

Thomas P. Ahern
CURRICULUM VITAE

Position: Associate Professor
Department of Surgery

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EDUCATION

<u>Year</u>	<u>Institution</u>	<u>Degree</u>	<u>Area of Degree, Accolades</u>
2012	Harvard School of Public Health	Post-Doctoral	Cancer Epidemiology
2010	Boston University	Ph.D.	Epidemiology
2006	Boston University	M.P.H	Epidemiology
1999	University of Vermont	B.S.	Biochemistry

FACULTY POSITIONS HELD

<u>Years</u>	<u>Institution</u>	<u>Academic Title</u>	<u>Department</u>
2021-present	University of Vermont, Larner College of Medicine	Associate Professor with Tenure	Surgery (primary) Biochemistry (secondary)
2017-present	University of Vermont, Larner College of Medicine	Assistant Professor, Tenure-track	Surgery
2020-present	Aarhus University, Aarhus, Denmark	Honorary Associate Professor	Oncology
2019-present	Dartmouth College, Geisel School of Medicine	Adjunct Assistant Professor	Epidemiology
2014- present	University of Vermont, Larner College of Medicine	Assistant Professor (Secondary appointment)	Biochemistry
2013-2017	University of Vermont, Larner College of Medicine	Research Assistant Professor	Surgery

2012-2013	Brigham and Women's Hospital	Associate Epidemiologist	Medicine
2011-2012	Harvard Medical School	Instructor	Medicine

OTHER POSITIONS AND MAJOR ADMINISTRATIVE POSITIONS HELD

<u>Years</u>	<u>Location/Program Name</u>	<u>Role</u>
2012-2013	Department of Clinical Epidemiology, Aarhus University, Denmark	Visiting Fellow

HONORS AND AWARDS

<u>Year</u>	<u>Name of Award</u>
2011	Fred F. Kadlubar Scholar-in-Training Award American Association for Cancer Research
2011	Best Presentation by a Postdoctoral Fellow Harvard School of Public Health
2012	Molecular Epidemiology Group Scholar-in-Training Award American Association for Cancer Research
2012, 2014, 2015	Loan Repayment Program, Clinical Research National Institutes of Health
2017	James E. Demeules Award for Dedication to Excellence in Research
2018	Department of Surgery, University of Vermont Medical Center Rising Star New Investigator Award Dean's Excellence in Research Awards, The Robert Larner, M.D. College of Medicine at The University of Vermont

KEYWORDS/AREAS OF INTEREST

molecular epidemiology, pharmacoepidemiology, drug safety, breast cancer, oncology, epidemiologic methods, causal inference

SUMMARY OF PROFESSIONAL ACTIVITIES- OVERALL

My scholarly activities consist mostly of research (85%), with about 15% of my effort devoted to teaching and university service.

My research program focuses on the molecular- and pharmaco-epidemiology of breast cancer incidence and survival. I have developed a large and interdisciplinary network of local, national, and international collaborators with whom I conduct population-based studies to answer pressing questions with relevance to both breast cancer survivors and to women at risk for breast cancer. Since joining the University of Vermont in 2013, I have received research grants as principal investigator (PI) from the National Institutes of Health, Susan G. Komen for the Cure, The Mary Kay Foundation, and The Saint Baldrick's Foundation. I was UVM PI and co-investigator on R01 CA166825, which explored the genetic epidemiology of tamoxifen treatment failure. I was selected in 2017 as a Project Director for the Vermont Center on Behavior and Health COBRE to study the impact of behavioral risk factors for breast cancer in women at high risk. I am currently UVM PI and co-investigator on R01 LM013049, in which my research team is developing Monte Carlo

and Bayesian methods for quantification and correction of systematic bias in epidemiologic studies. To date, I have authored over 80 research papers and letters, many of which appear in top-tier oncology or epidemiology journals, garnering an h-index of 26 and over 2,300 citations (per Google Scholar). My research is often highlighted at national and international meetings, including platform talks at the San Antonio Breast Cancer Symposium, the Society for Epidemiologic Research, and the International Congress on Pharmacoepidemiology. The quality and impact of my work have been recognized by the NIH Loan Repayment Program, by my department (James E. Demueles Award for Dedication to Research Excellence), and by the Larner College of Medicine (Dean's Rising Star New Investigator Award). In addition to these research activities, I am actively engaged in teaching, mentoring, and service as detailed below.

SUMMARY OF ACCOMPLISHMENTS

I am an internationally recognized breast cancer epidemiologist, reflected by my recent appointment as Honorary Associate Professor in the Department of Clinical Medicine, Division of Oncology, at Aarhus University in Denmark, and by repeated invitations to teach epidemiologic methods at the University of Tampere in Finland. I have demonstrated capability in securing grant funding from both private foundations (Susan G. Komen, Mary Kay, and Saint Baldrick's Foundation) and the National Institutes of Health, both as PI and as an integral member of multi-disciplinary teams. I have a strong published record of scholarly contribution to the fields of epidemiology and clinical oncology (h-index=26, >2,300 citations). I enthusiastically mentor undergraduates, graduate students, and both resident and attending physicians in the conduct of epidemiologic research. I am active in service to my field as a member of grant review committees for Susan G. Komen for the Cure, the Mary Kay Foundation, the Saint Baldrick's Foundation, the Vermont Center for Cardiovascular and Brain Health, and as Chair of the Awards Committee for the Society for Epidemiologic Research. Key research discoveries include a protective association between lipophilic statins and breast cancer recurrence, which motivated a Danish clinical trial of atorvastatin in the breast cancer adjuvant setting, and a positive association between high-level dibutyl phthalate exposure and the incidence of estrogen receptor-positive breast cancer.

