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EDUCATION:

The Ohio State University , Columbus, OH College of Public Health Doctor of Philosophy, Epidemiology University Fellowship	Oct. 2008 - June 2012
Columbia University , New York, NY Mailman School of Public Health Master of Public Health	Sept. 2001 - Feb. 2003
La Salle University , Philadelphia, PA Bachelor of Arts, Biology and Psychology Magna Cum Laude, Dean's List, Graduated with Honors	Sept. 1996 - May 2000

EMPLOYMENT:

Geisinger, Danville, PA Department of Population Health Sciences Associate Professor Co-Director, Environmental Health Institute	May 2019 - Present
Geisinger, Danville, PA Department of Epidemiology and Health Services Research Assistant Professor Co-Director, Environmental Health Institute	July 2013 – May 2019
Geisinger, Danville, PA Center for Health Research Research Associate	June 2012 - July 2013
Geisinger, Danville, PA Center for Health Research Project Manager/Consultant	Jan 2005 - May 2012
Ohio Department of Health, Columbus OH Injury Prevention Program Researcher III	Sept. 2009 - May 2010
University of Pennsylvania, Philadelphia, PA Institute on Aging, Alzheimer's Disease Center Research Coordinator	Jan. 2003 - Nov. 2004
Columbia University, New York, NY Center for Psychosocial Research of Health and Illness Program Coordinator	Oct. 2001 - Dec. 2002

Thomas Jefferson University, Philadelphia, PA
Center for Applied Research in Aging and Health
Research Assistant

June 2000 - Aug. 2001

ADDITIONAL FACULTY APPOINTMENTS

Johns Hopkins Bloomberg School of Public Health
Department of Environmental Health and Engineering
Adjunct Assistant Professor

January 2016 - Present

PUBLICATIONS:

Peer Reviewed Journal Articles

1. **Hirsch AG**, Nordberg CM, Bandeen-Roche K, Pollack J, Poulsen MN, Moon KA, Schwartz BS. Urban-rural differences in health care utilization and COVID-19 outcomes in patients with type 2 diabetes. *Preventing Chronic Disease*. 2022. In press.
2. Al-Sayouri, SA, Pollak JS, Peters A, **Hirsch AG**, Kern R, Tan B, Schleimer RP, Schwartz, BS. Schwartz B. Strong and consistent associations of precedent chronic rhinosinusitis with risk of non-cystic fibrosis bronchiectasis. *JACI*. 2022. In press.
3. **Hirsch AG**, Durden TE, Silva J. Linking electronic health records and in-depth interviews to inform efforts to integrate social determinants of health into health care delivery: Protocol for a qualitative research study. *JMIR Research Protocols*. 2022; 1(3):e36201
doi: [10.2196/36201](https://doi.org/10.2196/36201).
4. Moon K, Pollak J, Poulsen M, Heaney C, **Hirsch AG**, Schwartz B. Risk factors for Lyme disease stage and manifestation using electronic health records. *BMC Infectious Disease*. 2022; 1–13.
<https://doi.org/10.1186/s12879-021-06959-y>
5. Thorpe LE, Adhikari A, Lopez P, Kanchi R, McClure LA, **Hirsch AG**, Howell CR, Zhu A, Alemi F, Rummo P, Ogburn EL, Algur Y, Nordberg CM, Poulsen MN, Long L, Carson AP, DeSilva SA, Meeker M, Schwartz BS, Lee DC, Siegel KR, Imperatore G, Elbel B. Neighborhood socioeconomic environment and risk of type 2 diabetes: Associations and mediation through food environment pathways in three independent study samples. *Diabetes Care*. 2022 Apr;45(4):798-810.
6. **Hirsch AG**, Nordberg CM, Chang A, Poulsen MN, Moon KA, Siegel KR, Rolka DB, Schwartz BS. Association of community socioeconomic deprivation with evidence of reduced kidney function at time of type 2 diabetes diagnosis. *Social Science & Medicine: Population Health*. 2021 (15).
<https://doi.org/10.1016/j.ssmph.2021.100876>
7. Heaney C, Moon K, Ostfeld R, Pollak J, Poulsen M, **Hirsch AG**, DeWalle J, Aucott J, Schwartz BS. Relations of per-residential temperature and humidity in tick-life-cycle relevant periods with human Lyme disease risk in Pennsylvania, USA. *Science of the Total Environment*. In press.
8. Poulsen MN, Schwartz BS, DeWalle J, Nordberg C, Pollak JS, Silva J, Mercado CI, Rolka DB, Siegel KR, Imperatore G, **Hirsch AG**. Proximity to freshwater blue space and type 2 diabetes: the importance of historical and economic context. *Landscape and Urban Planning*. 2021;209:104060.
9. Poulsen MN, Schwartz BS, Nordberg C, DeWalle J, Pollak J, Imperatore G, Mercado CI, Siegel KR, **Hirsch AG**. Association of greenness with blood pressure among individuals with type 2 diabetes across rural and urban community types in Pennsylvania, USA. *International Journal of Environmental Research and Public Health*. 2021;18:614. <https://doi.org/10.3390/ijerph18020614>.

