

**BIOGRAPHICAL SKETCH**

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NAME: Benjamin Bates

eRA COMMONS USER NAME (credential, e.g., agency login): benbates

POSITION TITLE: Instructor, Department of Medicine, Rutgers Robert Wood Johnson Medical School

**EDUCATION/TRAINING**

INSTITUTION AND LOCATION	DEGREE (if applicable)	Start Date MM/YY YY	Completion Date MM/YYYY	FIELD OF STUDY
University of Mississippi, Oxford, MS	BA	08/2008	05/2013	Biochemistry
University of Mississippi, Oxford, MS	BA	08/2008	05/2013	Mandarin & International Relations
University of Mississippi Medical Center, Jackson, MS	MD	08/2013	05/2017	Doctor of Medicine
Rutgers Center For Pharmacoepidemiology and Treatment Science, New Brunswick, NJ	Post-Doctoral Fellowship	07/2020	06/2022	Cancer Pharmacoepidemiology
Rutgers Graduate School of Biomedical Sciences, New Brunswick, NJ	MS	07/2020	Est 06/2023	Clinical and Translational Science

**A. Personal Statement**

I am board certified in Internal Medicine and have received post-doctoral research training in cancer pharmacoepidemiology and health services research. My research focuses on the treatment and health outcomes of real-world patients with cancer. In part through improvement in cancer screening and treatments, there are more 18 million cancer survivors in US today. Survivorship begins at cancer diagnosis and requires cooperation and communication between that patient and the patient's care team, which includes oncology, other specialists, and primary care. I've received support from the New Jersey Commission on Cancer Research and the Robert E. Leet and Clara Guthrie Patterson Trust Mentored Research Award to support by career development as a physician scientist focused on developing a clinical and research career focused on the care and health outcomes of patients with cancer. Most recently I received the Cancer Institute of New Jersey Cancer Survivorship Research Centers Pilot Award Program support for a one-year pilot grant to support research on primary care involvement during cancer treatment. My manuscripts have been accepted into *Journal of Clinical Oncology*, *Annals of Internal Medicine*, and *Circulation: Cardiovascular Quality and Outcomes*, and I have presented more than a dozen abstracts related to original research or as part of symposia at national and international conferences. I'm currently serving as the Secretary for International Society for Pharmacoepidemiology Cancer Special Interest Group, co-lead of the National COVID Cohort Collaborative Oncology Domain team and as an Editorial Fellow for the ASCO Journals Editorial Fellowship (2022-2023).

Ongoing and recently completed projects that I would like to highlight include:

Ongoing

## Cancer Institute of New Jersey Cancer Survivorship Research Centers Pilot Award Program

4/1/2023-3/31/2024

**Bates (PI)***Novel Cancer Therapies and The Changing Landscape of Cancer Survivorship: What is the Role for Primary Care During Cancer Treatment*

## Robert E. Leet and Clara Guthrie Patterson Trust Mentored Research Award

1/31/2021-7/30/2023

**Bates (PI)***Immune Checkpoint Inhibitor Use and Health Outcomes Among Patients with Melanoma and Non-Small Cell Lung Cancer*Recently Completed

## New Jersey Commission on Cancer Research Postdoctoral Research Fellowship

1/1/2020-6/31/2022

**Bates (PI)***Association Between Air Pollution and Health Outcomes Of Patients with Breast Cancer***B. Positions, Scientific Appointments, and Honors****Positions**

2022-Present	ASCO Journals Editorial Fellowship (2022-2023)
2022-Present	Assistant Director, Rutgers-RWJMS Internal Medicine Clinician Research Track
2022-Present	Instructor, Department of Medicine, Rutgers-RWJMS; Core Member, Institute for Health, Health Care Policy, and Aging Research / Center for Pharmacoepidemiology and Treatment Science
2020-2022	Cancer Pharmacoepidemiology Post-Doctoral Fellow at Rutgers-Pharmacoepidemiology and Treatment Science, New Brunswick, NJ
2017-2020	Internal Medicine Resident Rutgers-Robert Wood Johnson Medical School, New Brunswick, NJ
2014-2015	Graduate Research Assistant UM Cancer Research Institute University of Mississippi Cancer, Jackson, MS
2010	Medicinal Chemistry Intern at NIH Center of Biomedical Research Excellence, University of Mississippi, Oxford, MS