PROFESSIONAL SERVICE

DEPARTMENTAL SERVICE

<u>Years</u>	<u>Department</u>	<u>Committee</u>	<u>Role</u>
2010-2012	Channing Division of Network Medicine, Brigham and Women's Hospital and Harvard Medical School	Channing Happiness Committee	Member
2014-2020	Surgery	Surgical Senior Program Committee	Member
2015-Present	Surgery	Surgical Research Committee	Member

COLLEGE SERVICES

<u>Years</u>	<u>Service Committee</u>	<u>Role</u>
2014	Vermont Cancer Center Research Symposium Planning Committee	Symposium Co-chair
2016-Present	Data Stewardship Committee, Vermont Health Care Uniform Reporting and Evaluation System (VHCURES)	Member
2022, 2023	Dean's Excellence in Research Awards, Larner College of Medicine	Reviewer
2022	Faculty Search Committee: UVM Cancer Center Associate Director for Community Outreach/ Cancer Epidemiologist	Member
2023	Facult Search Committee: UVM Cancer Center Global Health Tenure-track Assistant/Associate Professor	Member

MEDICAL CENTER SERVICE - none

UNIVERSITY SERVICE

<u>Years</u>	<u>Service Committee</u>	<u>Role</u>
03/2021-07/2021	University of Vermont Faculty Senate Executive Council	Intermin Member-at-Large (Elected)
2016-2022	University of Vermont Faculty Senate	Elected Senator
2021, 2023	Pilot Grant Program; Vermont Center for Cardiovascular and Brain Health	Grant reviewer
04/2022-Present	Protocol Review and Monitoring Committee	Primary Reviewer and Voting Member
2023	Pilot Gran Program; University of Vermont Cancer Center	Grant reviewer
2024	American Cancer Society – Internal Research Grant Program (<i>via</i> University of Vermont Cancer Center	Grant reviewer

GOVERNMENT - none

SOCIETY MEMBERSHIPS

<u>Years</u>	<u>Society</u>
2006-Present	Society for Epidemiologic Research
2009-Present	American Association for Cancer Research
2016-Present	International Society for Pharmacoepidemiology

SERVICE TO PROFESSIONAL ORGANIZATIONS

<u>Years</u>	<u>Service Committee</u>	<u>Role</u>
2014	Abstract Mentoring Committee,	Mentor
2014-2015	Society for Epidemiologic Research Post-Doctoral Grant Review Committee, Susan G. Komen for the Cure	Reviewer
2014	Session Co-chair, Annual Meeting of the Society for Epidemiologic Research, “Modifiable risk factors for breast cancer: still searching...”	Co-chair
2015	Grant Review Committee, Mary Kay Ash Charitable Foundation	Reviewer
2015-2018	Awards Committee, Society for Epidemiologic Research	Member
2016-Present	Abstract Review Committee, Society for Epidemiologic Research	Member
2018-Present	Awards Committee, Society for Epidemiologic Research	Chair
2018, 2019	Abstract Review Committee, International Society for Pharmacoepidemiology	Member
2018	Session Co-chair, Congress of the International Society for Pharmacoepidemiology, “Your Pills, Your Cancer Risk”	Co-chair
2019, 2020, 2022, 2023	Grant Review Committee, Saint Baldrick's Foundation	Reviewer

SERVICE TO PROFESSIONAL PUBLICATIONS

<u>Years</u>	<u>Journal/Publication/Board</u>
2024-present	Clinical Epidemiology, Associate Editor in Chief
2022-present	British Journal of Cancer, Editorial Board Member
Multiple, ongoing	JAMA Oncology, <i>Ad hoc</i> reviewer. Journal of the National Cancer Institute, <i>Ad hoc</i> reviewer. Journal of Clinical Oncology, <i>Ad hoc</i> reviewer. British Medical Journal, <i>Ad hoc</i> reviewer. British Journal of Cancer, <i>Ad hoc</i> reviewer Epidemiology, <i>Ad hoc</i> reviewer. American Journal of Epidemiology, <i>Ad hoc</i> reviewer. Cancer Causes and Control, <i>Ad hoc</i> reviewer. The Oncologist, <i>Ad hoc</i> reviewer. Pharmacoepidemiology and Drug Safety, <i>Ad hoc</i> reviewer. Canadian Medical Association Journal, <i>Ad hoc</i> reviewer. European Journal of Cancer, <i>Ad hoc</i> reviewer. European Journal of Epidemiology, <i>Ad hoc</i> reviewer. The Breast, <i>Ad hoc</i> reviewer.