10. Schwartz BS, Pollak JS, Poulsen MN, Bandeen-Roche K, Moon KA, DeWalle J, Siegel KR, Mercado CI, Imperatore Giuseppina, **Hirsch AG**. Association of community types and features with risk of new onset type 2 diabetes across diverse geography in Pennsylvania. *BMJ Open*. 2021;11:e043528. doi:10.1136/bmjopen-2020-043528.
11. Soliai M, Sundaresan AS, Morin A, **Hirsch AG**, Stanhope C, Kuiper J, Schwartz BS, Ober C, Pinto JM. Two-state genome-wide association study of chronic rhinosinusitis and disease sub-phenotypes highlights mucosal immunity contributing to risk. *International Forum of Allergy & Rhinology*. 2021;11:814-817. <https://doi.org/10.1002/alr.22731>.
12. **Hirsch, AG**, Poulsen MN, Nordberg C, Moon KA, Rebman A, Aucott J, Heaney CD, Schwartz BS. Risk factors and outcomes of treatment delays in Lyme disease: a population-based retrospective cohort study. *Frontiers in Medicine*. November 2020. <https://doi.org/10.3389/fmed.2020.560018>.
13. **Hirsch AG**, Carson AP, Lee NL, McAlexander T, Mercado C, Siegel K, Black NC, Elbel B, Long DL, Lopez P, McClure LA, Poulsen MN, Schwartz BS, Thorpe LE. The Diabetes Location, Environmental Attributes, and Disparities Network: Protocol for Nested Case Control and Cohort Studies, Rationale, and Baseline Characteristics. *JMIR Res Protoc*. 2020;9(10):e21377. doi: 10.2196/21377.
14. Kuiper J, **Hirsch AG**, Bandeen-Roche Karen, Sundaresan AS, Schleimer RP, Kern R, Tan B, Schwartz BS. . A new approach to categorization of radiologic inflammation in chronic rhinosinusitis. *PLOS ONE*. 2020. 15(6): e0235432. <https://doi.org/10.1371/journal.pone.0235432>.
15. Feldman J, Lee D, Lopez P, Rummo P, **Hirsch A**, Carson A, McClure L, Elbel B, Thorpe LE. Assessing county-level determinants of individual-level diabetes status in the United States (2003 – 2012): A random-effects within-between analysis of repeated cross-sectional data. *Health & Place*. 2020;63:102324.
16. **Hirsch AG**, Norberg C, Bandeen-Roche K, Tan BK, Schleimer RP, Kern RC, Sundaresan A, Pinto JM, Kennedy TL, Greene SC, Kuiper JR, Schwartz BS. Radiologic sinus inflammation and symptoms of chronic rhinosinusitis in a population-based sample. *Allergy*. 2019;75(4):911-920. doi.org/10.1111/all.14106.
17. Moon KA, Pollak J, Poulsen MN, **Hirsch AG**, DeWalle J, Heaney CD, Aucott JN, Schwartz BS. Peridomestic and community-wide landscape risk factors for Lyme disease across a range of community contexts in Pennsylvania. *Environmental Research*. 2019 ;178: 108649.
18. Poulsen MN, Glass TA, Pollak J, Bandeen-Roche K, **Hirsch AG**, Bailey-Davis L, Schwartz BS. Associations of multidimensional socioeconomic and built environment factors with body mass index trajectories among youth in geographically heterogeneous communities. *Preventive Medicine Reports*. 2019; 15: 100939.
19. Kuiper J, Bandeen-Roche, **Hirsch AG**, Sundaresan AS, Schleimer RP, Kern R, Tan B, Schwartz BS. Workplace indirect cost impacts of nasal and sinus symptoms and related conditions. *Journal of Occupation and Environmental Medicine*. 2019; 61(8): e333.
20. Rosenthal MB, Troxel AB, Volpp KG, Stewart WF, Sequist TD, Jones JB, **Hirsch AG**, Hoffer K, Zhu J, Wang W, Hodlofski A. Moderating effects of patient characteristics on the impact of financial incentives. *Medical Care Research and Review*. 2019; 76(1): 56-72.
21. Poulsen M, Bailey-Davis L, Pollak J, **Hirsch AG**, Schwartz BS. Household food insecurity and home food availability in relation to youth diet, body mass index, and adiposity. *Journal of the Academy of Nutrition and Dietetics*. 2019; 119(10): 1666 – 1675.

