

CURRICULUM VITAE

Benjamin X. Collins

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EDUCATION

Postdoctoral Research Training

Vanderbilt University Medical Center, Nashville, TN 07/2022 – current
Ethics, Legal, and Social Issues of Artificial Intelligence in Health Care
Mentors: Ellen Clayton, Bradley Malin

Graduate Education

Oregon Health & Science University (OHSU), Portland, OR 07/2020 – 09/2022
M.S. Biomedical Informatics
Capstone Project: Development of an online training module for clinicians on algorithmic bias in medicine

Temple University, Philadelphia, PA 09/2018 – 08/2020
M.A. Urban Bioethics
Thesis: A Sociotechnical Theory of Justice in Healthcare

George Mason University, Manassas, VA 08/2011 – 05/2012
Graduate Certificate. Advanced Biomedical Sciences

Medical Education and Training

Oregon Health & Sciences University, Portland, OR 07/2020 – 06/2022
Clinical Informatics Fellowship

Temple University Hospital, Philadelphia, PA 06/2017 – 06/2020
Internal Medicine Residency

Virginia Commonwealth University School of Medicine, Richmond, VA 08/2013 – 05/2017
M.D.

Undergraduate Education

Virginia Commonwealth University (VCU), Richmond, VA 08/2006 – 05/2011
B.S. Biology
B.A. Emergency Management and Homeland Security

Professional Development

Catalyzing Informatics Innovation (CI2) Program 09/2022 - 04/2023
Vanderbilt University Medical Center, Nashville, TN.
Selected for mentor support and guidance on conducting research related to progressing informatics.

Federal STEM Policy & Advocacy: An Inside the Beltway Look 10/12/2022 – 10/14/2022
Washington D.C.
Selected for exclusive program to attend training in Washington D.C. federal Science, Technology, Engineering, and Medicine policy and advocacy at Vanderbilt Office of Federal Relations.

Biomedical Data Science Innovation Lab: Ethical Challenges of AI in Biomedicine 04/2022 – 06/2022
University of Virginia, Charlottesville, VA.
Selected to attend program on ethical challenges of AI in biomedicine including virtual microlabs followed by a one week in-person workshop.

Responsible Data Science Workshop Series, University of Oregon, Eugene, OR
Algorithmic Bias February 18, 2022
Equality in Data April 22, 2022
Data Privacy May 20, 2022

Relational Leadership Institute, OHSU, Portland, OR. 10/2021 – 11/2021
Virtual healthcare leadership training to develop strategies for building teams, reshaping organizations, and supporting the well-being of team members. Training on collaboration styles, motivation skills, and advocacy.

Training Future Faculty Program, OHSU, Portland, OR. 09/2021 – 04/2021
Participating in a teaching training program that includes workshops, opportunities for observation and feedback, online asynchronous course, and participation in a professional development group from January through April.

Cancer in the Under-Privileged, Indigent, or Disadvantaged Summer Fellowship 06/2014 – 08/2014
Johns Hopkins University, Baltimore, MD.
Attended summer fellowship after 1st year of medical school at Johns Hopkins University School of Medicine with lectures on cancer specifically in underserved populations and conducting bench research on breast cancer.

AWARDS AND HONORS

American Medical Informatics Association Academic Forum Best Paper Award November 7, 2022
Development of an Online Training Module on Algorithmic Bias in Health Care for Clinicians

Catalyzing Informatics Innovation (CI2) Scholar, Vanderbilt University Medical Center 2022-2023

RESEARCH EXPERIENCE

Research Intern, Digital Medicine Society 01/2023 – present
Led a systematic review for defining a core digital measure set for physical activity across therapeutic areas as part of a research internship with the non-profit organization, Digital Medicine Society.

Principal Investigator 08/2022 - present
Development and Validation of an AI in Healthcare Patient Literacy Measure
Grant: Stead Foundation, up to \$20,000, 09/2022 - 06/2023.

Researcher 01/2021 – present
Neuroethical Analysis of Medical Invasiveness in the use of Neurotechnology
OHSU, Portland, OR

PI: Eran Klein, MD, PhD, Portland Veteran Affairs Medical Center, Portland, OR
Extracted the meaning of invasiveness from a systematic review of neuroethics literature.