	Preventive Medicine, <i>Ad hoc</i> reviewer. Journal of Clinical Epidemiology, <i>Ad hoc</i> reviewer. Clinical Epidemiology, <i>Ad hoc</i> reviewer. Pediatrics, <i>Ad hoc</i> reviewer. Breast Cancer Research and Treatment, <i>Ad hoc</i> reviewer.
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PUBLIC SERVICE

<u>Years</u>	<u>Service Role</u>
1995-2000	Emergency Medical Technician, University of Vermont Rescue Squad, Burlington, VT

SUMMARY OF SERVICE ACTIVITIES

At the department level, I served on the Surgical Senior Program Committee, where I was responsible for reviewing proposals, interim progress, and final reports for research projects of UVM medical students majoring in surgery. I currently sit on the Surgical Research Committee, responsible for reviewing 6-8 grant applications per year. At the college level, I currently serve on the Vermont Health Care Uniform Reporting and Evaluation System (VHCURES) Data Stewardship Committee, through which I review all data usage applications involving Vermont's all-payer claims database. At the university level, I served for 4 years as an elected senator to the UVM Faculty Senate, including a 4-month interim posting as a Member-at-Large on the Executive Council. I currently serve as a Primary Reviewer and Voting Member on the UVM Cancer Center Protocol Review and Monitoring Committee, which is responsible for ensuring the scientific rigor of all clinical cancer research carried out at our institution. On the national level, I served as Chair of the Awards Committee for the Society for Epidemiologic Research (SER). I also serve annually as an abstract reviewer for both SER and the International Society for Pharmacoepidemiology (ISPE), and moderate sessions at these societies' annual meetings. I have also served on *ad hoc* grant review committees for the Susan G. Komen, Mary Kay, and Saint Baldrick's Foundations. I currently review about 20 original manuscripts per year for leading clinical and epidemiology journals, including *British Medical Journal* and *American Journal of Epidemiology*.

TEACHING

FORMAL SCHEDULED CLASSES

Year	Course Title	Course R E	Hours	Number of Learners	Level
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2012, 2014, 2016, 2018, 2020, 2022	“Analysis, validity, and inference in observational epidemiology” University of Tampere, Finland		x	8 hrs/day 5 days	~25 per session	G
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CURRICULUM DEVELOPMENT

POSTGRADUATE AND OTHER COURSES

Years	Department	Responsibility
2016-2018	“Introduction to Clinical Research” Offered to UVM Medical Group physicians. Provides instruction in basic study design and analysis. Facilitates individual research projects using secondary data from the Jeffords Institute for Quality.	Course faculty; responsible for didactic lectures and mentoring/analytic support for student projects

PREDOCTORAL STUDENTS SUPERVISED OR MENTORED

Dates	Name	Program School	Role	Current Position
2012	Gitte Vrelits Sørensen, Medical student	Aarhus University	Research year advisor	Attending Physician
2015	Rose Leshner, Undergraduate	Honors College University of Vermont	Thesis advisor	Yoga Instructor
2016	Simon Ramsdal Sørensen, Medical student	Aarhus University	Research year advisor	Attending Physician
2019	Erin Froeter, Master’s student	University of Vermont	Capstone project mentor	Associate Scientist, Abbott Laboratories
2021	Weida Ma, Medical student	University of Vermont Larner College of Medicine	Summer Research Project Mentor	MS3
2022	Jennifer Chen, Medical student	University of Vermont Larner College of Medicine	Summer Research Project Mentor	MS2
2022	Elisabeth Solmunde, Medical student	Aarhus University, Denmark	Research Year Project Mentor	Medical Student
2023	Fanny Børne Asmussen	Aarhus University, Denmark	Research Year Project Mentor	Medical Student

DISSERTATION/THESIS COMMITTEE MEMBERSHIP

Dates	Name	Program School	Role	Current Position
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2016-2018	Anne Broe	Clinical Biochemistry and Pharmacology, University of Southern Denmark	Doctoral thesis committee member	Research Scientist, IQVIA
2016-2019	Zandra Nymand Ennis	Clinical Biochemistry and Pharmacology, University of Southern Denmark	Doctoral thesis committee member	Physician-Scientist, University of Southern Denmark
2017	E. Ross Colgate	Clinical and Translational Science, University of Vermont	Doctoral thesis committee member	Faculty Scientist, University of Vermont
2019-2020	Lindsay J. Collin	Epidemiology, Emory University	Doctoral thesis committee member	Post-doctoral fellow, Huntsman Cancer Institute
2020-	Sixten Harborg	Oncology, Aarhus University, Denmark	Doctoral thesis committee member	MD/PhD student
2020	Julia C. West	Psychology, University of Vermont	Master's thesis defense chairperson	Research Fellow, University of Vermont
2021-	Cathrine Fonnesbech Hjorth	Clinical Epidemiology, Aarhus University, Denmark	Doctoral thesis committee member	Doctoral student
2021-	Kirsten Woolpert	Clinical Epidemiology, Aarhus University, Denmark	Doctoral thesis committee member	Doctoral student

POSTDOCTORAL FELLOWS AND RESIDENTS DIRECTLY SUPERVISED OR MENTORED

Dates	Name	Fellow	Faculty Role	Current Position
2017-2018	Mayo Fujii	Resident Physician (Surgery)	Research Mentor	Resident Physician
2018-2019	Serena Murphy	Resident Physician (Surgery)	Research Mentor	Resident Physician
2018-2019	Robin Riley	Resident Physician (Surgery)	Research Mentor	Resident Physician
2020-2021	Tessa Cattermole	Resident Physician (Surgery)	Research Mentor	Resident Physician
2021-2022	Quinn Self	Resident Physician (Surgery)	Research Mentor	Resident Physician

INFORMAL TEACHING

Year	One Sentence Description of Information Teaching
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2016-present	Deliver a regular series of didactic lectures to resident physicians in surgery covering topics in biostatistics and epidemiology, focused on critical appraisal of clinical research and on topics relevant for the American Board of Surgery In-Training Examination (ABSITE).
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FACULTY MENTORED

Jeremy Dressler, MD, Assistant Professor of Surgery; Research mentor on frailty project.

