## Kelly A. Hirko, PhD, MPH

College of Human Medicine, Michigan State University Department of Epidemiology & Biostatistics 909 Fee Road, East Lansing, MI 48824, USA hirkokel@msu.edu +1.617.312.9507

#### **EDUCATION AND TRAINING**

Postdoctoral Fellowship: Nutritional Epidemiology of Cancer (R25T CA098566), Harvard T.H.

Chan School of Public Health, January 2013- December 2015

Research: Nutrition, obesity and lifestyle risk factors for cancer (Advisors: Heather Eliassen, ScD & Lisa Signorello, ScD)

**Doctor of Philosophy** (PhD), Epidemiologic Sciences, University of Michigan School of Public Health, 2013

Dissertation: "The global profile of inflammatory breast cancer: exploring the disease epidemiology among international and migrant populations" (Advisors: Amr Soliman, MD, PhD & Sofia Merajver, MD, PhD)

Master of Public Health (MPH), Epidemiology, Boston University School of Public Health, 2008

**Bachelor of Science** (BS), Biopsychology, University of Michigan, 2002

#### **ACADEMIC APPOINTMENTS**

Assistant Professor, Department of Epidemiology & Biostatistics, College of Human Medicine, Michigan State University, January 2016-present

#### AWARDS AND FELLOWSHIPS

National Center for Faculty Development & Diversity, Summer 2023 Faculty Success Program, selected participant, Summer 2023

American Association of Cancer Research, Early Career Hill Day, selected participant, March 2023

National Institute of Health, Early Career Reviewer program at the Center for Scientific Review, selected participant, February 2023

Scholar in Training Award, American Association for Cancer Research, The Science of Cancer Health Disparities in Racial/Ethnic Minorities and the Medically Underserved Conference, October 2020

Transdisciplinary Research in Energetics and Cancer Research Education Program, selected participant, 2020

National Institutes of Health, Loan Repayment Program renewal recipient, 2020-2021

National Institutes of Health, National Cancer Institute, Training Institute for Dissemination and Implementation Research in Cancer, selected participant, 2019

National Institutes of Health, Loan Repayment Program renewal recipient, 2019-2020

National Institutes of Health, Loan Repayment Program renewal recipient, 2018-2019

National Institutes of Health, Loan Repayment Program renewal recipient, 2017-2018

National Institutes of Health, Loan Repayment Program recipient, 2014-2016

American Association of Cancer Research, Integrative Molecular Epidemiology Workshop selected participant, 2014

Bicentennial Fund Travel Award, Harvard T.H. Chan School of Public Health, 2014

Nutritional Epidemiology of Cancer Postdoctoral Fellowship, (R25T CA098566), Harvard T.H. Chan School of Public Health, 2013-2015.

Scholar in Training Award, American Association for Cancer Research, 2012

Cancer Epidemiology Education in Special Populations Fellowship, (R25T CA112383), University of Michigan, 2012-2013

Center for Global Health Dissertation Fellowship, University of Michigan, 2011-2012

Center for Global Health Dissertation Fellowship, University of Michigan, 2010-2011

University Research Opportunity Program in Biomedical Sciences recipient, University of Michigan, 1999-2000

#### **RESEARCH INTERESTS:**

As a community-based researcher, my research interests include using implementation science approaches to effectively incorporate evidence-based interventions into underserved rural settings, with an emphasis on community engagement and health disparities. I am particularly interested in identifying approaches to effectively implement telehealth programs to reduce health disparities in rural areas. My research also focuses on cancer disparities and characterizing the role of lifestyle factors and social determinants in cancer prevention and control. My research seeks to identify opportunities for cancer prevention, particularly for aggressive cancer types, including young-onset breast cancer and inflammatory breast cancer.

#### RESEARCH EXPERIENCE

**Clinical Research Coordinator**, Boston University School of Medicine, Clinical Epidemiology Department, Boston, MA, 2006-2009

Coordinator of a randomized clinical trial on bracing in patellofemoral knee osteoarthritis: recruited and retained study participants; conducted study visits and ensured compliance with study protocol; wrote and reviewed research proposals; assisted in writing papers for publication; assisted with development of methodology, data collection, and analysis procedures.

Field Researcher, School for Field Studies, Kimana, Kenya, 2008

Developed health questionnaire; conducted field survey of community; analyzed data on basic health and sanitation needs of community; presented findings to diverse community audience.

**Technical Research Assistant**, Brigham and Women's Hospital, Pathology Department, Boston, MA, 2005-2006

Quantified immunohistochemical staining on tissue microarray slides for analysis by pathologists; conducted research on the loss of heterozygosity in tumorous DNA samples using polymerase chain reaction methodology; edited papers for publication; assisted with formulation of grant budgets; managed lab expenses.

**Research Assistant,** University of Michigan Hospital, Pathology Department, Ann Arbor, MI, 2000 Created tissue microarray of prostate cancer tissue for various research projects; prepared tissue samples for lab processing; presented research project at annual University Convocation.