**Other Experience and Professional Memberships**

2022-Present	Department of Medicine, Division of General Internal Medicine Tenure Track Faculty Search Committee
2021-Present	International Society of Pharmacoepidemiology, Asia Conference Steering Committee
2021-Present	International Society of Pharmacoepidemiology, Secretary for the Cancer Special Interest Group
2020-Present	Member, American Society of Clinical Oncology
2020-2022	Rutgers-RWJMS Clinician Research Track Program Manager
2019-Present	Member, International Society of Pharmacoepidemiology
2019-Present	Abstract Reviewer, International Society of Pharmacoepidemiology
2017-Present	Member, American College of Physicians
2017-Present	Member, American Medical Association
2014-2015	Researcher UM Cancer Research Institute (5/26/2014-1/31/2015)
2011	Middlebury Mellon Grant (2011)
2011	Middlebury Sustainability Grant (2011)
2011	University of MS (UM) Honor's Research Funds (2011)
2010	Medicinal Chemistry Intern at NIH Center of Biomedical Research Excellence

**Honors**

2020	Inducted, Alpha Omega Alpha Medical Honors Society
2019	Humanism & Professionalism Award

2019 "Best Oral Presentation" Rutgers-RWJ Resident and Fellows Research Day  
 2016 1st Place Rural Interdisciplinary Conference Experience Bowl at UM

### C. Contributions to Science

1. **Treatment and Health Outcomes of Patients with Cancer:** Early in the COVID-19 pandemic, I joined a team of national scientists to evaluate health outcomes among patients with cancer. Using electronic health records harmonized from health systems across the US, we published some of the largest and earliest studies evaluating risks for mortality and COVID-19 breakthrough infections among patients with cancer in the US. Our findings have been presented at international conferences and published in *Journal of Clinical Oncology*. As part of R01 CA257197 (Hudson/Crabtree) that aims to recognize and test interventions to improve cancer survivorship within primary care, I have had the opportunity to work within an interdisciplinary team that includes renowned researchers in mixed methods and implementation science. I look forward to further mentorship in combining my background in large database studies with my interest to test clinical interventions to improve the care, quality of life, and survival of patients with cancer, especially during cancer treatment.
  - a. Hemler J, Howard J, **Bates BA**, Mikesell L, Hudson SV, Crabtree BF. Recent innovations in primary care cancer survivorship care delivery. National American Primary Care Research Group Nov 2022 (Oral Presentation)
  - b. Sharafeldin N, **Bates BA**, Vachhani P. How the Covid-19 Pandemic Reshaped the Management of Leukemia and Affected Patient Outcomes. *Current Treatment Options in Oncology*. 2022.
  - c. Song Q., **Bates BA**, Shao YR, Hsu FC, et al. (2022). "Risk and Outcome of Breakthrough COVID-19 Infections in Vaccinated Patients With Cancer: Real-World Evidence From the National COVID Cohort Collaborative." *J Clin Oncol*. 2022;40(13): 1414-1427.
  - d. Sharafeldin N, **Bates BA**, Song Q, Madhira V, Yan Y, Dong S, et al. Outcomes of COVID-19 in Patients With Cancer: Report From the National COVID Cohort Collaborative (N3C). *J Clin Oncol*. 2021;39(20):2232-46.
2. **Pharmacoepidemiology and Health Services Research:** I have been part of multiple research projects to evaluate the real world treatment, health services, and health outcomes among patients with cancer. Funding from the Robert E. Leet and Clara Guthrie Patterson Trust Mentored Research Award is supporting my research that evaluates the health services and health outcomes among patients with cancer underrepresented in randomized clinical trials of immune checkpoint inhibitors. I have led studies that aimed to develop and validate claims-based algorithms to recognize treatments and health outcomes. I have also been part of an inter-university collaboration to assess the use and risks of immunosuppressive therapies among a cohort of diverse patients with COVID-19 across the US. My presentations and publications reflect my capability to work with complex datasets to evaluate treatments and health outcomes.
  - a. **Bates BA**, Akhabue E, Nahass M., et al. Validity of ICD-10 Diagnosis Codes To Identify Acute Heart Failure Hospitalizations and Ejection Fraction Subtypes in National Medical Data. *Circulation Quality Care and Outcomes*. In Press.
  - b. **Bates BA**, Setoguchi S. Claims-based Algorithm to Define Breast Cancer Recurrence in SEER-Medicare Data. 37<sup>th</sup> Annual International Conference on Pharmacoepidemiology & Therapeutic Risk Management, Aug 2022 (Poster Presentation)
  - c. Andersen KM, **Bates BA**, Rashidi ES, Olex AL, Mannon RB, Patel RC, et al. Long-term use of immunosuppressive medicines and in-hospital COVID-19 outcomes: a retrospective cohort study using data from the National COVID Cohort Collaborative. *Lancet Rheumatol* 2022;4(1):e33-e41.
  - d. Mehta HB, An H, Andersen KM, Mansour O, Madhira V, Rashidi ES, **Bates BA**, Setoguchi S, et al. Use of Hydroxychloroquine, Remdesivir, and Dexamethasone Among Adults Hospitalized With COVID-19 in the United States : A Retrospective Cohort Study. *Ann Intern Med*. 2021;174(10):1395-403.
3. **Cardio-Oncology:** Cardiovascular (CV) disease influences the type of cancer treatment received and CV outcomes (e.g., myocardial infarction, heart failure, and cerebral vascular event) are common events among patients with cancer during treatment and in the years following treatment. Given the impact of cardiovascular disease on treatment and outcomes among patients with cancer, cardiovascular health

