BIOGRAPHICAL SKETCH

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NAME: D'Arcy, Monica

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

POSITION TITLE: Instructor of Epidemiology

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	Completion Date MM/YYYY	FIELD OF STUDY
University of Pennsylvania, Philadelphia, PA	B.A.	08/1998	Mathematics
University of Pennsylvania, Philadelphia, PA	B.A.S.	08/1998	Computer Science Engineering
Temple University, Philadelphia, PA	M.S.	05/2008	Epidemiology
University of North Carolina, Chapel Hill, NC	Ph.D.	12/2016	Epidemiology
National Cancer Institute, Bethesda, MD	Postdoctoral	04/2022	Cancer Epidemiology

A. Personal Statement

I am an Instructor of cancer and pharmacoepidemiology in the Department of Medicine, Division of Medical Oncology, Section of Cancer Epidemiology and Health Outcomes at Rutgers University, and an Associate member in the New Jersey Cancer Center. I am a core member within the Institute for Health, Health Care Policy, and Aging Research and the Center for Pharmacoepidemiology and Treatment Sciences Rutgers Biomedical and Health. Broadly, I am an epidemiologist who studies cancer etiology and survivorship using large datasets paired with innovative computational and pharmacoepidemiologic methods. Watching family and friends pass from rare cancers, and my current experience getting treated for an *aggressive, but treatable,* cancer has informed my long-term career goals. My overarching aim is to translate my scientific findings into actionable interventions to reduce the burden of cancers for which screening lacks.

I have extensive experience using several types of big data for epidemiologic cancer studies including gene expression, Medicare claims, the United Kingdom's Clinical Practice Datalink, SEER-Medicare and solid organ transplant registry data. My specialized training in cancer and pharmacoepidemiology, undergraduate degrees in mathematics and computer science engineering, and over a decade of software development and bioinformatics experience should enable me to achieve my long-term scientific goals.

Publications pertinent to near-term grant applications:

1. **D'Arcy ME**, Pfeiffer RM, Li M, Kebede M, Dellavalle C, Bradley M., Wang Y, Gadella SM, Landi MT. "Electronic Health Records reveal a link between inflammatory diseases and lung cancer in never smokers", under review
2. **D'Arcy ME**, Castenson D, Lynch CF, Kahn AR, Morton LM, Shiels MS, Pfeiffer RM, Engels EA. "Risk of Rare Cancers Among Solid Organ Transplant Recipients." *J Natl Cancer Inst*. 2021 Feb 1;113(2):199-207. doi: 10.1093/jnci/djaa078. PMID: 32462187; PMCID: PMC7850530.
3. **D'Arcy ME**, Pfeiffer RM, Rivera DR, Hess GP, Cahoon EK, Arron ST, Brownell I, Cowen EW, Israni AK, Triplette MA, Yanik EL, Engels EA. Voriconazole and the Risk of Keratinocyte Carcinomas Among Lung Transplant Recipients in the United States. JAMA Dermatol. 2020 Jul 1;156(7):772-779. doi: 10.1001/jamadermatol.2020.1141. PMID: 32401271; PMCID: PMC7221851.

B. Positions, Scientific Appointments, and Honors

Positions and Scientific Appointments

May 2022- Associate member, New Jersey Cancer Center, Rutgers University, New Brunswick, NJ

May 2022- Instructor in the Department of Medicine, Division of Medical Oncology, Section of Cancer Epidemiology and Health Outcomes

May 2022- Core member: Institute for Health, Health Care Policy, and Aging Research and the Center for Pharmacoepidemiology and Treatment Sciences Rutgers Biomedical and Health Sciences, Rutgers University, New Brunswick, NJ

May 2022- Special Volunteer, Division of Cancer Epidemiology and Genetics, National Cancer Institute, NIH, Bethesda, MD

2015- Member, International Society of Pharmacoepidemiology

Honors

2023 NCI Director's Award, Sherlock-Lung Team, for Population Science-Scientific: "In recognition of innovation and insights into the origin and diversity of lung cancers in never smokers"

2022 CINJ new investigator award

2021 NCI Director's Research Innovation Award
2020 NCI Intramural Research Award
2020 NIH Fellows Award for Research Excellence
2016-17 Travel Grant, International Society for Pharmacoepidemiology
2015-16 Center for Pharmacoepidemiology, pre-doctoral fellow
2015 Koch Travel Award, University of North Carolina
2015 Department of Epidemiology Travel Award, University of North Carolina
2013-15 Cancer Control and Education Program, pre-doctoral fellow, University of North Carolina
2013 Student Dissertation Workshop Participant. Society for Epidemiological Research
2012 Harry A. Guess-Merck Scholarship in Pharmacoepidemiology, University of North Carolina
2010-2011 Ibrahim Fellowship, University of North Carolina
2010-2011 Graduate Merit Fellowship, University of North Carolina