#### **PUBLICATIONS**

- 1. Alalwan MA, Long L, **Hirko KA**, LoConte NK, Scherr CL, Keller-Hamilton B, Atkinson L, Suraapaneni S, Gatti-Mays ME, Manne S, Mays D. Awareness of alcohol as a breast cancer risk factor and intentions to reduce alcohol consumption among U.S. young adult women. *Trans Behav Med*. 2023 Aug 14;ibad045. PMID: 37582629
- 2. Giles ED, Purcell S, Olson J, Vrieling A, **Hirko KA**, Woodruff K, Playdon M, Gilmore LA, Moberly HK, Newell-Fugate AE. Trends in Diet and Cancer Research: A Bibliometric and Visualization Analysis. *Cancers (Basel)*. 2023 Jul 25; 15(15):3761. PMID 37568578
- 3. Interview: Kelly Hirko. EMJ. 2023; https://doi.org/10.33590/emj/10305342.
- 4. Yang CL Kerver JM, **Hirko K**, Dunietz GL, O'Brien LM, Jansen EC. Delayed sleep midpoint across pregnancy is associated with excessive gestational weight gain: a Michigan pregnancy cohort. *J Womens Health (Larchmt)*. 2023 Aug 8. PMID: 37552849
- 5. Yang CL, Jansen EC, Dunietz GL, **Hirko K**, O'Brien LM, Kerver JM. Sleep Disparities Across Pregnancy: A Michigan Cohort Study. *Womens Health Rep (New Rochelle)*. 2023 May 15;4(1):219-231. doi: 10.1089/whr.2023.0009. PMID: 37252253
- 6. Dennett AM, **Hirko KA**, Porter KJ, Loh KP, Liao Y, Yang L, Arem H, Sukumar JS, Salerno EA. Embedding lifestyle interventions into cancer care: has telehealth narrowed the equity gap? *J Natl Cancer Inst Monogr.* 2023 May 4; 2023(61):133-139. PMID: 37139972
- 7. Dickson T, **Hirko KA**, Ford S. Provider Confidence and Perceived Barriers when Recommending the Human Papillomavirus Vaccine to Parents. *J Cancer Educ.* 2023 Feb 4. PMID: 36737584
- 8. **Hirko KA.** Ensuring equitable cancer care delivery to address cancer disparities worldwide. *EMJ Innov.* 2022; <a href="https://doi.org/10.33590/emjinnov/10018969">https://doi.org/10.33590/emjinnov/10018969</a>.
- 9. **Hirko KA,** Moore P, An L, Hawley S. Tobacco Use and Cessation Preferences Among Rural Smokers: A Cross-Sectional Survey. *AJPM Focus.* December 14, 2022. https://doi.org/10.1016/j.focus.2022.100057
- 10. Aspiras O, Lucas T, Thompson HS, Manning MA, Blessman J, Dawadi A, **Hirko KA**, Penner LA. Culturally targeted message framing and colorectal cancer screening preferences among African Americans. *Health Psychol.* 2022 Nov 21. PMID: 36409102
- 11. Ihenacho U, Hamilton AS, Mack WJ, Wu AH, Unger JB, Pathak DR, **Hirko KA**, Houang RT, Press MF, Schwartz KL, Marcus LR, Velie EM. Lifetime personal cigarette smoking and risk of young-onset breast cancer by subtype among non-Hispanic Black and White women in the Young Women's Health History Study. *Breast Cancer Res Treat.* 2022 Aug 4. PMID: 35925453

- 12. **Hirko KA**, Xu H, Rogers LQ, Martin MY, Roy S, Kelly KM, Christy SM, Ashing KT, Yi JC, Lewis-Thames MW, Meade CD, Lu Q, Gwede CK, Nemeth J, Ceballos RM, Menon U, Cueva K, Yeary K, Klesges LM, Baskin ML, Alcaraz Kl, Ford S. Cancer Disparities in the context of rurality: risk factors and screening across various U.S. rural classification codes. *Cancer Causes Control*. 2022 Aug;33(8):1095-1105. PMID: 35773504
- 13. Holtz B, Mitchell K, **Hirko K**, Ford S. Using the Technology Acceptance Model to characterize barriers and opportunities of telehealth in rural populations: Survey and Interview Study. *JMIR Formative Research.* 2022 Apri 15;6(4):e35130. PMID: 35436207
- 14. **Hirko KA**, Rocque G, Reasor E, Taye A, Daly A, Cutress Rl, Copson ER, Lee DW, Lee KH, Im SA, Park YH. The impact of race and ethnicity in breast cancer-disparities and implications for precision oncology. *BMC Med* 2022 Feb 11;20(1):82. PMID: 35151316
- 15. Pariser A, **Hirko KA**, Munoz GM, Pico-Gleason G, Kerver JM. Barriers to Access for Cervical and Breast Cancer Screenings Among Female Latinx Migrant Farmworkers in the US: A Scoping Literature Review. *J Prim Care Community Health*. 2022 Jan-Dec;13:2150131921107353. PMID: 35068265
- 16. **Hirko KA**, Alfano C, Schmitz K, Dorn J, Dearing J. Implementation of physical activity programs for rural cancer survivors: challenges and future directions. *Int J Environ Res Public Health*. 2021 Dec 7;18(24):12909. PMID: 34948517
- 17. **Hirko KA,** Eliassen AH. Glucocorticoids and breast cancer risk. *BMC Med.* 2021 Aug 2;19(1):187. PMID: 35340697
- 18. Lucas, T., Thompson, H.S., Blessman, J., Dawadi, A., Drolet, C.E., **Hirko, K.A.**, & Penner, L.A.. Effects of culturally targeted message framing on colorectal cancer screening among African Americans. *Health Psychology*. 2021 May;40(5):305-315. PMID: 34152784
- 19. **Hirko KA**, Regan MM, Remolano MC, Schlossman J, Harrison BT, Yeh E, Jacene J, Nakhlis F, Overmoyer BA. Dermal lymphatic invasion, survival and time to recurrence in inflammatory breast cancer. *American Journal of Clinical Oncology*. 2021 Sep 1;44(9):449-455. PMID: 34149037
- 20. Klee D, **Hirko K**. Outdoor walking rounds: combining resident education and wellness. Clin Teach. 2021 Feb;(1):51-54. PMID: 32856400
- 21. **Hirko KA**, Comstock SS, Strakovsky RS, Kerver JM. Diet during Pregnancy and Gestational Weight Gain in a Michigan Pregnancy Cohort. Curr Dev Nutr. 2020 Jul 13;4(8). PMID: 32793851
- 22. **Hirko KA**, Lennon SA, Lucas T, Miller DC, Jimbo M, Leibfritz SJ, Knoff SJ, Janney CA, Berg PD. Improving Colorectal Cancer Screening in a Rural Setting: A Randomized Study. Am J Prev Med. 2020 Sep;59(3):404-411. PMID: 32684359
- 23. **Hirko KA**, Kerver JM, Ford S, Szafranski C, Beckett J, Kitchen C, Wendling AL. Telehealth in Response to the Covid-19 Pandemic: Implications for Rural Health Disparities. J Am Med Inform Assoc. 2020 Jun 26 [Epub ahead of print] PMID: 32589735
- 24. Ford S, Buscemi J, **Hirko K**, Laitner M, Newton RL, Jonassaint C, Fitzgibbons M, Klesges LM. Society of Behavioral Medicine (SBM) urges Congress to ensure efforts to increase and enhance broadband internet access in rural areas. Transl Behav Med. 2020 May 20. PMID: 31220317