22. Moon KA, Pollack J, **Hirsch AG**, Aucott JN, Nordberg C, Heaney CD, Schwartz BS. Epidemiology of Lyme disease in Pennsylvania 2006-2014 using electronic health records. *Tick & Tick-Borne Diseases*. 2018. Advance online publication. <https://doi.org/10.1016/j.ttbdis.2018.10.010>
23. Casey JA, Wilcox HC, **Hirsch AG**, Pollak J, Schwartz BS. Associations of unconventional natural gas development with depression symptoms and disordered sleep in Pennsylvania. *Scientific Reports* 2018; 8:11375.
24. **Hirsch AG**, Herman RJ, Rebman R, Moon K, Aucott J, Heaney C, Schwartz BS. Obstacles to diagnosis and treatment of Lyme disease in the U.S.: A qualitative study. *BMJ open* 2018; 8: e021367.
25. Cole M, Bandeen-Roche K, **Hirsch AG**, Kuiper J, Sundaresan A, Tan B, Schleimer R, Kern R, Schwartz BS. Longitudinal evaluation of clustering of chronic sinonasal and related symptoms using exploratory factor analysis. *Allergy* 2018; 73: 1715-1723.
26. Kuiper JR, **Hirsch AG**, Bandeen-Roche K, Sundaresan AS, Tan BK, Schleimer RP, Kern RC, Stewart WF, Schwartz BS. Prevalence, severity, and risk factors for acute exacerbations of nasal and sinus symptoms by chronic rhinosinusitis status. *Allergy* 2018; 73: 1244-53.
27. **Hirsch AG**, Durden ET, Nordberg C, Berger A, Schwartz BS. Associations of four community factors with longitudinal change in hemoglobin A1c levels in patients with type 2 diabetes. *Diabetes Care* 2018; 41(3): 461-468.
28. Poulsen, MP, Knapp E, Pollack J, **Hirsch AG**, Bailey-Davis L, Schwartz BS. Comparing objective measures of the built environment in their associations with youth physical activity and sedentary behavior across heterogeneous geographies. *Health and Place* 2018; 49: 30-38.
29. Sundaresan A, **Hirsch AG**, Young AJ, Pollak J, Tan BK, Schleimer RP, Kern RC, Kennedy TL, Greene S, Stewart WF, Bandeen-Roche K, Schwartz BS. Longitudinal evaluation of chronic rhinosinusitis symptoms in a population-based sample. *JACI In Practice* 2018; 6: 1327-1335.e3
30. Casey JA, Pollak J, Glymour MM, Mayeda ER, **Hirsch AG**, Schwartz BS. Measures of SES for electronic health record-based research. *American Journal of Preventive Medicine* 2018, 54: 430-439.
31. Wood GC, Horwitz D, Still CD, Mirshahi T, Benotti P, Parikh M, **Hirsch AG**. Performance of the DiaRem score for predicting diabetes remission in two health systems following bariatric surgery procedures in Hispanic and non-Hispanic white patients. *Obesity Surgery* 2018; 28: 61-68.
32. Lent MR, Benotti PN, Mirshahi T, Gerhard G, Strodel WE, Petrick AT, Gabrielsen JD, Rolston DD, Still CD, **Hirsch AG**, Zubair F, Cook A, Carey DJ, Wood GC. All-cause and specific-cause mortality risk following Roux-en-Y gastric bypass in patients with and without diabetes. *Diabetes Care* 2017; 40: 1379-1385.
33. Rosenthal MB, Troxel AB, Volpp KG, Stewart WF, Sequist T, Jones JB, **Hirsch AG**, Hoffer K, Zhu J, Wang W, Hodlofski A, Finnerty D, Huang JJ, Asch DA. Moderating effects of patient characteristics on the impact of financial incentives. *Medical Care Research and Review* 2017. Advance online publication. <https://doi.org/10.1177/1077558717707313>
34. Benotti P, Wood GC, Carey D, Mehra V, Mirshahi T, Lent M, Petrick A, Still C, Gerhard G, **Hirsch AG**. Gastric bypass surgery produces a durable reduction in cardiovascular disease risk factors and reduces the long-term risks of congestive heart failure. *JAMA* 2017; 6: e005126.