OTHER VISITING FACULTY SUPERVISED - none

TEACHING AIDS –

During the 2019/2020 COVID-19 pandemic, I became adept at remote instruction technologies including the recording and editing of asynchronous lectures with Camtasia software, leading student discussions and recitation sessions *via* Zoom teleconference, and creating and delivering interactive computer modeling labs using a combination of R Notebooks and Jupyter Notebooks.

TEACHING AWARDS AND NOMINATIONS - none

SUMMARY OF TEACHING ACTIVITIES

Though teaching comprises a small portion of my total academic activity, I have made substantial contributions to student education through both formal classroom work and mentoring research projects of graduate students and physicians. I provide regular didactic lectures in epidemiology and statistics to general surgery residents at UVMMC, ensuring that they meet the clinical research competencies required by the Surgical Council on Resident Education. I am a co-instructor of “Introduction to Clinical Research”, an *ad hoc* course sponsored by the UVM Health Network Medical Group to train physicians in basic clinical research competencies and facilitate their use of electronic medical record data for establishing research portfolios. My contributions to this course involve delivery of lectures on epidemiologic and biostatistical methods and providing analytical support for student projects. I also teach internationally, offering a biennial one-week advanced seminar course on epidemiologic methods to international doctoral students at the University of Tampere School of Public Health in Finland. In May of 2020, I reconfigured this course for remote delivery due to the COVID-19 pandemic. Through that experience, I became proficient in screencasting and deploying lectures online, and developing interactive computer coding labs. Beyond the formal classroom, I have mentored research projects of 5 UVMMC resident physicians, 8 PhD students (5 international), 2 UVM Master’s students, 1 UVM undergraduate, and 4 Danish medical students. The effectiveness of my mentoring is apparent from the conference abstracts, peer-reviewed publications, academic degrees, and career trajectories attained by my mentees.

RESEARCH AND SCHOLARLY ACTIVITIES

RESEARCH AWARDS AND GRANTS

Ongoing Research Support

R01 CA282725 PI: Sprague, Brian L. 2023-2027
 Development of a risk prediction model for upgrade of high-risk benign breast lesions diagnosed on needle biopsy
 We will develop and validate new risk models for short and long-term breast cancer risk among women with high-risk lesions, which will inform clinical practice and national guidelines for identifying cases that require aggressive interventions while sparing others from unnecessary side effects.
 Role: Co-Investigator

Morningside Center for PI: McCullough, LE 2021-2023
 Innovative and Affordable
 Medicine Pilot Award
 Targeting patients with breast adipose tissue inflammation for statin therapy to prevent breast cancer recurrence.
 The goal of this project is to investigate whether crown-like structures in tumor-adjacent normal breast tissue can serve as a predictive biomarker of breast tumor response to adjuvant therapy with HMG-CoA-reductase inhibitors.
 Role: Co-Investigator

R01 LM013049 PI: Lash, TL 2019-2023
 Improving Reproducibility by Incorporating Uncertainty
 The goal of this project is to build a novel informatics platform to improve the reproducibility of epidemiologic studies in contentious topic areas with apparently heterogeneous evidence bases. We hypothesize that reproducibility and scientific consensus building will be enhanced by quantitative correction for systematic biases affecting individual studies, followed by meta-analysis incorporating prior information.
 Role: Co-Investigator

Completed Research Support

P20 GM103644 PI: Higgins/Kurti 2017-2020
 Vermont Center on Behavior and Health
 The goal of the Center is to investigate the relationships between personal behavior patterns (*e.g.*, substance abuse, sedentary lifestyle, medication non-adherence) and risk for chronic disease and premature death. The overarching focus is on developing and evaluating clinical interventions for these risk behaviors and examining biases in decision-making and other potential mechanisms underpinning vulnerability to unhealthy behavior patterns using a behavioral economic conceptual framework. Dr. Ahern was a Project Director in the Center and led a study of the impact of behavioral factors on mammographic breast density and cancer-associated microRNAs in a high-risk population.
 Role: Project Director

584644 PI: Ahern, TP 7/1/2018-6/30/2019

St. Baldrick's Foundation

Life-course phthalate exposure and pediatric cancer incidence

Research grant to support a Danish nationwide cohort study of *in utero* and early life phthalate exposure through pharmaceutical products in relation to incidence of pediatric malignancy.

R03 ES027933 PI: Ahern, TP 2017-2020

Predicting phthalate bio-burden through medication and dietary supplement exposure
The major goals of this project are (1) develop a model to predict phthalate bio-burden based on intake of prescription medications and dietary supplements; and (2) apply the model to multiply impute phthalate exposure in a large U.S. cohort study in order to measure the association between phthalate exposure and breast cancer risk.