- 25. Gallegos R, Kogelman A, Wagner M, Cloud A, Olson M, Robideau K, Patrick L, Comfort J, **Hirko K**. "Chemotherapy Education: An Interprofessional Approach to Standardizing Processes and Improving Nurse and Patient Satisfaction". Clin J Oncol Nurs. 2019 Jun 1;23(3):309-314. PMID: 31099795
- 26. Bauer HH, Anderson CB, **Hirko K**, Wendling A. Barriers to College and Health Care Careers Among US Students from a Rural Community. PRiMER. 2019 Mar 25;3. PMID: 32537581
- 27. Gudina AT, Copeland G, Soliman AS, **Hirko KA**. "Racial/ethnic disparities in inflammatory breast cancer survival in the Michigan Cancer Surveillance Program". Breast Cancer Res Treat. 2019 Feb;173(3):693-699. PMID: 30406365
- 28. **Hirko KA**, Chai B, Spiegelman D, Campos H, Farvid MS, Hankinson SE, Willett WC, Eliassen AH. "Erythrocyte membrane fatty acids and breast cancer risk: a prospective analysis in the Nurses' Health Study II". Int J Cancer. 2018 Mar 15;142(6):1116-1129. PMID: 29071721
- 29. **Hirko KA**, Lajous M, Ortiz Panozo E, Lopez Ridaura R, Christine P, Le-Scherban F, Rice M, Barrientos-Gutierrez T. "Socioeconomic position and markers of adiposity among female teachers in Mexico." J Epidemiol Community Health, 2017 Aug 9 [Epub ahead of print] PMID: 28794061
- 30. Healey M, **Hirko KA**, Beck AH, Collins LC, Schnitt SJ, Tamimi RM, Hazra A. "Assessment of Ki67 marker for breast cancer subtype classification and prognosis in the Nurses' Health Study." Breast Cancer Res Treat, 2017 Aug 8 [Epub ahead of print] PMID: 28791482
- 31. **Hirko KA**, Fortner RT, Hankinson SE, Wu T, Eliassen AH. Plasma fluorescent oxidation products and risk of estrogen receptor-negative breast cancer in the Nurses' Health Study and Nurses' Health Study II. Breast Cancer Res Treat. 2016 Jul;158(1):149-55. PMID:27294610.
- 32. **Hirko KA**, Spiegelman D, Barnett JB, Cho E, Willett WC, Hankinson SE, Eliassen A.H. Dietary patterns and plasma sex hormones, prolactin and sex hormone-binding globulin in premenopausal women. Cancer Epidemiol Biomarkers Prev. 2016 May;25(5):791-8. PMID:26980437.
- 33. **Hirko KA**, Willett WC, Hankinson SE, Rosner BA, Beck AH, Tamimi RM, Eliassen AH. Healthy dietary patterns and risk of breast cancer by molecular phenotype. Breast Cancer Res Treat. 2016 Feb;155(3):579-88. PMID:26872903.
- 34. **Hirko KA**, Chen WY, Willett WC, Rosner BA, Hankinson SE, Beck AH, Tamimi RM, Eliassen AH. Alcohol consumption and risk of breast cancer by molecular subtype: Prospective analysis of the nurses' health study after 26 years of follow-up. Int J Cancer. 2015 Sep 18. PMID: 26384849.
- 35. **Hirko KA**, Kantor ED, Cohen SS, Blot WJ, Stampfer MJ, Signorello LB. "Body mass index in young adulthood, obesity trajectory and premature mortality" Am J Epidemiol. 2015 Sept 1;182(5):441-50. PMID: 25977515.
- 36. **Hirko KA,** Spiegelman D, Willett WC, Hankinson SE, Eliassen AH. Alcohol consumption in relation to plasma sex hormones, prolactin and sex hormone-binding globulin in premenopausal women. Cancer Epidemiol Biomarkers Prev. 2014 Oct 3. PMID: 25281368.

- 37. Bergmans R, Soliman AS, Ruterbusch J, Meza R, **Hirko K,** Graff J, Schwartz K. "Cancer incidence among Arab Americans in California, Detroit, and New Jersey SEER registries". Am J Public Health. 2014 Apr 17; 104(6):e83-91. PMID: 24825237
- 38. **Hirko KA**, Soliman AS, Banerjee M, Ruterbusch J, Harford JB, Merajver SD, Schwartz K. "A comparison of criteria to identify inflammatory breast cancer from medical records and the Surveillance, Epidemiology and End Results database, 2007-2009. Breast J. 2014 Mar; 20(2):185-91. PMID: 24372839.
- 39. **Hirko KA**, Soliman AS, Hablas A, Seifeldin IA, Banerjee M, Ruterbusch J, Harford JB, Chamberlain RM, Merajver SD, Schwartz K. "Trends in breast cancer incidence rates by age and stage at diagnosis in Gharbiah, Egypt, over 10 years (1999-2008). J Cancer Epidemiol. 2013; 916394. PMID: 24282410.
- 40. **Hirko KA,** Soliman AS, Banerjee M, Ruterbusch J, Harford JB, Chamberlain RM, Graff JJ, Merajver SD, Schwartz K. "Characterizing inflammatory breast cancer among Arab Americans in the California, Detroit and New Jersey Surveillance, Epidemiology and End Results (SEER) registries (1988-2008). Springerplus. 2013 Dec; 2(1):3. PMID: 23420611.
- 41. Hunter D, Gross KD, McCree P, Li L, **Hirko K**, Harvey WF. "Realignment treatment for medial tibiofemoral osteoarthritis: randomized trial." Ann Rheum Dis. 2012 Oct; 71(10):1658-65. PMID: 22377805.
- 42. Menashe L, **Hirko K,** Losina E, Koppenburg M, Zhang W, Li L, Hunter DJ. "The diagnostic performance of MRI in osteoarthritis: a systematic review and meta-analysis." Osteoarthritis Cartilage. 2011 Oct 19. PMID: 22044841.
- 43. McWalter EJ, Hunter DJ, Harvey WF, McCree P, **Hirko KA**, Felson DT, Wilson DR. "The effect of patellar brace on three-dimensional patellar kinematics in patients with lateral patellofemoral osteoarthritis." Osteoarthritis Cartilage. 2011 Mar 10. PMID: 21397707.
- 44. Hunter DJ, Zhang W, Conaghan PG, **Hirko K**, Menash L, Reichmann WM, Losina E. "Responsiveness and reliability of MRI in knee osteoarthritis: a meta-analysis of published evidence." Osteoarthritis Cartilage. 2011 Mar 8. PMID: 21396465.
- 45. Hunter DJ, Zhang W, Conaghan PG, **Hirko K,** Menash L, Reichmann WM, Losina E. "Systematic review of the concurrent and predictive validity of MRI biomarkers in OA." Osteoarthritis Cartilage 2011 Mar 8. PMID: 21396463.
- 46. Hunter DJ, Harvey W, Gross KD, Felson D, McCree P, Li L, **Hirko K,** Zhang B, Bennell K. "A randomized trial of patellofemoral bracing for treatment of patellofemoral osteoarthritis." Osteoarthritis Cartilage. 2011 Jan 10. PMID: 21232620.
- 47. Hofer MD, Chang MC, **Hirko KA**, Rubin MA, Nose V. "Immunihistochemical and clinicopathological correlation of the metastasis-associated gene (MTA1) expression in benign and malignant pancreatic endocrine tumors." Mod Pathol. 2009 Jul:22(7):933-9. PMID: 19377441.

