

## Benjamin W. Barrett

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### Education

Sc.M., Johns Hopkins University Bloomberg School of Public Health, 2018 (Epidemiology, Cancer Track)

B.A. Cum Laude with Honors in Sociology, Bucknell University, 2016 (double major in Biology and Sociology)

### Work & Research Experience

**2018 – Present**      Biostatistician for the MACS/WIHS Combined Cohort Study (formerly known as the Multicenter AIDS Cohort Study (MACS))

- Role & Responsibilities:
  - Clean participant data collected in semi-annual study visits and enter into summary files for distribution within the data center
  - Assemble datasets for investigators with approved study concepts
  - Specimen selection using matching techniques
  - Generate figures and tables for semi-annual reports
  - Develop programs for data management and analysis in SAS, R, and Stata
  - Conduct analyses for projects when requested by investigators
    - Longitudinal and cross-sectional analyses
    - Dataset assembly: variable creation and accounting for missing data
    - Generate publication-quality figures and tables
    - Run common descriptive statistical tests and build regression models
    - If appropriate, use more advanced methods such as machine-learning
    - Assist in writing manuscripts to be submitted for publication
    - Assist in designing and developing posters and presentations to be delivered at academic conferences
  - Deliver presentations within the data center that report on ongoing projects
  - Work with other data managers and biostatisticians to develop optimal analytic approaches for concepts and data management techniques
  - Keep careful documentation of study and programmatic decisions for later reference
    - Built an R Shiny app to interface with Airtable that is now widely used throughout the data center
    - Designed and set up a server-hosted code library that is version-controlled through Git and trained coworkers in its use
  - Attend conferences to further develop professional skills

**2018** Teaching Assistant for Spatial Analysis III: Spatial Statistics, offered through the Johns Hopkins University Bloomberg School of Public Health Biostatistics Department

- Roles & Responsibilities:
  - Attended every class session and was available to answer student questions during class or via email
  - Graded problem sets, including detailed comments regarding grading decisions, and entered grades into gradebook
  - Attended office hours and was available to work with students who came in seeking help
    - Explained concepts and worked through any issues with software – ArcGIS, R, Google Earth Pro, and SaTScan

**2017 – 2018** Applied Epidemiological research into cervical cancer care among women in Peru under Johns Hopkins University Bloomberg School of Public Health Associate Professor Anne Rositch

- Roles & Responsibilities:
  - Helped to design a Knowledge, Attitudes, and Practice (KAP) survey that was implemented in Iquitos and Lima, Peru
    - Wrote survey questions that captured data to be used in geospatial analyses
    - Designed the protocol for collecting and recording GPS data, which all surveyors were trained in
  - Cleaned KAP survey data in R for distribution to study investigators
    - Involved translating survey questions from Spanish to English, and vice-versa
  - Conducted field research in Lima
    - Collected GPS data that simulated the distance and time sacrifices women must make as they progress along the cervical cancer care continuum
    - Worked with Peruvian collaborators to ensure successful completion of field research
  - Analyzed GPS data in ArcGIS to visually display the distance and time cost of accessing cervical cancer care in Lima and Iquitos
  - Designed and led an investigation that used geospatial analytic methods to determine factors associated with cervical cancer screening uptake among women in Iquitos
    - KAP survey data analyzed in R
    - Maps generated using ArcGIS
    - Completed the project as my Master's thesis
    - Wrote a manuscript currently under review at a peer-reviewed journal

**2017 – 2018** Data Manager for the Multicenter AIDS Cohort Study (MACS), a prospective cohort study examining HIV-1 infection in gay and bisexual men in Baltimore, Chicago, Pittsburgh, and Los Angeles, that first began recruiting in 1984 and continues through present day

- Roles & Responsibilities:

- Cleaned participant data collected in semi-annual study visits and entered into summary files for distribution within the data center
- Assembled datasets for investigators with approved study concepts
  - Read approved concepts to identify which variables were required, and generated a dataset with the correct variables (existing and newly created, if necessary), participants, and time periods
  - Constant communication with investigators to ensure that all study needs were met
- Used matching techniques to select specimens to be shipped to investigators from the study specimen repository
  - Individual and frequency matching
  - Ensured that high-priority specimens were not selected unless specifically approved, and made sure that all specimens met quantity and thaw requirements
- Generated figures and tables for semi-annual MACS reports, which were circulated and presented at semi-annual conferences
- Developed programs for data management and analysis in SAS, R, and Stata
- Delivered presentations within the data center to report on ongoing projects
- Worked with other data managers and biostatisticians to develop optimal analytic approaches for concepts and data management techniques
- Kept careful documentation of study and programmatic decisions for later reference
  - Files relayed to central server folders via UNIX commands

**2016 – 2017** Data Abstractor for a systematic review of pneumococcal vaccine uptake and efficacy worldwide, led by the Johns Hopkins University International Vaccine Access Center (IVAC)