Co-Investigator 10/2020 – 01/2022

Clinical Photography Processes (ClinPhoto) Study for Photo Diversity Repository

PI: Linda Felver, PhD, OHSU, Portland, OR

Investigating the current workflow for taking clinical photographs: how that workflow influences the ability to obtain photographs on diverse skin tones, and ways to improve the process. Wrote IRB

Visiting Student 05/2014 – 08/2014

HOXA5 Genes in Breast Cancer

PI: Saraswati Sukumar, PhD, Johns Hopkins University School of Medicine, Baltimore, MD

Conducted bench research on the expression of HOXA5 gene in breast cancer.

Student Researcher 01/2012 – 07/2012

Use of Continuous EEG in Neuro-ICU Patients

PI: Laith Altaweel, PhD, Inova Fairfax Hospital, Fairfax, VA

Retrospective study on the use of continuous EEG in Neuro-ICU patients.

Student Researcher 01/2011 – 05/2011

Modeling Cancer Metastasis Using Cellular Automata

PI: Lemont Kier, VCU, Richmond, VA

Participated in the planning stages for the probability-based computer modeling of cancer metastasis using cellular automata.

TEACHING EXPERIENCE

Academic Hospitalist, Portland VA Medical Center, Portland, OR 12/2020 – 05/2022

Worked as attending on inpatient general medicine teaching service with residents and students about one week every 6-8 weeks during period of clinical informatics fellowship.

Skills: Clinical teaching, clinical care, leadership

Practice of Medicine Course Co-Leader, VCU School of Medicine, Richmond, VA 09/2016-04/2017

Worked with group of 10 1st year medical students to teach physical exam and patient interview skills.

Skills: Clinical teaching, leadership

Course Assistant, BMIF 7350: Technology & Society 09/2022 – 12/2022

Helped to moderate discussions in a small-group based course on technology and society. Ran class session.

Teaching Assistant, BMI 505F: Fellows' Meeting 09/2021 – 12/2021

Moderated group meetings, provided course communication, developed schedule and tracked attendance.

CLINICAL EXPERIENCE

Admitting Hospitalist, Vanderbilt University Medical Center, Nashville, TN 3/2023 – present

Served as part-time admitting hospitalist on general inpatient medicine wards for weekend evening shifts on average of 4 shifts per month.

Academic Hospitalist, Portland VA Medical Center, Portland, OR 12/2020 – 05/2022

Worked as attending on inpatient general medicine teaching service with residents and students about one week every 6-8 weeks during period of clinical informatics fellowship.

Skills: Clinical teaching, clinical care, leadership

PROFESSIONAL SERVICE AND VOLUNTEER EXPERIENCE

Advisory Board Member – OSA VA-DOE Project 03/2023 - present

Member of advisory board for joint project of Department of Veterans Affairs and Department of Energy on “Reducing Cardiovascular and Metabolic Morbidity: Deep Phenotyping of Obstructive Sleep Apnea, a Model for Targeted Treatment for Modifiable Risk Factors,” as an expert on artificial intelligence bias.

Centers of Excellence in ELSI Research (CEER) Annual Meeting Planning Committee 02/2023 – present

Participating in planning committee for putting together virtual meeting for CEER annual meeting including considering how the meeting would proceed, when it would occur, and it would be conducted.

Clinical Decision Support Committee, OHSU, Portland, OR 11/2020 – 06/2022

Led resident on rotation in performing QI review of BPA on testing for *Clostridioides difficile*. Helped to implement recommendations from review. BPA tune-up of most commonly used BPAs, evaluating which to keep, adjust, or remove. Review of COVID testing BPA and testing protocol. Submitted SBAR reports for these projects. Conducting review of behavioral flags for patient violence to identify sources of bias in the process.

Skills: leadership, quality improvement, BPA build, management of BPAs, SBAR reports

Bridge2AI Ethics Core 07/2022 – present

Working within Bridge2AI ethics core on documenting the sources of potential harms from AI systems and ways to address those harms.

Journal Article Review 09/2022

Cambridge Quarterly of Healthcare Ethics

Reviewed and provided recommendation on article for peer-review journal.