### **ACCEPTED**

Hoppe A\*, **Hirko KA**, Wendling A. Understanding the Burden of Colorectal Cancer in a Three-County Rural Region of Michigan: An Ecological Analysis of Incidence, Mortality, and Risk Factors. (submitted October 2022)

#### **SUBMITTED**

**Hirko KA,** Lucas DR, Pathak DR, Hamilton AS, Carnegie NB, Houang RT, Marcus LR, Schwartz K, Velie EM, et al. Alcohol consumption patterns through the life course, and risk of young-onset breast cancer in Non-Hispanic Black and Non-Hispanic White women in the Young Women's Health History Study. (submitted February 2023)

Keenan K, Hipwell A, Stepp S, Dunlop A, Brennan P, Farzan S, Fichorova R, **Hirko KA**, Nozadi S. Is BMI a Useful Indicator of Perinatal Health Among Black Women? (submitted November 2022)

Klee D, Pyne D, Kross J, James W, **Hirko KA**. Rural Patient and Provider Perceptions of Telehealth Implemented during the COVID-19 Pandemic. (submitted October 2022)

Ford S, Holtz B, Mitchell K, **Hirko KA**. The Changing Landscape of Technological Health Care Access in the time of COVID-19: Implications for Rural Older Adults (submitted September 2022)

Silverwood S\*, Peters, D, **Hirko KA**. Exploring the Impact of the COVID-19 Pandemic on Psychosocial Distress Among Thoracic Oncology Patients at a Rural Cancer Center. (submitted August 2022)

#### IN PREPARATION

**Hirko KA**, Xu H, Rogers LQ, Martin MY, Roy S, Kelly KM, Christy SM, Ashing KT, Yi JC, Lewis-Thames MW, Meade CD, Lu Q, Gwede CK, Nemeth J, Ceballos RM, Menon U, Cueva K, Yeary K, Klesges LM, Baskin ML, Alcaraz Kl, Ford S. Cancer Disparities in the context of rurality: geographic variation

Hirko KA, S Ford, Holtz B. Formative evaluation of telehealth in a rural population.

Kasim N, Soliman AS, Schwartz KS, **Hirko KA**. Human papillomavirus-related cancer mortality and survival among Arab Americans in Detroit, Michigan, 1998-2014.

**Hirko KA,** Pathak D. Nutrition across the life course and breast cancer risk: a review of the current evidence.

Hirko KA, Swan S. Geospatial analysis of breast cancer and risk factors in Northern Michigan

**Hirko KA**, Olsabeck T, Luo Z, Paneth N, Kerver J. Pregnancy-related weight and offspring body mass index in early childhood: results from a Michigan cohort.

Peters, D, Silverwood S, **Hirko KA**. Exploring National Comprehensive Cancer Network Distress During Cancer Care Measures among Thoracic Oncology Patients at a Rural Community Cancer Center.

Silverwood S, Peters, D, **Hirko KA**. Exploring the Impact of the COVID-19 Pandemic on Psychosocial Distress Among Thoracic Oncology Patients at a Rural Cancer Center.

Israel J, **Hirko KA**. Descriptive analysis of emergency department and acute hospitalization encounters among the homeless population in a rural hospital.

Xu H, Meng S, **Hirko K,** Yang S, Poh Loh K, Culakova E, Lu Q, Ramsdale E, Kamen C, Cupertino P, Ford S, Mohile S, Mustian K. When Machine Learning Meets Health Disparities: Predictors of Cancer Screenings in Urban Versus Rural Counties Using Random Forest Algorithm.

Mitchell K, Holtz B, **Hirko KA.** Cancer Support during the Pandemic: A Case Study of Perceptions of Telehealth-based Cancer Support Groups at a Rural Community Oncology Program

Astorino J, **Hirko, KA**, Consortium for Cancer Implementation Science working group. Scoping Review of Champions in Cancer Research

**Hirko KA**, Hu G, Morales Campos D, Abebe E. Consortium for Cancer Implementation Science working group. Building Institutional Capacity to Support Engaged Implementation Sciences

Neau J, **Hirko KA**, Cairat M. Systematic review on glucocorticoids and cancer risk.

#### **BOOK CHAPTERS**

**Hirko K.** Translation of Global Cancer Epidemiology Research Findings to Underserved Populations in the U.S. In: Cancer Epidemiology: Low and Middle-income countries and special populations. Oxford University Press, New York, NY 2023. (in press)

**Hirko K,** Iniesta Doñate M. Merajver SD. Opportunities for Molecular Pathology Research. In: Cancer Epidemiology: Low and Middle-income countries and special populations. Oxford University Press, New York, NY 2013.

#### **CONFERENCE PRESENTATIONS**

*Oral presentations* 

**Hirko KA.** Characterizing telemedicine barriers and preferences to promote acceptable implementation strategies in Central Uganda. 15<sup>th</sup> Annual Conference on the Science of Dissemination and Implementation in Health, Washington D.C., December 2022

**Hirko KA.** *The Epidemiology of Inflammatory Breast Cancer*. 7<sup>th</sup> International Inflammatory Breast Cancer Symposium, Houston, Texas, December 2022

**Hirko KA.** *Using implementation science to address rural cancer disparities.* Translating Oncology Research Symposium: Building Partnerships in Cancer Research, Henry Ford Health + Michigan State University Health Sciences, East Lansing, Michigan, November 2021

**Hirko KA.** Symposium presenter: Mentoring for Professional Cancer Education of Graduate Students in Special Populations. International Cancer Education Conference. Virtual, October 2021

**Hirko KA.** Improving Colorectal Cancer Screening Participation: A Randomized Trial of Motivational Messaging and Low-Cost Alternative Screening Options. Society for Behavioral Medicine Annual Conference. Washington D.C., March 2019

**Hirko KA.** *The Epidemiology of Inflammatory Breast Cancer.* 5<sup>th</sup> International Inflammatory Breast Cancer Conference, Boston, MA, July 2016

**Hirko KA**. Alcohol consumption and plasma sex hormones, prolactin and sex-hormone binding globulin in premenopausal women. Dana-Farber/Harvard Cancer Center Celebration of Junior Investigators in Cancer Research, Boston, MA, September 2014

**Hirko KA**. *Epidemiology of inflammatory breast cancer*. University of Michigan and University of Cairo Joint Conference on Downstaging Breast and Cervical Cancer in Africa and the Middle East, Cairo, Egypt, October 2010

### Poster presentations

Bernacchi V, **Hirko K**, Given B, Chinchilli V, Moss J. An ecological study examining relationships among rurality, social community, and mammography screening. Virtual 2023 Council for the Advancement of Nursing Science, Advanced Methods Conference (submitted May 2023)

Adjeji Boakye E, Wilson C, Tam S, Al-Antary N, Mrudula, Poisson L, **Hirko K**, Ryan M, Chang S, Movsas B. Completion of patient reported outcome measures (PROMs) among underserved cancer patients: In-person vs. online. American Society of Clinical Oncology Meeting. (submitted February 2023)

Al-Antary N, Adjeji Boakye E, Tam S, Wilson C, Poisson L, Zatirka T, Ryan M, **Hirko K**, Chang S, Movsas B. Completion of patient reported outcome measures (PROMs) among underserved cancer patients: In-person vs. online. American Society of Clinical Oncology Meeting. (submitted February 2023)

Silverwood S, **Hirko K**. Exploring the impact of COVID-19 on psychosocial distress measures among thoracic oncology patients at a rural cancer center. American Association for Cancer Research Annual Meeting, April 2022.