35. Dunstan J, Bressler JP, Moran TH, Pollak JS, **Hirsch AG**, Bailey-Davis L, Glass TA, Schwartz BS. Associations of LEP, CRH, ICAM-1 and LINE-1 methylation, measured in saliva, with waist circumference, body mass index, and percent body fat in mid-childhood. *Clinical Epigenetics* 2017; 9: 29.
36. Stevens WW, Peters AT, **Hirsch AG**, Nordberg C, Schwartz BS, Mercer D, Mahdavinia M, Grammer LC, Hulse KE, Kern RC, Avila P, Schleimer RP. Clinical characteristics of patients with chronic rhinosinusitis with nasal polyps, asthma, and aspirin exacerbated respiratory disease. *JACI: In Practice* 2017; 5: 1061-1070.
37. Knapp EA, Nau C, Brandau S, DeWalle J, **Hirsch AG**, Bailey-Davis L, Schwartz BS, Glass TA. The community audit of social, civil, and activity domains in diverse environments (CASCADDE): A new community audit methodology for direct observations of obesity-related environmental features. *The American Journal of Preventive Medicine* 2017; 52: 530-540.
38. Poulsen MN, Pollak J, Bailey-Davis L, **Hirsch AG**, Glass TA, Schwartz BS. Associations of prenatal and childhood antibiotic use and child BMI at age 3 years. *Obesity* 2017; 25: 438-444.
39. Bailey-Davis S, Poulsen MN, **Hirsch AG**, Pollak J, Glass TA, Schwartz BS. Home food rules in relation to youth eating behaviors, body mass index, waist circumference, and percent body fat. *Journal of Adolescent Health* 2017; 60: 270-276.
40. **Hirsch AG**, Pollak J, Glass TA, Poulsen MN, Bailey-Davis L, Mowery J, Schwartz BS. Early life antibiotic use and subsequent diagnosis of food allergy and allergic disease. *Clinical and Experimental Allergy* 2017; 47: 236-244.
41. **Hirsch AG**, Stewart WF, Sundaresan AS, Young AJ, Kennedy TL, Greene JS, Feng W, Tan BK, Schleimer RP, Kern RC, Lidder A, Schwartz BS. Nasal and sinus symptoms and chronic rhinosinusitis in a population-based sample. *Allergy* 2016; 72: 274-281.
42. Tustin AW, **Hirsch AG**, Rasmussen SG, Casey JA, Bandeen-Roche K, Schwartz BS. Associations between unconventional gas development and nasal and sinus, migraine headache, and fatigue symptoms in Pennsylvania. *Environmental Health Perspectives* 2017; 125:189-197.
43. Schwartz BS, Glass TA, Pollak J, **Hirsch AG**, Bailey-Davis L, Moran T, Bandeen-Roche K. Depression, its comorbidities and treatment, and childhood body mass index trajectories. *Obesity* 2016; 24: 2585-2592.
44. Lent MR, Bailey-Davis L, Wood GC, Cook AM, **Hirsch AG**, Still CD, Benotti PN, Franceschelli-Hosterman J. Bariatric surgery patients and their families: Health, physical activity, and social support. *Obesity Surgery* 2016; 26: 2981-2988.
45. **Hirsch AG**, Jones JB, Lerch VR, Tang X, Berger A, Clark DN, Stewart WF. The electronic health record audit file: The patient is waiting. *JAMIA* 2017; 24: e28-e34.
46. Wood GC, Mirshahi T, Still CD, **Hirsch AG**. Association of DiaRem score with cure of type 2 diabetes following bariatric surgery. *JAMA Surgery* 2016; 15: 779-781.
47. Asch DA, Troxel A, Stewart WF, Sequist TD, Jones JB, **Hirsch AG**, Hoffer K, Zhu J, Wang W, Hodlofski A, Frasnch AB, Weiner MG, Finnerty DD, Rosenthal MB, Gangemi K, Volpp K. Effect of financial incentives to physicians, patients, or both on lipid levels: A randomized clinical trial. *JAMA* 2015, 314: 1926-1935. *****Academy Health Article-of-the-Year 2016******
48. Schwartz BS, Pollak J, Bailey-Davis L, **Hirsch A**, Cosgrove S, Nau C, Kress A, Glass T, Bandeen-Roche K. Antibiotic use and childhood body mass index trajectory. *International Journal of Obesity* 2016; 40: 615.

49. **Hirsch AG**, Xiaowei Y, Sundaresan A, Tan BK, Schleimer RP, Kern RC, Kennedy TL, Greene JS, Schwartz BS. Five-year risk of incident disease following a diagnosis of chronic rhinosinusitis. *Allergy* 2015; 70: 1613-1621.
50. Nau C, Schwartz BS, Bandeen-Roche K, Kress A, Pollack J, **Hirsch AG**, Bailey-Davis L, Glass TA. Exploring the forest instead of the trees: An innovative method for defining obesogenic and obesoprotective environments. *Health and Place* 2015; 35: 136-146.
51. Sundaresan AS, **Hirsch AG**, Storm M, Tan BK, Kennedy TL, Greene JS, Kern RC, Schwartz BS. Environmental risk factors for chronic rhinosinusitis: a systematic review. *International Forum of Allergy and Rhinology* 2015; 5: 996-1003.
52. Ference EH, Stubbs B, Lidder AK, Chandra RK, Conley D, Avila PC, **Hirsch AG**, Min JY, Smith SS, Kern RC, Tan BK. Measurement and comparison of health utility assessments in chronic rhinosinusitis. *International Forum of Allergy and Rhinology* 2015; 5: 929-936.
53. Nau C, Schwartz BS, Bandeen-Roche K, Liu A, Pollack J, **Hirsch AG**, Bailey-Davis L, Glass TA. Community socioeconomic deprivation and obesity trajectories in children using electronic health records. *Obesity* 2015, 23: 207-212.
54. **Hirsch AG**, Wood GC, Bailey-Davis L, Lent MR, Gerhard GS, Still CD. Collateral weight loss in children living with adult bariatric surgery patients: A case control study. *Obesity* 2014; 22: 2224-2229.
55. Lam K. **Hirsch AG**, Tan BK. The association of premorbid disease with chronic rhinosinusitis with and without polyps. *Current Opinion in Otolaryngology and Head & Neck Surgery* 2014; 22: 231-241.
56. Schwartz BS, Bailey-Davis L, Bandee-Roche K, **Hirsch AG**, Pollack J, Nau C, Lui AY, Glass TA. Attention-deficit/hyperactivity disorder diagnosis and treatment and childhood BMI trajectories. *Pediatrics* 2014; 133:668-676.
57. Stewart WF, **Hirsch AG**, Kirchner HL, Clarke DN, Litchtenfeld MJ, Minassian VA. Urinary incontinence incidence: Quantitative meta-analysis of factors that explain variation. *Journal of Urology* 2014; 191: 996-1002.
58. **Hirsch AG**, McAlearney AS. Measuring diabetes care performance using electronic health record data: The impact of diabetes definitions on performance measures options. *American Journal of Medical Quality* 2014; 29: 292-299.
59. Minassian VA, **Hirsch AG**, Kolodner K, Fitzgerald MP, Burgio K, Cundiff GW, Blaivas J, Newman D, Dilley A. (2011) The role of urgency, frequency, and nocturia in defining adaptive behavior in overactive bladder. *Neurology and Urodynamics* 2011; 30: 406-411.
60. McAlearney AS, Robbins J, **Hirsch, AG**, Jorina M, Harrop P. Perceived efficiency impacts following electronic health record implementation: An exploratory study of an urban community health center network. *International Journal of Medical Informatics* 2010; 79: 807-816.
61. McAlearney AS, Song PH, Robbins J, **Hirsch AG**, Jorina, M, Kowlaczyk N., Chisholm D. Moving from good to great in ambulatory electronic health record implementation. *Journal of Healthcare Quality* 2010; 32: 41-50.
62. **Hirsch AG**, Minassian VA, Dilley A, Sartorius J, Stewart WF. Parity is not associated with urgency with or without urgency incontinence. *International Urogynecology Journal* 2010; 21: 1095-102.