R01 CA166825 PI: Lash, TL 2016-2018

New and integrated perspectives on modification of tamoxifen effectiveness

The major goals of this project are to elucidate the impact of genetic and pharmacological impairment of enzymes in the tamoxifen metabolic pathway on recurrence risk in premenopausal women with ER-positive breast cancer who are treated with tamoxifen.

Role: Co-Investigator

CCR13264024 PI: Ahern, TP 2014-2018

Susan G. Komen for the Cure

Breast cancer risk in chronic users of phthalate-containing medications
Career Catalyst Award to support salary and career development, centered on the conduct of a population-based pharmacoepidemiologic study of phthalate excipients and breast cancer risk.

(No number issued) PI: Ahern, TP 2014-2015

Lake Champlain Cancer Research Organization Pilot Grant

GATA3 Binding Profiles in Archival Breast Tumors: ChIP-Seq Method Refinement and Validity Assessment

Support development of chromatin immunoprecipitation/massively parallel sequencing (ChIP-Seq) protocol for use in formalin-fixed, paraffin-embedded archival breast tumors.

003-14 PI: Ahern, TP 2014-2015

Mary Kay Ash Charitable Foundation

Research grant to support an investigation of host and breast tumor biomarkers that may predict response to adjuvant therapy with simvastatin.

BC073012 PI: Ahern, TP 2008-2011

Congressionally Directed Medical Research Programs/Breast Cancer Research Program

Modification of tamoxifen effectiveness by gene polymorphisms, regulatory proteins, and other drugs

Training award to support full-time on dissertation studies and related research activities.

Pending Research Support

R01 CA286069 PI: Ahern, TP Submitted: 02/2023
 Impact score: 28
 Percentile: 11.0

Using gene expression to identify patients at high risk for late breast cancer recurrence.

This project aims to discover a primary tumor gene expression panel that will specifically predict risk of late distant recurrence among premenopausal breast cancer patients diagnosed with estrogen receptor-positive disease.

Currently pending council review; resubmission planned for February 2022.

R01 CA266648-A1 PI: Ahern, TP Submitted: 03/2023
 Impact score: 59
 Percentile: 54.0

Breast lymphedema: classification, etiology, and remediation in a racially and geographically diverse US cohort.

This project will develop a first-of-its-kind objective classification system for the assessment of breast lymphedema among women who undergo breast conservation surgery and radiotherapy. The measurement tool will be applied to the discovery of risk factors for incidence and progression of breast lymphedema, and to assess racial and geographic disparities in this increasingly prevalent and debilitating sequela of breast cancer treatment. Currently collecting additional pilot data and modifying study design in anticipation of February 2022 resubmission.

R01 CA273090 MPI: Ahern, TP;
 Wood ME; Lian JB Submitted: 10/2021
 Impact score: 43
 Percentile: 25.0

Refinement, validation, and clinical utility of a microRNA-based model for women at high risk for breast cancer.

This project will augment and validate a novel epigenetic model of breast cancer risk specifically tailored for the highly heterogeneous group of women classified as high-risk for future breast cancer based on existing clinical models.

R01 CA258871 Role: PI Submitted: 06/2020
 Impact score: 49
 Percentile: 47.0

Discovering molecular pathways of breast cancer response to statins: advancing the clinical utility of a novel adjuvant therapy

The goal of this application is to use Bayesian statistical learning methods to uncover the molecular pathways mediating the anti-recurrence effect of lipophilic statins on breast cancer.

Currently collecting additional pilot data; new application planned in 2022.

R01 CA261867 MPI: Ahern TP,
 Villanti AC, Wood ME Submitted: 10/2020
 Impact score: Not discussed

Impact of behavioral and genetic interventions to reduce second cancer risk in AYA cancer survivors

The goal of this application is to enroll a state-wide cohort of adolescent and young adult (AYA) cancer survivors and test two interventions for the prevention of second cancers in this population and eliminate rural/non-rural disparities in care: (1) a remotely-delivered genetic testing to identify mutations in cancer susceptibility genes and customize screening recommendations, and (2) a text message-based smoking cessation program.

Collecting additional pilot data *via* UVM Medical Center internal grant. Resubmission is planned for 2022.