Xu H, Meng S, **Hirko K**, Yang S, Poh Loh K, Culakova E, Lu Q, Ramsdale E, Kamen C, Cupertino P, Ford S, Mohile S, Mustian K. *When machine learning meets health disparities: predictors of cancer screening in urban versus rural counties using random forest algorithm*. Academy Health Annual Research Meeting, Virtual Meeting, June 2021

**Hirko KA,** Xu H, Rogers LQ, Martin MY, Roy S, Kelly KM, Christy SM, Ashing KT, Yi JC, Lewis-Thames MW, Meade CD, Lu Q, Gwede CK, Nemeth J, Ceballos RM, Menon U, Cueva K, Yeary K, Klesges L, Baskin ML, Alcaraz KI, Ford S. *Cancer risk factors and screening across various U.S. rural classification codes: Cancer disparities in the context of rurality.* American Association for Cancer Research, Science of Cancer Health Disparities in Racial/Ethnic Minorities and the Medically Underserved, Virtual Meeting, October 2020.

**Hirko KA,** Lucas DR, Hamilton AS, Pathak DR, Carnegie NB, Houang RT, Schwartz K, Velie EM. *Alcohol consumption and risk of young-onset breast cancer among Non-Hispanic Black and Non-Hispanic White women in the Young Women's Health History Study.* American Association for Cancer Research, Science of Cancer Health Disparities in Racial/Ethnic Minorities and the Medically Underserved Meeting, September 2019.

**Hirko KA**, Schlossman J, Harrison BT, Yeh E, Jacene J, Nakhlis F, Schlosnagel E, Overmoyer BA. *Association of dermal lymphatic involvement and survival in inflammatory breast cancer.* San Antonio Breast Cancer Symposium, December 2018.

**Hirko KA**, Schlossman J, Harrison BT, Yeh E, Jacene J, Nakhlis F, Schlosnagel E, Overmoyer BA. *Association of dermal lymphatic involvement and survival in inflammatory breast cancer*. International Inflammatory Breast Cancer Symposium, September 2018.

Knape G, Klee D, Murungi-Kiama C, Clark K, **Hirko KA**. *Barriers to Cervical Cancer Vaccination and Screening in rural Kenya: A Comparison of Hospital Staff, Nursing Students, Outpatients, and Villagers*. Michigan Rural Health Conference, May 2018.

Casey J, Klee D, **Hirko KA**. Assessment of Resident Educational Environment with Block Scheduling versus Traditional Scheduling Model. Michigan Rural Health Conference, May 2018

**Hirko KA,** Ford S, Wendling A. *Rural Health Disparities: What do we know?* Society for Behavioral Medicine Annual Conference, New Orleans, LA, April 2018

Bauer HH, Anderson CB, **Hirko KA**, Wendling A. *Perceived barriers to college education and healthcare careers among US students from a rural community.* Society of Teachers of Family Medicine Annual Spring Conference, San Diego, CA, May 2017

Funka AA, Rodendo CD, **Hirko KA**, Kupferschmid B, McFarland M. *Reducing unplanned Emergency Department visits and hospitalizations for breast cancer patients receiving outpatient chemotherapy: A retrospective review.* University of Michigan-Flint, School of Nursing Annual Symposium, May 2017

**Hirko KA,** Lajous M, Barrientos-Gutierrez T. *Development of socioeconomic position score using principal component analysis in the Es Maestras Cohort.* Society for Epidemiologic Research Annual Meeting, Denver, CO, June 2015

**Hirko KA,** Chen WY, Willett WC, Hankinson SE, Tamimi RM, Beck A, Rosner BA, Eliassen AH. *Alcohol consumption and risk of breast cancer by molecular subtype.* American Association for Cancer Research Annual Meeting, Philadelphia, PA, April 2015

**Hirko KA,** Chen WY, Willett WC, Hankinson SE, Tamimi RM, Eliassen AH. *Alcohol consumption and risk of breast cancer by molecular subtype.* The Second International Molecular Pathological Epidemiology Meeting, Boston, MA, December 2014

**Hirko KA**, Spiegelman D, Willett WC, Hankinson SE, Eliassen A.H. *Alcohol consumption and plasma sex steroids in premenopausal women*. American Association for Cancer Research Frontiers in Cancer Prevention Annual Meeting, National Harbor, MD, October 2013

**Hirko KA,** Rimm EB, Mukamal K, Cai Q, Signorello LB. *Are there racial differences in free vitamin D levels?* Society for Epidemiologic Research Annual Meeting, Boston, MA, June 2013

**Hirko KA,** Soliman AS, Banerjee M, Ruterbusch J, Harford JB, Merajver SD, Schwartz K. *A comparison of criteria to identify inflammatory breast cancer from medical records and the Surveillance, Epidemiology and End Results database, 2007-2009.* International Inflammatory Breast Cancer Conference, Philadelphia, Pennsylvania, December 2012

**Hirko KA,** Soliman AS, Banerjee M, Ruterbusch J, Harford JB, Chamberlain RM, Graff JJ, Merajver SD, Schwartz K. *Characterizing inflammatory breast cancer among Arab Americans in the California, Detroit and New Jersey Surveillance, Epidemiology and End Results (SEER) registries (1988-2008) American Association for Cancer Research Cancer Health Disparities Meeting, San Diego, CA, October 2012* 

Bergmans R, Soliman AS, Ruterbusch J, Meza R, **Hirko K,** Graff JJ, Schwartz K, *The identification and epidemiological profile of Arab American cancer cases within the California, Detroit and New Jersey SEER registries.* American Association for Cancer Research Cancer Health Disparities Meeting, San Diego, CA, October 2012

#### OTHER INVITED PRESENTATIONS

**Hirko KA.** *Global Epidemiology Research.* Guest Lecture, OST-597: Biomedical Research Structure and Methods. Michigan State University, College of Osteopathic Medicine, May 2023