63. Stewart WF, Minassian VA, **Hirsch AG**, et al. Predictors of variability in urinary incontinence and overactive bladder symptoms. *Neurology and Urodynamics* 2010; 29: 328-335.
64. Shah NR, **Hirsch AG**, Zacker C, Wood GC, Schoenthaler A, Ogedegbe G, Stewart WF. Predictors of first-fill adherence for patients with hypertension. *Am J Hypertension* 2009. 22: 392-396.
65. Shah NR, **Hirsch AG**, Zacker C, Taylor S, Wood GC, Stewart WF. Factors associated with first-fill adherence rates for diabetic medications: A cohort study. *Journal of General Internal Medicine* 2009 24: 1525-1497.
66. Minassian VA, Stewart WF, **Hirsch AG**. Why do stress and urge incontinence co-occur much more often than expected. *International Urogynecol Journal* 2008; 19: 1429-40.
67. Karlawish JH, Zbrozek A, Kinoshian B., **Gregory A.**, Ferguson A., Glick, HA. Preference-based quality of life in patients with Alzheimer's disease. *Alzheimer's & Dementia* 2008 4: 193-202.
68. Karlawish JH, Zbrozek A, Kinoshian B., **Gregory A.**, Ferguson A., Glick, HA. Caregivers' assessments of preference-based quality of life in Alzheimer's disease. *Alzheimer's & Dementia* 2008; 4: 203-211.
69. Stewart WF, Ricci JA, Chee E, **Hirsch AG**, Brandenburg NA. Lost Productive Time and Costs Due to Diabetes and Diabetic Neuropathic Pain in the US Workforce. *Journal of Occupational and Environmental Medicine* 2007; 49, 672-679.

Other Publications

Hirsch AG, Gray C. How the 2020 census miscount jeopardizes health in communities of color. *Center for Health Journalism*. May 3, 2022. <https://centerforhealthjournalism.org/2022/04/15/how-2020-census-miscount-jeopardizes-health-communities-color>

Hirsch AG, Gray C. 4 Ways that census undercounting could impact the health of Pennsylvanians. *The Philadelphia Inquirer*. March 24, 2022. <https://www.inquirer.com/opinion/census-data-pennsylvania-2020-undercounting-health-20220324.html>

Hirsch AG. Book review: Conquering Lyme disease: Science bridges the great divide. *Quarterly Review of Biology*. 2019; 94 (December): 448 – 449.

Hirsch AG. Region needs recreation. *The Daily Item*. December 28, 2017. http://www.dailyitem.com/opinion/region-needs-recreation/article_9c77eaf9-6235-5429-8a7e-e27ee9fc3d41.html

Schwartz BS, **Hirsch AG**. The key to your health could be in your ZIP code. *The Conversation*. September 16, 2015. <https://theconversation.com/the-key-to-your-health-could-be-in-your-zip-code-46304>

PRESENTATIONS AND ABSTRACTS

Invited Seminars/Panelist

Special statutory funding program for type 1 diabetes research: A workshop of the Diabetes Mellitus Interagency Coordinating Committee. March 8, 2022 (virtual)

Integrating patient narrative with electronic health records. Health Policy Workshop 2021. Indiana University. October 15, 2021 (virtual)

Integrating patient narrative with electronic health records. Workshop in Sociology. Indiana University. October 8, 2021 (virtual)

Using electronic health record data to study social and environmental determinants of health. Epidemiology & Biostatistics Department Seminar. Drexel University. Philadelphia, PA, March 7, 2019.

Using electronic health record data to study social and environmental determinants of health. Social Epidemiology Seminar Series. Department of Epidemiology. University of North Carolina. Chapel Hill, NC, October 24, 2018.