C. Contributions to Science

1. Using large, diverse datasets to study cancer etiology and outcomes

Most of my doctoral and postdoctoral research has used large and diverse datasets to perform molecular and pharmacoepidemiological cancer studies. Many of these studies leveraged multiple data sources and innovative strategies to ask substantively important questions.
Examples of my work include:

1. **D'Arcy ME**, Pfeiffer RM, Li M, Kebede M, Dellavalle C, Bradley M., Wang Y, Gadella SM, Landi MT. "Electronic Health Records reveal a link between inflammatory diseases and lung cancer in never smokers", under review
2. **D'Arcy ME**, Castenson D, Lynch CF, Kahn AR, Morton LM, Shiels MS, Pfeiffer RM, Engels EA. "Risk of Rare Cancers Among Solid Organ Transplant Recipients." *J Natl Cancer Inst*. 2021 Feb 1;113(2):199-207. doi: 10.1093/jnci/djaa078. PMID: 32462187; PMCID: PMC7850530.
3. **D'Arcy ME,** Coghill AE, Lynch CF, Koch LA, Li J, Pawlish KS, Morris CR, Rao C, Engels EA. Survival after a cancer diagnosis among solid organ transplant recipients in the United States. *Cancer*. 2019 Mar 15;125(6):933-942. doi: 10.1002/cncr.31782. Epub 2019 Jan 9. PMID: 30624768; PMCID: PMC6403005.

4. **D'Arcy ME**, Beachler DC, Pfeiffer RM, Curtis JR, Mariette X, Seror R, Mahale P, Rivera DR, Yanik EL, Engels EA. “Tumor Necrosis Factor Inhibitors and the Risk of Cancer among Older Americans with Rheumatoid Arthritis” *Cancer Epidemiol Biomarkers Prev*. 2021 Nov;30(11):2059-2067. doi: 10.1158/1055-9965.EPI-21-0125. Epub 2021 Aug 23. PMID: 34426413; PMCID: PMC8568666.
5. **D'Arcy ME**, Pfeiffer RM, Rivera DR, Hess GP, Cahoon EK, Arron ST, Brownell I, Cowen EW, Israni AK, Triplette MA, Yanik EL, Engels EA. Voriconazole and the Risk of Keratinocyte Carcinomas Among Lung Transplant Recipients in the United States. JAMA Dermatol. 2020 Jul 1;156(7):772-779. doi: 10.1001/jamadermatol.2020.1141. PMID: 32401271; PMCID: PMC7221851.
6. **D'Arcy M**, Fleming J, Robinson WR, Kirk EL, Perou CM, Troester MA. Race-associated biological differences among Luminal A breast tumors. Breast Cancer Res Treat. 2015 Jul;152(2):437-48. doi: 10.1007/s10549-015-3474-4. Epub 2015 Jun 25. PMID: 26109344; PMCID: PMC4527078.

2. Computational infrastructure to study immunology and the inherited features of psychiatric disease
Prior to initiating my doctoral program, I worked as a software developer and bioinformatics specialist in a small team at the Children’s Hospital of Philadelphia (CHOP). At CHOP I developed a software tool to automate the process of generating oligonucleotide for long range sequence extraction, performed next generation sequence analysis and contributed to the development of tools to visualize genomic information. Examples of my work include:

1. Jayaraman P, Mosbruger T, Hu T, Tairis NG, Wu C, Clark PM, **D'Arcy M**, Ferriola D, Mackiewicz K, Gai X, Monos D, Sarmady M.; AnthOligo: automating the design of oligonucleotides for capture/enrichment technologies; Bioinformatics, 36(15):4353-4356, 2020
2. Dapprich J, Ferriola D, Mackiewicz K, Clark PM, Rappaport E, **D'Arcy M**, Sasson A, Gai X, Schug J, Kaestner KH, Monos D.; The next generation of target capture technologies - large DNA fragment enrichment and sequencing determines regional genomic variation of high complexity; BMC Genomics,17:486-500, 2016
3. Lind C, Ferriola D, Mackiewicz K, Heron S, Rogers M, Slavich L, Walker R, Hsiao T, McLaughlin L, **D'Arcy M**, Gai X, Goodridge D, Sayer D, Monos D.; Next-generation sequencing: the solution for high-resolution, unambiguous human leukocyte antigen typing; Hum Immunol., 71(10):1033-42, 2010
4. Elia J, Gai X, Xie HM, Perin JC, Geiger E, Glessner JT, **D'arcy M,** deBerardinis R, Frackelton E, Kim C, Lantieri F, Muganga BM, Wang L, Takeda T, Rappaport EF, Grant SF, Berrettini W, Devoto M, Shaikh TH, Hakonarson H, White PS.; Rare structural variants found in attention-deficit hyperactivity disorder are preferentially associated with neurodevelopmental genes; Mol Psychiatry, 15(6):637-46, 2010