SCHOLARSHIP

Peer Reviewed Publications

h-index: 28

Total citations: 2,919

Original Research

1. Bednar MM, Gross CE, Russell SR, Fuller SP, **Ahern TP**, Howard DB, Falck JR, Reddy KM, Balazy, M. 16(R)-hydroxyeicosatertraenoic acid, a novel cytochrome P450 product of arachnidonic acid, suppresses activation of human polymorphonuclear leukocyte and reduces intracranial pressure in a rabbit model of thromboembolic stroke. *Neurosurgery* 2000;47:1410-18;discussion 1418-9.
2. **Ahern TP**, Larsson H, Garne JP, Cronin-Fenton DP, Sorensen HT, Lash TL. Trends in breast-conserving surgery in Denmark, 1982-2002. *Eur J Epidemiol* 2008;23:109-14.
3. **Ahern TP**, Lash TL, Sorensen HT, Pedersen L. Digoxin treatment is associated with an increased incidence of breast cancer: a population-based case-control study. *Breast Cancer Res* 2008;10:R102. PMID: PMC2656898.
4. Lash TL, Pedersen L, Cronin-Fenton D, **Ahern TP**, Rosenberg CL, Lunetta KL, Silliman RA, Hamilton-Dutoit S, Garne JP, Ewertz M, Sørensen HT. Tamoxifen's protection against breast cancer recurrence is not reduced by concurrent use of the SSRI citalopram. *Br J Cancer* 2008;99:616-21. PMID: PMC2527838.
5. **Ahern TP**, Lash TL, Thwin SS, Silliman RA. Impact of acquired comorbidities on all-cause mortality rates among older breast cancer survivors. *Med Care* 2009;47:73-9. PMID: PMC2933563.
6. **Ahern TP**, Lash TL, Egan KM, Baron JA. Lifetime tobacco smoke exposure and breast cancer incidence. *Cancer Causes Control* 2009;20:1837-44.
7. **Ahern TP**, Bosco JLF, Silliman RA, et al. Potential misinterpretations caused by collapsing upper categories of comorbidity indices: an illustration from a cohort of older breast cancer survivors. *Clinical Epidemiology* 2009;1:93-100. PMID: PMC2943165.
8. **Ahern TP**, Pedersen L, Cronin-Fenton DP, Sorensen HT, Lash TL. No increase in cancer recurrence with concurrent use of tamoxifen and some CYP2D6-inhibiting medications. *Cancer Epidemiol Biomarkers Prev* 2009;18:2562-4. PMID: PMC2742564.
9. Lee JC, **Ahern TP**, Chaves FP, Quillen K. Utility of hematologic and volume, conductivity, and scatter parameters from umbilical cord blood in predicting chorioamnionitis. *Int J Lab Hematol* 2009;32:351-9.

10. Lash TL, Cronin-Fenton D, **Ahern TP**, Rosenberg CL, Lunetta KL, Silliman RA, Hamilton Dutoit S, Garne JP, Ewertz M, Sørensen HT, Pedersen L. Breast cancer recurrence risk related to concurrent use of SSRI antidepressants and tamoxifen. *Acta Oncol* 2010;49:305-12. PMID: PMC2892037.
11. **Ahern TP**, Christensen M, Cronin-Fenton DP, Lunetta KL, Rosenberg CL, Sørensen HT, Lash TL, Hamilton-Dutoit S. Concordance of metabolic enzyme genotypes assayed from paraffin-embedded, formalin-fixed breast tumors and normal lymphatic tissue. *Clinical Epidemiology* 2010;2:241-6. PMID: PMC2998813.
12. Lash TL, Cronin-Fenton DP, **Ahern TP**, et al. CYP2D6 inhibition and breast cancer recurrence in a Danish population-based study. *J Natl Cancer Inst* 2011;103:489-500. PMID: PMC3057982.
13. **Ahern TP**, Pedersen L, Tarp M, Cronin-Fenton DP, Garne JP, Silliman RA, Sørensen HT, Lash TL. Statin prescriptions and breast cancer recurrence risk: A Danish nationwide prospective cohort study. *J Natl Cancer Inst* 2011;103:1461-8. PMID: PMC3186780.
14. **Ahern TP**, Pedersen L, Svaerke C, Rothman KJ, Sørensen HT, Lash TL. The association between vitamin K antagonist therapy and site-specific cancer incidence, estimated by using heart valve replacement as an instrumental variable. *Am J Epidemiol* 2011;174:1382-90. PMID: PMC3276295.
15. **Ahern TP**, Christensen M, Cronin-Fenton DP, Lunetta KL, Søiland H, Gjerde J, Garne JP, Rosenberg CL, Silliman RA, Sørensen HT, Lash TL, Hamilton-Dutoit S. Functional polymorphisms in UDP-glucuronosyl transferases and recurrence in tamoxifen-treated breast cancer survivors. *Cancer Epidemiol Biomarkers Prev* 2011;20:1937-43. PMID: PMC3169710.
16. Cronin-Fenton DP, Hellberg Y, Lauridsen KL, **Ahern TP**, Garne JP, Rosenberg CL, Silliman RA, Sørensen HT, Lash TL, Hamilton-Dutoit S. Factors associated with concordant estrogen receptor expression at diagnosis and centralized re-assay in a Danish population-based breast cancer study. *Acta Oncologica*. 2012;51:254-61. PMID: PMC3264781.
17. Lash TL, **Ahern TP**. Bias Analysis to Guide New Data Collection. *Int J Biostat* 2012;8(2):4679. PMID: 22499734
18. Sørensen GV, Ganz PA, Cole SW, Pedersen L, Sørensen HT, Cronin-Fenton D, Garne JP, Christiansen P, Lash TL, **Ahern TP**. Use of beta blockers, ACE inhibitors, angiotensin II receptor blockers and risk of breast cancer recurrence: A Danish nationwide prospective cohort study. *J Clin Oncol*. 2013;31:2265-72. PMID: PMC3677839.
19. **Ahern TP**, Hankinson SE, Willett WC, Pollak MN, Eliassen AH, Tamimi RM. Plasma c-peptide, mammographic breast density, and risk of invasive breast cancer. *Cancer Epidemiol Biomarkers Prev*. 2013;22:1786-96. PMID: PMC3809910.
20. Cronin-Fenton DP, Christensen M, Lash TL, **Ahern TP**, Pedersen L, Garne JP, Ewertz M, Autrup H, Sørensen HT, Hamilton-Dutoit S. Manganese superoxide dismutase and breast cancer recurrence: A Danish clinical registry-based case-control study, and a meta-analysis. *PLoS ONE*. 2014;9:e87450. PMID: PMC3909115.
21. **Ahern TP**, Tamimi RM, Rosner BA, Hankinson SE. Digoxin use and risk of invasive breast cancer: evidence from the Nurses' Health Study and meta-analysis. *Breast Cancer Res Treat*. 2014;144(2):427-35. PMID: PMC4010120.
22. Lietzen LW, **Ahern TP**, Christiansen PM, Jensen AB, Sørensen HT, Lash TL,