Introduction to public health and epidemiology. Introduction to Public Policy class. Bucknell University. Lewisburg, PA. September 14, 2018.

Using electronic health record data to study social and environmental determinants of health. Social Dynamics Seminar Series. Department of Behavioral and Community Health Sciences. University of Pittsburgh Graduate School of Public Health. Pittsburgh, PA, February 2018.

Using electronic health record data to study social and environmental determinants of health. Methodology Center Brown Bag Seminar Series. Prevention Research Center. The Pennsylvania State University. State College, PA, February 2018.

American Medical Association Integrated Health Model Initiative (IHMI): New Hypertension Guidelines and the Data Implications. Featured Expert, December 2017.

Treatment delays in Lyme disease. Annual Lyme Disease in the Era of Precision Medicine Conference. New York, New York October 2017.

Precision education and awareness in Lyme disease. Annual Lyme Disease in the Era of Precision Medicine Conference. New York, New York, October 2016.

Scientific meetings

Wish you were here: Methods and applications of multidisciplinary research at the intersection of social and environmental epidemiology and informatics. Annual Meeting of the Society for Epidemiologic Research. June 2021 (virtual). Role: Symposium presenter

McClure LA, Thorpe LE (Co-Chairs), McAlexander TP, Rummo P, Howell CR, **Hirsch AG** (Speakers). Multi-site initiative to assess the role of the neighborhood socioeconomic environment and food environment on diabetes incidence: Lessons learned from the Diabetes Location, Environmental Attributes and Disparities (LEAD) Network. Annual Meeting of the Society for Epidemiologic Research. June 2021 (virtual). Role: Symposium presenter

Hirsch AG, Poulsen MN, Nordberg C, DeWalle J, Pollak JS, Siegal KR, Mercado CI, Rolka DB, Schwartz BS. Associations of community socioeconomic deprivation with care processes and HbA1c values at time of type 2 diabetes diagnosis in Pennsylvania. Annual Meeting of the Society for Epidemiologic Research, December 2020.

Hirsch, AG. Caution and creativity: Maximizing the value of electronic health records and claims data in epidemiologic research. Social determinants in the EHR data: A look under the hood. Annual Meeting of the Society for Epidemiologic Research, December 2020.

Hirsch AG, Poulsen MN, Nordberg C, Moon K, Rebman A, Aucott J, Heaney C, Schwartz BS. Risk factors and treatment delays in Lyme disease. 4th Annual Lyme Disease in the Era of Precision Medicine Conference. New York, NY, October 2019.

Hirsch AG, Poulson M, Pollak J, DeWalle J, Schwartz BS. Associations between individual and community factors and type 2 diabetes onset in Pennsylvania. Annual Meeting of the Society for Epidemiologic Research, Minneapolis, MN, June 2019.

Health and Human Services Chief Technology Officer's Lyme Innovation Roundtable
Washington D.C. December 4, 2018

Hirsch AG; Norberg N, Poulsen M, Schwartz BS. Individual sociodemographic factors modify relations between community context and change in HbA1c in people with type 2 diabetes. Annual Meeting of the Society for Epidemiologic Research, Baltimore, MD, June 2018.

Kuiper J, **Hirsch AG**, Bandeen-Roche K, Sundaresan A, et al. Nasal and sinus symptoms: chronic rhinosinusitis and other risk factors for work absenteeism and presenteeism. Annual Meeting of the Society for Epidemiologic Research, Baltimore, MD, June 2018.

Pollak J, Moon K, **Hirsch AG**, et al. Risk factors for delayed diagnosis and treatment of Lyme disease, and the identification of Lyme diagnosis and treatments stages through electronic medical records and free text analysis. Annual Meeting of the Society for Epidemiologic Research, Baltimore, MD, June 2018.
Moon KA, Pollak J, Norberg C, Heaney CD, **Hirsch AG**, et al. Individual and community-level risk factors of Lyme disease in Pennsylvania using electronic health records. Annual Meeting of the Society for Epidemiologic Research, Baltimore, MD, June 2018.

Poulsen MN, Pollak J, Bandeen-Roche K, **Hirsch AG**, et al. Disentangling the contribution of community-level factors to child body mass index across diverse geographies. Annual Meeting of the Society for Epidemiologic Research, Baltimore, MD, June 2018.

Hirsch AG, Durden TE, Nordberg C, Berger A, Schwartz BS. Associations of four community domains with longitudinal change in hemoglobin A1c levels in patients with type 2 diabetes. Annual Meeting of the American Diabetes Association, San Diego, CA. June 2017.

Nau C, Ellis H, Hong H, **Hirsch A**, Bailey-Davis L, Schwartz BS, Pollak J, Liu AY, Glass TA. Exploring the forest instead of the trees: an innovative method for defining obesogenic environments. Annual meeting of the Population Association of America, Boston, MA, May 2014.

Hirsch AG, Bailey-Davis L, Wood C, Still C. Patient factors associated with provider response to weight management best practice alert. Annual Meeting of the American Medical Informatics Association, Washington DC. November 2014.

