROFESSIONAL MEMBERSHIP

American College of Cardiology (Student Member, 2019-Present)

American Heart Association (Student Member, 2017-Present)

American Medical Informatics Association (Student Member, 2017-Present)

PODCAST APPEARANCES

Role in implementing i2b2 software, how i2b2 facilitates research goals, and challenges within clinical trials,
The Research Rundown Podcast Series, Episode 3, Cerner Corporation, 2018

SERVICE LEADERSHIP

UMKC Graduate Student Council, *President (2019), Vice President (2018), Secretary (2016, 2017)*

William Jewell College Presidential Mentorship Program, *Mentor (2019-Present)*

UMKC School of Graduate Studies Strategic Planning Committee, *Student Member (2019)*

UMKC School of Graduate Studies Assistantship and Tuition Task Force, *Student Member (2019)*

Golden Key International Honor Society, Inducted 2016, *Treasurer (2016)*

Omicron Delta Kappa Honor Society, Inducted 2016

UMKC Biomedical & Health Informatics Chair Search Committee, *Student Member (2016-2017)*

UMKC Biomedical & Health Informatics Curriculum Committee, *Student Member (2016-2017)*

Phi Gamma Delta-Zeta Phi, Board of Graduate Advisers (2014-Present)

William Jewell College Student Senate, *President (2013), Treasurer (2014, 2012)*

Phi Gamma Delta-Zeta Phi, *New Member Educator (2014), Treasurer (2013), Judicial Chair (2012)*

William Jewell College Cardinal Hosts (2011-2014)

Missouri Boys State Staff Counselor (2010)

Missouri Boys State, *Boys Nation Finalist (2009)*

PERSONAL ACHIEVEMENTS

Hospital Hill Half Marathon *2017, 2018, 2019, 2021*

Kansas City Marathon *2010, 2011, 2016, 2019*

Kansas City Half Marathon *2012, 2013, 2018*

Kansas Half Marathon *2014*

Des Moines 5150 Triathlon *2012*

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