outcomes are a particular interest of my research. My grant from the Robert E. Leet and Clara Guthrie Patterson Trust Mentored Research Award includes the evaluation of acute and delayed-term cardiovascular outcomes among patients who receive immune checkpoint inhibitors. Below are cardiovascular studies that I have previously published or presented at conferences.

- a. **Bates BA**, Akhabue E, Nahass M, Mukherjee A, Hiltner E, et al. *Validity of International Classification of Diseases (ICD)-10 Diagnosis Codes for Identification of Acute Heart Failure Hospitalization and Health Failure with Reduced and Preserved Ejection Fraction in a National Medicare Sample*. *Circ Cardiovasc Qual Outcomes*. 2023 Feb;16(2)
- b. Gonzalez J, **Bates BA**, Setoguchi S, Gerhard T, Dave CV. Cardiovascular outcomes with SGLT2 inhibitors versus DPP4 inhibitors and GLP-1 receptor agonists in patients with heart failure with reduced and preserved ejection fraction. *Cardiovasc Diabetol*. 2023 Mar 10;22(1):54.
- c. **Bates BA**, Akhabue E, Nahass M, Mukherjee A, Hiltner E, et al. *Can Inpatient Claims Diagnoses Accurately Identify Heart Failure with Reduced and Preserved Ejection Fraction in Medicare Data*; Presented at American Heart Association Annual Meeting, Nov 2021 (Poster Presentation)
- d. **Bates BA**, Akhabue E, Nahass M, Mukherjee A, Hiltner E, et al; *Validity of ICD-10 Heart Failure Administrative Codes Among the Elderly in the United States*; Presented at 36<sup>th</sup> Annual International Conference on Pharmacoepidemiology & Therapeutic Risk Management, Aug 2021 (Poster Presentation)
- e. **Bates BA**, Richards C, Hall M, Kerut EK, Campbell W, McMullan MR. Evaluation of Athletes With Complex Congenital Heart Disease. *Echocardiography*. 2017;34:934–936.

**4. Climate-Related Events on Treatment and Health Outcomes Among Patients with Cancer:** I received post-doctoral research fellowship support from the New Jersey Commission on Cancer Research to evaluate the impact of air pollution on treatment and health outcomes of patients with cancer and multiple manuscripts related to the study aims are currently in varying phases of development. I organized two successful symposia related to evaluating the impact of the environment on treatment and health outcomes and have been part of a larger team of collaborators evaluating the impact of air pollution and extreme temperature on health outcomes among older patients with chronic comorbidities. I currently have an NCI K08 proposal under review that evaluates the impact of severe storms on the cancer treatment and health outcomes among patients with breast cancer.

- a. Nethery RC, Josey K, Gandhi P, Kim JH, Visaria A, **Bates BA**, Setoguchi S. Effects of Seasonal PM<sub>2.5</sub> Exposure on Cardiovascular and Thromboembolic Events in Older Medicare Beneficiaries with High-risk Chronic Conditions. *American Journal of Epidemiology*. In Press.
- b. **Bates BA**, Ping S, Kao YH, Lin CY, Rowett D, Setoguchi S. Environmental Pharmacoepidemiology Around the World: Climate Change, Medications, and Health Outcomes. *International Society of Pharmacoepidemiology Asian Conference for Pharmacoepidemiology*, Oct 2022 (Symposium)
- c. **Bates BA**, Nethery R, Bandera E, Setoguchi S. Association Between Air Pollution and Mortality Among Older Women with Breast Cancer in the US. *Society for Epidemiologic Research*, July 2022 (Poster Presentation)
- d. **Bates BA**, Hennessy S, Coplan P, Bell M, Nethery R, Setouchi S. A Call for 'Environmental Pharmacoepidemiology': Medications, Global and Local Environments, and Health Outcomes. *International Society of Pharmacoepidemiology*, Aug 2021 (Symposium)