- Cronin-Fenton DP. Glucocorticoid prescriptions and breast cancer recurrence: A Danish nationwide prospective cohort study. *Ann Oncol.* 2014;25(12):2419-25. PMID: PMC4239807.
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72. Collin LJ, Maliniak ML, Cronin-Fenton DP, **Ahern TP**, Christensen KB, Ulrichsen SP, Damkier P, Hamilton-Dutoit S, Yacoub R, Christiansen PM, Sørensen HT, Lash TL. Hypoxia-inducible factor-1 α expression and breast cancer recurrence in a Danish population-based case control study. *Breast Cancer Res*. 2021;23(1):103. PMID: 34736510.

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79. Amato S, Ramsey J, **Ahern TP**, Rovnak J, Barlow J, Weaver D, Eyasu L, Singh R, Cintolo-Gonzalez J. Exploring the presence of bovine leukemia virus among breast cancer tumors in a rural state. *Breast Cancer Res Treat.* 2023;202(2):325-334. PMID: 37517027.
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81. Woolpert KM, **Ahern TP**, Lash TL, O'Malley DL, Stokes AM, Cronin-Fenton DP. Biomarkers predictive of a response to extended endocrine therapy in breast cancer: a systematic review and meta-analysis. *Breast Cancer Res Treat.* 2024;203(3):407-17. PMID: 37878151.
82. Sprague BL, Nowak SA, **Ahern TP**, Herschorn SD, Kaufman PA, Odde C, Perry H, Sowden MM, Vacek PM, Weaver DL. Long-term Mammography Screening Trends and Predictors of Return to Screening after the COVID-19 Pandemic: Results from a Statewide Registry. *Radiol Imaging Cancer.* 2024;6(3):e230161. PMID: 38578209
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84. Perrapato SD, Farina NH, Berg AN, Wallace HJ, Ades S, **Ahern TP**, Stein JL, Stein GS, Lian JB. A MicroRNA Approach to Evaluating Elevated Prostate Cancer Risk in Cancer-Free Men. *Critical Rev Eukaryotic Gene Expression.* 2024;34(6):61-9.

85. Ma W, Lash TL, MacLehose RM, Tuo Y, **Ahern TP**. Non-differential misclassification of outcomes with near-perfect specificity: a simulation study. *Am J Epidemiol*. 2024 [In press.]

In Review

- Handful, if not several

In Preparation

- Several

Review Articles

1. **Ahern TP**, Lash TL, Damkier P, Christiansen PM, Cronin-Fenton DP. Statins and breast cancer prognosis: evidence and opportunities. *Lancet Oncol*. 2014;15:e461-8. PMID: PMC4167822.
2. Borgquist S, Bjarnadottir O, Kimbung S, **Ahern TP**. Statins: a role in breast cancer therapy? *J Intern Med*. 2018;284(4):346-57. PMID: 29923256

Books and Chapters

1. **Ahern TP**. Pharmacoevidence in Pharmacogenetics. In: *Advances in Pharmacology*, volume 83. Damkier P and Brøsen K (eds.)

Non-Peer Reviewed Publications

Letters

1. Lash TL, **Ahern TP**, Cronin-Fenton D, Garne JP, Hamilton-Dutoit S, Sørensen HT. Comment on 'Impact of CYP2D6*10 on recurrence-free survival in breast cancer patients receiving adjuvant tamoxifen therapy'. *Cancer Sci* 2008;99:1706-7.
2. Lash TL, **Ahern TP**, Cronin-Fenton D. Modification of tamoxifen response: what have we learned? *J Clin Oncol* 2008;26:1764-5; author reply 1765-6.
3. **Ahern TP**, Hankinson SE. Re: Use of Archived Specimens in Evaluation of Prognostic and Predictive Biomarkers. *J Natl Cancer Inst* 2011;103:1558-9.
4. Sørensen GV, Cronin-Fenton DP, Sørensen HT, Damkier P, Ejlersen B, Christiansen PM, Lash TL, **Ahern TP**. Re: Beta blockers and improved progression-free survival in patients with advanced HER2 negative breast cancer. *Epidemiology*. 2018 [Epub ahead of print] PMID: 29771735
5. **Ahern TP**, Borgquist S, Cronin-Fenton DP. Re: Association of statin use with overall and cancer survival. *JAMA Oncol*. 2018;4(7):1015-16 PMID: 29800042
6. Lash TL, **Ahern TP**, Collin LJ, Fox MP, MacLehose RF. Lash et al. Respond to "Better Bias Analysis" and "Toward Better Bias Analysis." *Am J Epidemiol* 2021;190(8):1622-1624. PMID: 33778843
7. Harborg S, **Ahern TP**, Borgquist S. Letter to the editor regarding: "The relationship between post-diagnostic statin usage and breast cancer prognosis varies by hormone receptor phenotype: a systematic review and meta-analysis." *Arch Gynecol Obstet*. 2022;306(2):567-568 PMID: 34694433.