Greene Hutchings C, Stepanski S, **Hirko KA.** *Grants that Amplify the Reach of Telemedicine.* Invited panel presentation, 26<sup>th</sup> Annual Michigan Rural Health Conference, Mount Pleasant, Michigan. April 25, 2023

**Hirko KA.** *Gun Violence Prevention: The Role of the Medical Community.* Invited presentation, Munson Family Medicine Resident Program, Traverse City, Michigan. April 24, 2023

**Hirko KA,** Braciszewski J. *Multilevel formative evaluation of barriers and facilitators to implementation of an electronic health record-embedded digital health smoking cessation intervention in a rural health system.* Invited speaker, Henry Ford Health Cancer Epidemiology, Prevention and Control seminar, February 14, 2023

**Hirko KA.** *Telemedicine Research to Address Rural Health Disparities.* Invited speaker, Munson Healthcare Provider Forum, Traverse City, Michigan. January 13, 2023

**Hirko KA.** *Implementation of Physical Activity Programs for Rural Cancer Survivors.* Invited speaker, Transdisciplinary Research in Energetics of Cancer (TREC) webinar, September 28, 2022

**Hirko KA.** Preventing Breast Cancer and Reducing Disparities in Risk and Survival. Invited speaker, Michigan Breast Cancer Coalition Membership Meeting, September 24, 2022

**Hirko KA.** *Reframing Gun Violence.* Invited speaker, Good Works Lab, Everyone a Changemaker in Northern Michigan Monthly Meeting, Northwester Michigan College, Traverse City, Michigan. September 8 2022

**Hirko KA.** Collaborating with Healthcare Providers to Address Rural Cancer Disparities. Invited panel, Exercise is Medicine Research Learning Collaborative. Virtual Meeting, January 2022

**Hirko KA.** *Global Cancer Epidemiology: An Introduction.* Guest Lecture, Epidemiology 200: A Multidisciplinary Approach to Problems in Global Public Health & Epidemiology. Michigan State University, November 2021

**Hirko KA.** *Community-based Cancer Research in Rural Northwest Michigan: An Overview.* University of Michigan Rogel Cancer Grand Rounds, October 2021

**Hirko KA.** *Community-based Cancer Research in Northwest Michigan: An Overview.* Henry Ford Health System's Cancer Epidemiology, Prevention and Control program meeting, September 2021

**Hirko KA**. *Implementing Sustainable Digital Health Systems in Central Uganda*. Michigan State University College of Human Medicine Town Hall, Virtual Meeting, June 2021

**Hirko KA**. *Telemedicine in response to COVID-19: Implications for Rural Health Disparities.* Munson Healthcare Friday Medical Conference, Virtual Meeting, June 2021

**Hirko KA,** Kerver JK. *Updates from Michigan State University Epidemiologists in Traverse City.* American Association of University Women virtual meeting, Traverse City Chapter, Traverse City, MI, January 2021

**Hirko KA, Barnett S.** *Health Care Deserts: What is Happening in Rural America?* Michigan State University Bioethics for Breakfast virtual meeting, October 2020.

- **Kirko KA,** Paneth, N. *Identifying Opportunities for Implementation Science Approaches in the ECHO Program.* Theoretical and Conceptual Advances ECHO Discovery webinar series, February 2020.
- **Hirko KA.** *Lack of Broadband Access as a Social Determinant of Health.* National Cancer Prevention Workshop, John Dingell Disparities & Inequities Panel, February 2020
- **Hirko KA.** *Rural Cancer Disparities.* National Cancer Prevention Workshop, Healthy Town Initiatives Panel, February 2020
- **Hirko KA,** Kerver JK. *Michigan State University Community-Based Research Update.* American Association of University Women, Traverse City Chapter, Traverse City, MI, September 2019
- **Hirko KA,** Kerver JK. *Michigan State University & Munson Medical Center Community-Based Research Initiatives.* Munson Healthcare Friday Medical Conference, Traverse City, MI, March 2019
- **Hirko KA.** *Investigating the High Burden of Breast Cancer in Grand Traverse County.* Munson Medical Center Quarterly Ambulatory Care Department Meeting, Traverse City, MI, May 2018
- **Hirko KA**. *Social Determinants of Rural Breast Cancer Disparities.* University of Wisconsin Milwaukee, Joseph J. Zilber School of Public Health, Research Seminar, October 2017
- **Hirko KA.** *The Role of Diet in Breast Cancer Prevention.* Grand Rounds Medical Conference, Munson Medical Center, Traverse City, MI, October 2016
- **Hirko KA.** *Nutrition: The Foundation for Lifelong Health.* Great Start Collaborative Meeting. Traverse City, MI, September 2016

#### **TEACHING AND ADVISING**

- **Co-teacher,** Foundations of Population Health, Department of Epidemiology & Biostatistics, Michigan State University College of Human Medicine, Fall 2022
- **Co-teacher,** Advanced Skills and Knowledge, Michigan State University College of Human Medicine, Fall-Spring 2021-2022
- **Dissertation Committee Advisor,** Department of Communication Arts and Sciences, Michigan State University. Katie Mitchell (Major Advisor Bree Holtz), Formed 2020
- **Co-teacher,** Advanced Skills and Knowledge, Michigan State University College of Human Medicine, Fall-Spring 2020-2021
- **Masters Thesis Committee Advisor,** Department of Epidemiology and Biostatistics, Michigan State University. Elizabeth Blain (Major Advisor Claudia Holzman), Completed 2020
- **Co-teacher,** Critical Appraisal/Analytic Medicine (CAAM), Michigan State University College of Human Medicine, Fall-Spring 2019-2020
- **Co-teacher,** Critical Appraisal/Analytic Medicine (CAAM), Michigan State University College of Human Medicine, Fall-Spring 2018-2019
- **Dissertation Committee Advisor,** Department of Epidemiology and Biostatistics, Michigan State University. Elizabeth Hudson (Major Advisor Dorothy Pathak), Formed 2018
- **Co-teacher,** Critical Appraisal/Analytic Medicine (CAAM), Michigan State University College of Human Medicine, Fall-Spring 2017-2018

Co-teacher, Critical Appraisal/Analytic Medicine (CAAM), Michigan State University College of Human Medicine, Fall-Spring 2016-2017

**Teaching Assistant, Principles of Epidemiologic Methods, Boston University School of Public** Health, Fall 2007

**Teaching Assistant, Principles of Epidemiologic Methods, Boston University School of Public** Health, Fall 2006

#### PROFESSIONAL SERVICE

#### First editor:

British Journal of Nutrition (January 2020-December 2026) *Journal of Nutritional Sciences (January 2020-December 2026)* 