Scientific Program Committee 01/2022 – 11/2022

American Medical Informatics Association

Selected to participate in AMIA SPC to help oversee review process for submissions. Will supervise reviewers and develop a summary of submitted reviews and make a recommendation on each submission.

Diversity, Equity, and Inclusion Committee 11/2021 – present

American Medical Informatics Association

Participating in the newly formed AMIA DEI committee as a member of the education, governance, and policy subcommittee in an effort to spread knowledge on DEI principles as well as incorporate those principles into the organization. **Education Co-Chair** in education, governance, and policy committee. 1-year term 2023-2024.

Diversity, Equity, and Inclusion Committee 11/2020 – 06/2022
Department of Medical Informatics and Epidemiology, OHSU, Portland, OR
To improve diversity in the field of informatics through policy review, outreach, and learning through journal clubs and book clubs.

CrowdDoing, Medicinal Foods Project 11/2020 – present
Serving as a volunteer medical advisor for internet-based citizen science project on the use of medicinal foods to help improve sleep, decrease stress, and decrease anxiety.

Peer-Reviewer 01/2021 and 10/2021
Society of General Internal Medicine Conference
Reviewed proposals for SGIM annual meet in the area of innovations in healthcare delivery and diversity, equity, and inclusion.

Emergency Medical Technician 01/2011 – 04/2014
Tuckahoe Volunteer Rescue Squad, Henrico, VA
Served as a basic life support assistant initially, and then squad leader in providing BLS care in emergency situations and managing a team.

Project Academic, Career, and Education experiences (ACEe) 01/2014 – 04/2014
VCU, Richmond, VA
Served as mentor for high school student interested in the health care field. Provided support for the completion of student project.

PUBLICATIONS AND PRESENTATIONS

Peer Reviewed Articles

Collins, B.X., & Klein, E. Invasive neurotechnology: A study of the concept of invasiveness in neuroethics. *Neuroethics*. 2023.

Collins, B.X., Pierce, P., & Felver, L. Clinical photography processes (ClinPhoto) study for photo diversity. *Journal of Visual Communications in Medicine*. 2022. <https://doi.org/10.1080/17453054.2022.2086453>

Collins, B.X., Travaline, J., & Mulhall, P. Nonspecific Interstitial Pneumonia in a Patient with HIV. *SN Comprehensive Clinical Medicine*. 2019, Mar; 1(3): 203-204.

Collins, B.X., & Corey, S.J. Mature Ovarian Teratoma After Treatment for Unilateral Retinoblastoma with Nonmutated RB1. *Journal of Pediatric Hematology/Oncology*. 2017, Aug; 39(6): 485-486.

Oral Presentations and Panels

Collins, B.X. [Panelist] (April 2023). Addressing Health Equity Through Artificial Intelligence (AI) and Machine Learning (ML): Real or Hype? Fisk University. Nashville, TN.

Collins, B.X. (April 2023). What Do You Need to Know About Artificial Intelligence in Healthcare? TEDx Vanderbilt University. Nashville, TN.

Collins, B.X. and Hendricks-Sturup R [Moderators]. (March 2023). A Discussion on Race as a Variable in Artificial Intelligence. AIM-AHEAD. [Virtual].

Collins, B.X. (February 2023). Understanding AI Bias in the Context of Clinical Reasoning. University of North Carolina, Clinical Informatics Fellows Seminar. [Virtual].

Collins, B.X. (February 2023). Connecting the dots (nodes): Patient demographic factors and unclear ontologies in the study of artificial intelligence for healthcare. Center for Bioethics and Society Faculty Research Seminar. VUMC, Nashville, TN.

Collins, B.X. (November 2022). Development of an Online Training Module on Algorithmic Bias in Healthcare for Clinicians. Linking Informatics and Education Academic Forum Conference (LIEAF) at AMIA Symposium, Washington D.C.

Collins, B.X. (October 2022). Mis(trust) of Minority Populations in Healthcare and the Use of Emerging Technology. Oregon Health & Science University Department of Medical Informatics and Clinical Epidemiology. [Virtual]

Collins, B.X. (September 2022). Attention to the Influence of Race and Ethnicity on Patient Trust in Artificial Intelligence for Healthcare. Vanderbilt Clinical Informatics Center InformaticCon. Nashville, TN.