Schwartz BS, Pollak J, Bailey-Davis L, Nau C, **Hirsch A**, Glass TA, Bandeen-Roche K. Antibiotic use and childhood body mass index trajectories. Annual International Society for Environmental Epidemiology conference, Seattle, WA, August 2014.

Nau C, Glass TA, Liu AY, Pollak J, **Hirsch A**, Bailey-Davis L, Schwartz BS. Community socioeconomic deprivation and obesity trajectories in children using Big Data. Annual Meeting of the Society for Epidemiologic Research, Boston, MA, June 2013.

Hirsch AG, Wood CG, Still CD. Using the electronic health record to evaluate the collateral impact of bariatric surgery. Annual HMO Research Network Meeting, San Francisco, CA, April 2013.

CURRENT PROJECTS

U18DP006509 (Hirsch) 9/30/2020 – 9/29/2025
CDC/NIDDK (\$1.25 million)
Role: Principal Investigator
Assessing the Burden of Diabetes by Type in Young Adults (DiCAYA)
A project to coordinate, develop, implement, and validate electronic-record based surveillance of diabetes in young adults, by subtype, to inform type-specific public health responses, assess disease burden, and identify priorities for type-specific health services.

1P01AI45818-01 (Hirsch – subaward PI) 8/1/2019 – 7/31/2024
NIH/NIAID (\$1.4 million)
Role: (Sub-award PI)
The goal of this project is to determine the long-term consequences of CRS and to develop a more refined understanding of CRS pathophysiology that could inform more tailored treatment in men and women with this disease.

1U01DP006296-01 (Hirsch) 9/30/2017 - 9/29/2022
CDC (\$3.2 million)
Role: Principal Investigator
Co-Chair: A multi-level study of community context and type 2 diabetes and coronary heart disease using electronic health record and new primary data across nested geographies in Pennsylvania.

No Assignment # (Hirsch) 6/1/2019 – 5/30/2022
PA Department of Health (\$225,000)
Role: Principal Investigator
Genetic contributions to post-treatment Lyme disease syndrome

No Assignment # (Silva) 1/1/2020 – 12/31/2021
Russel Sage Foundation (\$44,109)
Role: Site Principal Investigator
Linking electronic health records and in-depth interviews to uncover barriers to social mobility and health in a declining coal mining community

PAST PROJECTS

U01DP006296 (Hirsch, Schwartz) 9/30/2020 – 9/29/2021
CDC (\$200,000)
Supplement funding
A study to provide new information on the complex, bidirectional influences of type 2 diabetes and COVID-19, specifically, how the COVID-19 pandemic affected persons with type 2 diabetes, and how type 2 diabetes affected COVID-19 outcomes.

1P01AI145818-01 (Schleimer) 10/1/2019 - 9/30/2024
NIAID (\$2.2 million)
Role: Site Principal Investigator
Chronic rhinosinusitis (CRS) Epidemiology

Steve and Alexandra Cohen Foundation (Schwartz) 9/1/2016 - 8/31/2019
Subcontract to Johns Hopkins School of Public Health (\$531,257)
Role: Site Principal Investigator
Lyme disease epidemiology in Pennsylvania (and other northeastern states) with an emphasis on individual and population vulnerability.

1P01 AI106683 – 01 (Schleimer) 8/1/2013 - 07/31/2019
NIAID (\$2.2 million)
Role: Project 1 Co-Investigator
Chronic rhinosinusitis (CRS) Epidemiology Using New Approaches to Validation Based Studies

Bucknell-Geisinger Research Initiative (Hirsch) 5/1/2019 – 4/30/2020
Improving the Efficiency and Quality of Care: Linking Electronic Health Records and Patient’s Life Experience

Bucknell-Geisinger Research Initiative (Hirsch/Durden/Silva) 6/1/2017 - 5/31/2018
Role: Principal Investigator
Qualitative study to examine the mechanisms between community factors and health.

Bucknell-Geisinger Research Initiative (Hirsch/Durden) 1/1/2016 - 12/31/2016
Role: Principal Investigator
Evaluating how community factors impact effectiveness of clinical care in type 2 diabetes.

1 U54 HD070725-01 (Wang) 7/01/2011 - 12/31/2016
NIH/NICHHD
Subcontract: Johns Hopkins Pediatric Obesity Research and Training Center
Role: Site Principal Investigator
Dynamics of childhood obesity in Pennsylvania from community to epigenetics.

Cardio-Metabolic Risk Management in Primary Care 5/31/2012 - 3/31/2016
Merck Funded
Role: Project Director
Development, implementation, and evaluation of an advanced and integrated set of web-based tools to optimize cardio-metabolic risk management in primary care.

Clinical Research Fund - Geisinger (Hirsch) 6/1/2015 - 11/30/2016
Pediatric Microbiome Repository
Role: Principal Investigator
Development of a repository of fecal samples from Geisinger patients ages 0 to 48 months, to identify recruitment strategies to maximize participation in the repository, and link fecal samples to the relevant exposure and outcomes data.

P01 AI106683 (Schleimer) 8/1/2014 - 7/31/2015
NIAID
Role: Co-Investigator
Development of patient-reported outcome measures for assessment of state transition in CRS.