#### Editorial board member:

BMC Medicine (2021-2024)

Guest Editor: International Journal of Environmental Research in Public Health, Special Issue "Cancer Incidence and Risk Factors: Preventing Cancer across the Life Course"

#### *Ad hoc* reviewer:

American Journal of Public Health American Journal of Preventive Medicine BMC Medicine

BMJ Open

Breast Cancer Research

Breast Cancer Research and Treatment

Cancer Causes and Control

Clinical Lung Cancer

Critical Reviews in Food Science and Nutrition

International Journal of Epidemiology

*Journal of Cancer Education* 

*Journal of Cancer Survivorship* 

*Iournal of Human Nutrition and Dietetics* 

Journal of National Cancer Institute

**Nutrients** 

SSM-Population Health

The Journal of Rural Health (recognized as an exceptional reviewer, being approximately top 22% of all Journal's peer reviewers according to quality, frequency and timeliness, 2020-2021)

Grant reviewer and study section participant: American Health Association, Health Equity Research Network on Rural Health Disparities grant review, May 2023

#### PROFESSIONAL AFFILIATIONS

American Association for Cancer Research (2010-present) Society for Epidemiological Research (2012-present)

International Epidemiological Association (2013-present)

American Association for Cancer Research, Population Sciences working group (2015-present)

Society for Behavior Medicine (2017-present)

Alliance for Clinical Trials in Oncology (2019-present)

Cancer Research Consortium of West Michigan (2019-present)

Michigan Cancer Consortium (2020-present)

Big Ten Cancer Consortium (2021-present)

University of Michigan Rogel Cancer Center, Community Outreach Program Community Advisory Board Member (2022-present)

#### **GRANT SUPPORT**

2022-2023	Multilevel formative evaluation of barriers and facilitators to implementation of an electronic health record-embedded digital health smoking cessation intervention in a rural health system, Henry Ford Health + Michigan State University Health Sciences Cancer Pilot Grants Co-PI (in-kind)
2022-2023	Examining the prevalence and impact of lung and non-lung incidental findings on low-dose CT scans for lung cancer screening in a rural and urban health system, Henry Ford Health + Michigan State University Health Sciences Cancer Pilot Grants

Co-PI (in-kind)

2022-2023 Increasing Equity in Implementation of Electronic Patient Reported Outcome Measures Platform to Improve Delivery of Cancer Care, Henry Ford Health +

Michigan State University Health Sciences Cancer Pilot Grants Co-PI (in-kind)

2022-2023 Examining geographic, racial and ethnic disparities in access and utilization of targeted drug therapies and genetic testing in breast cancer, Henry Ford Health + Michigan State University Health Sciences Cancer Pilot Grants Co-PI (in-kind)

Food as Medicine for High-Risk Pregnant and Postpartum Women (PI: Kerver)
Nutrition & Healthy Lifestyle, Michigan Health Endowment Fund
Co-Investigator (10%)

#### PAST GRANTS SUPPORT

2021-2022	Telemedicine to Improve Healthcare Access for Rural Seniors (PI: Hirko)
	Community Health Impact, Michigan Health Endowment Fund

Using Health Information Technology Governance and Epidemiologic Approaches to Implement Sustainable Digital Health Systems in Central Uganda (co-PI: Hirko)
Partnerships for Innovative Research in Africa, Alliance for African Partnership, Department of International Studies & Programs, Michigan State University

2020-2022 Preliminary Assessment of Telehealth Needs among Rural Community Stakeholders (Co-PI: Hirko, in kind)

MSU S3 Interdisciplinary Seed Grant Award

The goal of this project is to conduct a preliminary assessment of telehealth needs among rural community stakeholders in lower Northern Michigan. Findings from this study will provide pilot data to inform a future grant application to implement telehealth initiatives in rural Michigan.

2020-2022 Culturally-targeted communication to promote SARS-CoV-2 antibody testing in saliva: Enabling evaluation of inflammatory pathways in COVID-19 racial disparities

(PI: Lucas)

NIH U01CA260469

Co-investigator (10%), Supplement

As a co-investigator, I am facilitating recruitment of participants in rural areas of Northwest Michigan and contributing to data interpretation and dissemination

2017-2021 Prenatal Exposures and Child Health Outcomes: A Statewide Study (PI: Paneth) NIH 1UG30D023285-01

Co-investigator (9%)

This project seeks to examine the influence of environmental contaminants, nutritional factors and inflammation during pregnancy and the perinatal period on later child health outcomes, including cognitive outcomes, autism spectrum disorders, and obesity. As a co-investigator, I serve as a member of the Nutrition/Metabolic team to assess the effect of maternal nutritional and weight status in pregnancy on cognitive outcomes and childhood obesity.

2020-2021 Data-Driven Public Health Strategies and Policies to Mitigate COVID-19 Disparities

PI: Misra)

Michigan Public Health Institute

Co-Investigator (10%)

2018-2020 Food as Medicine for Older Adults with Chronic Health Conditions (Co-I: Hirko)

Michigan Health Endowment Fund

Co-Investigator (15%)

This project seeks to build a sustainable model for optimizing food access and nutritional status of older adults in the northwest region of Michigan's lower peninsula by providing nutritional services after hospital discharge and enhanced transfer of care to community-based programs. Our goal addresses two of the issues of critical need identified by the Health Fund Board—Nutrition & Healthy Lifestyles and Healthy Aging—and aligns with both of the Fund's cross-cutting goals by strengthening workforce capacity and building a cost-effective model for nutritional care coordination.

2019-2020 Expanding Medication Assisted Treatment for Opioid Use Disorder in a Rural Emergency Department (Co-I: Hirko)

Substance Abuse and Mental Health Services Administration

Consultant and Outcome Evaluator

The goal of this project is to implement a Medication Assisted Treatment (MAT) program in the Emergency Department at Munson Medical Center that includes coordination with behavioral health, community and peer recovery services.

2015-2017 Improving Colorectal Cancer Screening Participation: A Randomized Trial of

Motivational Messaging and Low-Cost Alternative Screening Options

MidMichigan Health Foundation Award (\$21,625)

Principal Investigator (2%)

This project was initiated to boost participation in colorectal screening participation in the MidMichigan Collaborative Care Organization. We randomized patients due for colorectal cancer screening to receive a letter with American Cancer Society's motivational messaging and an offer for a free at-home stool screening kit and compared screening uptake in this group compared to the traditional mailing stating that the patient is due for colorectal cancer screening.

As a Principal Investigator, I designed the study and worked with the study team to coordinate the trial and analyze the findings.