Collins, B.X. (May 2022). Algorithmic Bias in Health Care: What do Clinicians Need to Know? Research Week, OHSU, Portland, OR.

Collins, B.X. (March 2022). Ethical Considerations in Interhospital Transfers to OHSU. Mission Control Governance Council, OHSU, Portland, OR.

Collins, B.X., Pierce, P., and Felver, L. (November 2021). Examining the Sociotechnical Process of Clinical Photography to Encourage Photo Diversity in Medical Education. AMIA Symposium, San Diego, CA.

Collins, B.X. (August 2021). Rotation Summary Report to Executive Leadership Team, OCHIN, Portland, OR.

Collins, B.X. (June 2021). Rethinking Drug and Alcohol Screening and Intervention. Clinical Operations Review Committee, OCHIN, Portland, OR.

Collins, B.X. (February 2020). Pericardial Effusion and Cardiac Tamponade. Morbidity & Mortality Rounds, Temple University Hospital, Philadelphia, PA.

Collins, B.X. (November 2018). CMV (cytomegalovirus) in transplant patients. Morning Report, Temple University Hospital, Philadelphia, PA.

Collins, B.X. (July 2014). HOXA5 Expression in Breast Cancer. Cancer in the Under-Privileged, Indigent, or Disadvantaged Summer Fellowship, Johns Hopkins University, Baltimore, MD.

Collins, B.X. (April 2012). The Association of Continuous EEG with Neurocritical Care Patient Outcome. George Mason University Neuroscience Symposium, Fairfax, VA.

Posters

Collins, B.X. (October 2022). Recommendations to Clinicians on Avoiding Algorithmic Bias in the Use of Artificial Intelligence in Healthcare, Vanderbilt University, Nashville, TN.

Collins, B.X. (April 2022). The Emergence of a Digital Health Care Setting. Medicine Research Retreat, OHSU, Portland, OR.

Collins, B.X. (April 2017). An Evidence-Based Approach to Designing Virtual Patients. Medical Education Symposium, Virginia Commonwealth School of Medicine, Richmond, VA.

Workshops Led

Working with artificial intelligence in the clinical setting and minimizing the harm of algorithmic bias for patients
Society of General Internal Medicine Annual Meet, Aurora, CO. May 11, 2023

Journal Clubs

OHSU Informatic Journal Club February 17, 2022
Natural language word embeddings as a glimpse into healthcare language and associated mortality surrounding end of life

OHSU Informatics Journal Club August 26, 2021
Assessing data adequacy for high blood pressure clinical decision support: A quantitative analysis

OHSU Informatics Journal Club January 21, 2021
Factors associated with nurse well-being in relation to electronic health record use: A systematic review

OHSU Informatics Journal Club September 17, 2020
Operationalizing resilient healthcare concepts through a serious video game for clinicians

CERTIFICATION/LICENSURE

American Board of Internal Medicine
Advanced Cardiovascular Life Support
Basic Life Support

Tennessee State Medical License
Drug Enforcement Administration

- Controlled Substance Registration
- American Academic of Addiction Psychiatry MAT Online Waiver Training

Collaborative Institutional Training Initiative (CITI)

- Human Subjects Research
- Responsible Conduct of Research

Institution for Healthcare Improvement (IHI)

- Quality and Safety Certificate

Epic Physician Builder

- Basic and Advanced
- Analytics

PROFESSIONAL ORGANIZATION MEMBERSHIPS

Society of General Internal Medicine
American College of Physicians
American Medical Informatics Association
American Society for Bioethics and Humanities
Healthcare Information and Management Systems Society

TECHNICAL SKILLS

Proficient in: R, JavaScript, HTML, CSS, Zotero, CPRS/Vista, Epic, QDA Miner, Atlas.ti, Covidence

HOBBIES AND INTERESTS

Reading, writing, video games, web programming, human-computer interaction, interface design, clinical decision support, health disparities, philosophy, ethics, social justice, history, baseball, basketball