Clinical Research Fund - Geisinger (Hirsch) 5/1/2013 - 4/30/2015
Role: Principal Investigator
Utilization of electronic medical records and administrative claims data to identify risk factors for abdominal aortic aneurysm

1R36 HS20165-10 (Hirsch) 3/01/2011 - 6/28/2012
AHRQ
Evaluating EHR data for use in diabetes quality reporting
Role: Principal Investigator
Development and evaluation of electronic health record-based algorithms for identifying patients with diabetes and the impact of using these different definitions on performance measurement outcomes.

HHSM-500-2008-00020/HHSM-500-TO003

12/17/2012 - 4/30/2013

DHHS/CMS (Subcontract w/ Mathematica Policy Research, Inc.)
ARRA HITECH Eligible Professional (EP) Clinical Quality Measures project
Role: Project Lead
Evaluation of clinical quality-of-care measures for use in the CMS EHR Incentive Program.

1RC4AG039114-01 (Asch)

9/30/2010 - 8/31/2014

NIA
Role: Site Principal Investigator
Evaluation of the effectiveness of different behavioral economic interventions in increasing statin use and reducing LDL cholesterol among patients with poor cholesterol control who are at very high risk for CVD.

TEACHING AND MENTORSHIP

Classroom instruction

Geisinger
Geisinger Clinical Research Program
Designed and teach 3-class sequence course, Introduction to Epidemiology, 2015-present

Bucknell University
Designed and taught undergraduate course, Introduction to Public Health, Fall 2016

Doctoral advising/mentoring

Johns Hopkins Bloomberg School of Public Health
Oral examination committee member, 2016: Jordan Kuiper
Thesis committee member, 2017: Jordan Kuiper
Kuiper JR, **Hirsch AG**, et al. Prevalence, severity, and risk factors for acute exacerbations of nasal and sinus symptoms by chronic rhinosinusitis status. *Allergy* 2018; 73: 1244-53.

Geisinger
Mentorship committee member, 2019 - present
Antoinette Diciscio, Staff Scientist

Geisinger
Mentorship committee member, 2021 - present
Carly McCade, post-doctoral fellow

Geisinger
Mentorship committee member, 2019
Agnes Sundaresan, Assistant Professor

Geisinger
Mentorship committee member, 2020
Brent Williams, Assistant Professor

Masters/medical school advising/mentoring

Geisinger Commonwealth School of Medicine
Meghan Loser, Summer 2018 internship

Undergraduate advising/mentoring

Geisinger
Summer Institute
Designed and implemented a 7-week education program for undergraduate, medical school, and graduate school interns, working in multiple departments in Geisinger Research, 2018.

Geisinger

Rachel Herman, Summer 2017 internship
Provided training in qualitative analysis.

Hirsch AG, et al. Obstacles to diagnosis and treatment of Lyme disease in the U.S.: A qualitative study. *BMJOpen* 2018; 8: e021367.

Geisinger

Kaitlyn Shultz, Summer 2016 internship
Provided training in research participant recruitment and interviewing.

Geisinger

Hannah Walters, Summer 2015 internship
Provided training in data management and quantitative analysis.

Geisinger

Margaret Storm, Summer 2014 internship
Provided training in systematic literature reviews.

Sundaresan AS, **Hirsch AG**, et al. Environmental risk factors for chronic rhinosinusitis: a systematic review. *International Forum of Allergy and Rhinology* 2015; 5: 996-1003.

INSTITUTIONAL SERVICE

Scientific Review Committee: Chair

2012 - Present

Mentorship Committee: Member

2019 - Present

EXTERNAL SERVICE/MEMBERSHIP

Delaware County Board of Health

Member - 2021

Membership

American Diabetes Association

Society for Epidemiologic Research

American Public Health Association

Research Community on Trust – AcademyHealth and the ABIM Foundation

USC Annenberg Center for Health Journalism

Journal Reviewer (Reviews conducted in last 12 months)

Diabetes Care

Allergy

American Journal of Preventive Medicine

Journal of the American Medical Informatics Association

British Medical Journal, Open

Conference Reviewer/Planner

American Medical Informatics Association

Health Care Systems Research Network

Society for Epidemiologic Research

Co-Moderator: Rural health in the US: Do we have the right measures for the right questions. Annual Meeting of the Society for Epidemiologic Research, Baltimore, MD, June 2018.

MEDIA COVERAGE

Physician's Weekly

October 7, 2021

Kidney function in newly diagnosed diabetes: The role of community socioeconomic deprivation

The Daily Item

April 4, 2019

17 miles = 17 years – life expectancy vastly different in two Valley towns

Reuters

December 28, 2018

Leafy green neighborhoods tied to better heart health

Reuters

January 17, 2018

How neighborhoods shape life with diabetes

Newsweek

October 29, 2016

Why zip code may influence health more than genetic code

ScienceDaily

August 25, 2016

Unconventional natural gas wells associated with migraine, fatigue

The Daily Item

May 10, 2016

Dead by 30? Watsontown man reflects on bariatric intervention

Washington Post

November 3, 2015

Could antibiotics be making your child gain weight?