- Roles & Responsibilities:
  - Careful and critical reading of published literature
    - Observational studies and clinical trials
  - Abstracted data in a comprehensive review of published studies on Pneumococcal Conjugate Vaccine (PCV) immunogenicity and impact of currently licensed PCV products
  - Entered abstracted information into DistillerSR systematic review software
- Resulted in Acknowledgement within the PCV Product Assessment
  - This is a technical document that provides the Gavi Secretariat with a synthesis of the biologic evidence and programmatic considerations surrounding performance, effectiveness, and impact for current PCV products: PCV10-Synflorix and PCV13-Prevnar

**2015** Epidemiological research performed at the Statens Serum Institut Department of Infectious Disease Epidemiology in Copenhagen, Denmark under department director Kåre Mølbak

- Summer internship that involved the quantitative analysis of data captured in the new real-time Mikrobiologidatabase (MiBa)
- Roles & Responsibilities:
  - Generated reports on the utilization of microbiology lab tests by the Danish population

- Demographics, types of tests received, and when and where tests were received
- Delivered a presentation of results to the entire infectious disease department
- Statistical data analysis in SAS
- Documented programmatic decisions to allow for the research to seamlessly continue once my internship ended

**2014 – 2016** Biological research into the etiology of White-Nose Syndrome in *Myotis lucifugus* bats under Bucknell University Professor of Biology Kenneth Field

- Roles & Responsibilities:
  - Field specimen collection
  - Live specimen care
  - RNA extraction
  - qPCR
  - ELISA
  - Whole transcriptome analysis
  - Statistical genetics in R
  - Analyzed ultraviolet images of bat wings using Cellprofiler 2.1.0
    - Using a tablet traced fluorescent regions of the wings, which indicated infection with *Pseudogymnoascus destructans* (the fungus that causes White-Nose Syndrome), and helped to quantify severity of infection
    - Resulted in a publication within a peer-reviewed journal

**2012 – 2016** Bucknell University Presidential Fellowship research in Sociology under Bucknell University Associate Professor T. Elizabeth Durden

- Quantitative research that primarily focused on Latinx migrants to the United States
  - Remittance patterns, effect of anti-immigrant legislation, and access to healthcare in the U.S.
- Roles & Responsibilities:
  - Critical reading of published literature
  - Manuscript preparation
  - Statistical data analysis in SAS
  - Designed and led a research project analyzing remittance patterns captured within Mexican Migration Project data
    - Project began in 2013, under the Bucknell University Summer Program for Undergraduate Research, and culminated in a publication within a peer-reviewed journal
  - Designed and led an investigation into the association between race/ethnicity and U.S. nativity on the uptake of colorectal cancer screening in the U.S.
    - Completed the project as my undergraduate Honors thesis
    - Analyzed National Health Interview Survey data in SAS, including appropriately correcting for study design with SAS SUDAAN
    - Resulted in a publication within a peer-reviewed journal

### Applicable Skills

ArcGIS Mapping Platform

DistillerSR Systematic Review Software

Google Cloud Platform  
 Microsoft Office Suite  
 Python Programming Language – Limited working proficiency  
 R Programming Language  
 SAS Statistical Software  
 SPSS Statistical Software  
 Stata Statistical Software  
 Sublime Text Editor Software

### **Academic Papers**

**Barrett, B.W.**, Abraham, A.G., Dean, L.T., Plankey, M.W., Friedman, M.R., Jacobson, L.P., Teplin, L.A., Gorbach, P.M., & Surkan, P.J. 2020. Social inequities contribute to racial/ethnic disparities in depressive symptomology among men who have sex with men. *Social Psychiatry and Psychiatric Epidemiology*. (Revise & Resubmit)

**Barrett, B.W.**, Paz-Soldan, V.A., Mendoza-Cervantes, D., Sánchez, G.M., Córdova López, J.J., Gravitt, P.E., & Rositch, A.F., on behalf of the Proyecto Precancer study group. 2020. Understanding geospatial factors associated with cervical cancer screening uptake in Amazonian Peruvian women. *JCO Global Oncology*. (Under Review)

Hessol, N.A., **Barrett, B.W.**, Margolick, J.B., Plankey, M., Hussain, S., Seaberg, E.C., & Massad, L.S. 2020. Risk of smoking-related cancers among women and men living with and without HIV. *AIDS*. (In Progress)

**Barrett, B.W.** & Durden, T.E. 2019. Colorectal cancer screening uptake among US Latino subgroups. *International Journal of Migration, Health and Social Care*, 15(4), 285-293.

**Barrett, B.W.** & Durden, T.E. 2018. Banking on Remittances? How opening a bank account in the United States affects Mexican migrants sending money back to Mexico. *Mexican Studies/Estudios Mexicanos*, 34(2), 165-190.

Moore, M.S., Field, K.A., Behr, M.J., Turner, G.G., Furze, M.E., Stern, D.W.F., Allegra, P.R., Bouboulis, S.A., Musante, C.D., Vodzak, M.E., Biron, M.E., Meierhofer, M.B., Frick, W.F., Foster, J.T., Howell, D., Kath. J.A., Kurta, A., Nordquist, G., Johnson, J.S., Lillely, T.M., **Barrett, B.W.**, & Reeder, D. 2017. Energy conserving thermoregulatory patterns and lower disease severity in a bat resistant to the impacts of white-nose syndrome. *Journal of Comparative Physiology B*, 188, 163-176.