#### **GRANTS SUBMITTED**

Using technology to optimize tobacco cessation efforts in rural populations (PI: Hirko 35%)

National Institutes of Health, National Cancer Institute, R01 Submitted February 2023

#### **GRANTS NOT FUNDED**

Implementation of a multi-level intervention to optimize tobacco cessation efforts in rural populations (PI: Hirko 35%)

National Institutes of Health, National Cancer Institute, R01

Submitted March 2021, Resubmitted March 2022

Using digital health tools to optimize oncology patient navigation and address rural cancer disparities (PI: Hirko 20%)

American Cancer Society, Navigation Capacity-Building Initiative Submitted May 2022

Implementation of a multi-level intervention to increase physical activity among rural breast cancer survivors (PI: Hirko 20%)

American Cancer Society, Research Scholar Grant

Submitted March 2022

Implementation of a multi-level intervention to increase physical activity among rural breast cancer survivors (PI: Hirko 30%)

National Institutes of Health, National Cancer Institute, R21/R33 Submitted October 2020

Leveraging at-home screening tools to address rural colorectal cancer disparities (PI: Hirko 35%)

National Institutes of Health, National Cancer Institute, R01 Submitted October 2020

Expansion of Services for Substance Use Disorder in Rural Northwest Michigan. (consultant: Hirko).

Health Resources & Services Administration (HRSA), Rural Health Care Services Outreach Program Submitted December 2020

Can MyT1DHero help rural adolescents with type 1 diabetes? A randomized controlled trial of a mHealth intervention to improve health outcomes through better patient-child communication. (Co-I: Hirko 10%) National Institutes of Health, R01 Submitted November 2020

Palliative Care in a Rural Setting (consultant: Hirko) Michigan Health Endowment Fund, 2020 Healthy Aging Initiative Submitted August 2020

Leveraging Rural Health Provider Recommendations to Drive a Multilevel Approach to Increase HPV Vaccine Uptake (Co-I: Hirko 15%)
National Institutes of Health, National Cancer Institute, R21
Submitted June 2020

Communicating Obesity Risk to Rural Populations: A Computational and Neuroscientific Approach to Precision Messaging in a New Media Environment (Co-I: Hirko 15%)

National Institutes of Health, National Cancer Institute, R01 Submitted June 2020

Understanding how to best implement broadband internet access initiatives to reduce health disparities in rural areas

Robert Wood Johnson Foundation, Interdisciplinary Research Leaders, 2019 (\$350,000)

Lead investigator (25%)

Tobacco cessation program support in a rural setting Prevent Cancer Foundation, 2019 Community Grants Program (\$25,000) Principal Investigator (0%)

Dissemination of tobacco cessation resources in a rural setting Michigan Department for Health and Human Services (\$45,000) Principal Investigator (0%)

Empowering young adults to establish a lifetime of healthy physical activity and nutritional habits

MidMichigan Health Foundation Award (\$497,412.00)

Principal Investigator (20%)

The goal of this proposal is to implement an evidence-based aerobic exercise program, incorporating strategies for optimizing outcomes of exercise and nutritional habits for sedentary young and emerging adults attending a rural community college in rural Michigan.

Effect of physical activity on plasma sex hormone concentrations among postmenopausal breast cancer survivors: A comparison of resistance training and yoga interventions (PI: Hirko)

National Institutes of Health, National Cancer Institute, R21 PAR-18-016 Principal Investigator (30%)

This transdisciplinary research project utilizes an experimental design to test the effects of physical activity interventions on biomarkers of breast cancer prognosis and contributes our overall goal of identifying biological pathways linking physical activity to breast cancer prognosis.

Factors associated with re-excision surgery and residual disease after breast-conserving surgery (PI: Hirko)

Blue Cross Blue Shield of Michigan Foundation

Principal Investigator (30%)

In this proposal, we aim to identify clinicopathological, treatment and/or demographic characteristics, such as tumor stage, histologic type, receipt of neoadjuvant chemotherapy, age and body mass index (BMI) at diagnosis associated with re-excision after breast-conserving surgery and residual disease in the re-excised tissue specimen at a large community cancer center in a rural region of Northern Michigan.

Breast Cancer Screening and Early Detection Education in a Rural Setting (PI: Hirko) Prevent Cancer Foundation Community Grants

Principal Investigator (0%)

The goal of this project is to build and effective and sustainable community partnership for breast cancer education, detection, and screening among underserved women throughout rural northern Michigan. The proposed project will incorporate community-based lay cancer educator teams to deliver evidence-based education on the importance of breast cancer screening and early detection among vulnerable populations, including rural, migrant and seasonal farmworkers, and Native American communities in Northern Michigan.

Breast Cancer Survivorship and Disparities in a Rural Setting (PI: Hirko) National Institutes of Health, National Cancer Institute, K07 CA222151-01 Principal Investigator (90%)

This project seeks to examine the influence of extent of urbanization within a rural setting on breast cancer stage at diagnosis and survival and to identify predictors of non-adherence to breast cancer treatment guidelines in a rural area. As a career development award, this grant would support the mentored development and training in areas of rural disparities and clinical breast cancer management.

Environmental Risk Factors for Breast Cancer in Northern Michigan (PI: Hirko) Impact 100 grant

Principal Investigator (20%)

The goal of this project is to identify factors explaining the elevated breast cancer burden in Grand Traverse County. We will conduct a systematic research investigation to detail the geographic distribution of breast cancer incidence and trends in the region and will also incorporate county-level data on environmental chemical use over time. Next, we will assess pollutants in environmental samples (soil, water, air) across the 5-county region in comparison to the geographic spread of breast cancer. Finally, we will collect blood samples from women diagnosed with breast cancer from across the region to measure presence of known or suspected

carcinogenic compounds, and will examine differences in these concentrations across counties and between younger and older breast cancer cases.

Implementation and Evaluation of Clinical Pathways in Breast Cancer to Manage Cancer-Related Fatigue (PI: Hirko)

National Comprehensive Cancer Network (NCCN)/Pfizer grant Principal Investigator (5%)

The overall goal of this proposal is to standardize the management of cancer-related fatigue (CRF) at our institution to improve the quality of care. We propose to implement a standardized clinical pathway to identify CRF throughout the cancer care continuum and to mitigate CRF using onsite NCCN-recommended interventions (physical activity, massage therapy, / mindfulness-based stress reduction, nutritional consultation, and psychosocial support. CRF will be assessed throughout the cancer care continuum using the validated Brief Fatigue Inventory instrument.

#### **RECOMMENDERS**

#### **POST-DOCTORAL MENTORS:**

### A. Heather Eliassen, ScD

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#### **DOCTORAL ADVISORS:**

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