### **Academic Conferences**

Lake, J.E., Wang, R., **Barrett, B.**, Funderburg, N., Bowman, E., Debroy, P., Candelario, J., Teplin, L., McGuinness, J., Bolan, R., McKay, H., Plankey, M., Brown, T.T., & Currier, J.S. “Hormone Use and HIV Alter Cardiovascular Biomarker Profiles in Transgender Women.” Conference on Retroviruses and Opportunistic Infections, 2020 (Boston). Poster presentation & Themed discussion.

Slama, L., **Barrett, B.**, Abraham, A., Palella, F.J., Kingsley, L., Viard, J.P., Lake, J.E., & Brown, T.T. “Risk for Incident Diabetes is Greater in Prediabetic Men with HIV than Without HIV.” Conference on Retroviruses and Opportunistic Infections, 2020 (Boston). Poster presentation.

Debroy, P., **Barrett, B.**, Erlandson, K.M., Budoff, M., Brown, T.T., Price, J.C., Post, W., Stosor, V., Lellock, C., D’Souza, G., & Lake, J.E. “Relationships between Hepatic Steatosis and Frailty Differ by HIV Serostatus.” Conference on Retroviruses and Opportunistic Infections, 2020 (Boston). Poster presentation.

Slama, L., **Barrett, B.**, Abraham, A., Palella, F.J., Kingsley, L., Viard, J.P., Lake, J.E., & Brown, T.T., for the Multicenter AIDS Cohort Study (MACS). “Risk for Incident Diabetes is Greater in Pre-Diabetic Men with HIV than Without HIV: The Multicenter AIDS Cohort Study.” International Workshop on Adverse Drug Reactions and Co-Morbidities in HIV, 2019 (Basel, Switzerland). Oral presentation.

Hessol, N.A., **Barrett, B.**, Margolick, J.B., Plankey, M., Hussain, S., Seaberg, E.C., & Massad, L.S. “Risk of Smoking-related Cancers among Women and Men living with and without HIV.” International Conference on Malignancies in HIV/AIDS, 2019 (Bethesda). Highlighted poster presentation.

**Barrett, B.W.**, Paz-Soldán, V.A., Gravitt, P.E., & Rositch, A.F., on behalf of the Proyecto Precancer study group. “Characterizing the Geospatial Features in Cervical Cancer Screening Uptake Among Amazonian Peruvian Women.” Johns Hopkins University Bloomberg School of Public Health Department of Epidemiology Master’s Symposium, 2018. Poster presentation.

Rositch, A., **Barrett, B.**, Mendoza-Cervantes, D., Paz-Soldán, V., & Gravitt, P. “Characterizing the Resource Burden of Women across the Cervical Cancer Care Continuum under Different Programmatic Scenarios.” International Papillomavirus Conference, 2018 (Sydney, Australia). Poster presentation.

Rositch, A., **Barrett, B.**, Gravitt, P., & Paz-Soldán, V. “Increasing our Understanding of Factors Associated with Cervical Cancer Screening Uptake in Peruvian Women by Incorporating Geospatial Information.” International Papillomavirus Conference, 2018 (Sydney, Australia). Poster presentation.

**Barrett, B.W.** & Durden, T.E. “United States Assimilation and the Remittance and Savings Patterns of Mexican Migrants.” Bucknell University Kalman Symposium, 2014. Poster presentation.

**Barrett, B.W.** & Durden, T.E. “United States Assimilation and the Remittance and Savings Patterns of Mexican Migrants.” American Sociological Association Conference, 2014 (San Francisco). Roundtable session.

**Barrett, B.W.** “Gender’s Effect on Sexual Promiscuity.” Eastern Sociological Society Conference, 2013 (Boston). Poster presentation.

## Service

**Community**

2014 – 2015    Tau Kappa Epsilon Beta Mu Chapter annual fundraiser for the Alzheimer's Association

**University**

2017 – 2018    Co-Leader of the Cancer Epidemiology and Control Journal Club at Johns Hopkins University Bloomberg School of Public Health

2013 – 2014    Peer tutor in Biology at Bucknell University

**Peer-Reviewed Journal**

2017 – Present        Ad-hoc journal reviewer, Hispanic Health Care International

**Awards and Honors**

2018    Recipient of the Johns Hopkins University Bloomberg School of Public Health Department of Epidemiology Trudy Bush Fund award, available to Master's students with a specialization in women's health

2015 - 2016    Order of Omega Fraternity Honor Society

2013 – 2016    Alpha Lambda Delta National Honor Society for First-Year Students

2013    Recipient of the Bucknell University Summer Undergraduate Research Program Stipend

2012 – 2016    Bucknell University Presidential Fellow Scholarship

2010    Eagle Scout