Thesis

1. Ahern TP. Estimating the Impact of Molecular Profiles and Prescription Drugs on Breast Cancer Outcomes [dissertation]. Boston (MA): Boston University; 2010.

Abstracts

All research abstracts have been published as peer-reviewed papers and appear in the listing above.

Patents Issued or Pending - none

Other Creative Activities - none

Quality Improvement and Patient Safety Activities - none

SUMMARY OF SCHOLARLY ACTIVITIES

My research is focused on identifying novel risk factors for breast cancer incidence and survival, with a particular focus on secondary effects of prescription drugs, the impact of host and tumor molecular profiles, and the interaction between these factors. By conducting large, high-validity studies with my extensive network of international, multidisciplinary collaborators, this work informs public health and clinical actions that can improve breast cancer prevention while also maximizing survival for women who are diagnosed. My success in this endeavor is evinced by my track record of publishing research in high-impact, peer-reviewed clinical and epidemiologic journals and successfully competing for grant funding from both governmental agencies (Department of Defense, NIH R-series) and private foundations (Susan G. Komen, Mary Kay, and St. Baldrick's Foundation).

INVITED PRESENTATIONS**Regional**

<u>Years</u>	<u>Host Organization</u>	<u>City, State</u>
2008	Boston University School of Public Health, Research in Progress Seminar; Department of Epidemiology. "Cardiac Glycosides and Breast Cancer."	Boston, MA
2011	Channing Laboratory, Brigham and Women's Hospital and Harvard Medical School. "Associations of Plasma Insulin and C-peptide Levels with Mammographic Breast Density and Breast Cancer Risk"	Boston, MA
2011	Harvard School of Public Health Department of Epidemiology, Cancer Epidemiology Fellows' Meeting. "Statin Use and Breast Cancer Recurrence: A Danish Nationwide Prospective Cohort Study."	Boston, MA
2011	Dana-Farber/Harvard Cancer Center Programs in Breast and Gynecologic Cancer, Joint Symposium. "Estimating the Association between Vitamin K Antagonist Therapy and Site-Specific Cancer Incidence Using Heart Valve Replacement as an Instrumental Variable."	Boston, MA
2012	Channing Laboratory, Brigham and Women's Hospital and Harvard Medical School,	Boston, MA

	Molecular Pathology Working Group Seminar. “Quantitative Measurement of Breast Tumor Biomarkers in the Nurses’ Health Study.”	
2013	University of Vermont College of Medicine Department of Pharmacology Seminar. “Pharmacoepidemiology studies using the Danish national health registries: examples and opportunities.”	Burlington, VT
2014	University of Vermont, Vermont Cancer Center, Cancer Control and Population Health Sciences Program Meeting. “Validation linked with probabilistic bias analysis in a study of anticoagulants and cancer incidence.”	Burlington, VT
2014	Vermont Breast Cancer Conference (Keynote Address). “Looking for Avoidable Causes of Breast Cancer: No Trivial Pursuit!”	Burlington, VT
2014	Vermont Breast Cancer Conference. “Phthalates are Everywhere—But Do They Cause Breast Cancer?”	Burlington, VT
2016	University of Vermont Larner College of Medicine Department of Biochemistry, Cancer Research and Technology Seminar. “Molecular Mechanisms of Tamoxifen Resistance.”	Burlington, VT
2019	Dartmouth College, Geisel School of Medicine, Department of Epidemiology. “Phthalates and breast cancer risk: evidence from a Danish prospective cohort study.”	Lebanon, NH
2022	University of Vermont Cancer Center, Cancer Control and Population Health Sciences Program. “Using gene expression to identify women at high risk for late breast cancer recurrence.”	Burlington, VT
2023	University of Vermont Medical Center Hematology/Oncology Grand Rounds. “Late-recurring breast cancer: epidemiology and risk prediction.”	Burlington, VT
2023	University of Vermont HSCI 202 (Guest Lecture) “Cancer Epidemiology”	Burlington, VT
National		
<u>Years</u>	<u>Host Organization</u>	<u>City, State</u>
2011	American Association for Cancer Research; Annual Meeting, “Post-diagnosis use of lipophilic statins and breast cancer recurrence: A Danish nationwide cohort study.” Poster presentation.	Orlando, FL
2011	Congressionally Directed Medical Research Programs; Era of Hope Meeting, “Functional polymorphisms in UDP-glucuronosyl	Orlando, FL

	transferases and recurrence in tamoxifen-treated breast cancer survivors." Poster presentation.	
2011	American Association for Cancer Research; Frontiers in Cancer Prevention Research, "C-peptide, mammographic density, and risk of invasive breast cancer." Poster presentation.	Boston, MA
2014	American Association for Cancer Research; Frontiers in Cancer Prevention Research, "Digoxin use and risk of invasive breast cancer: evidence from the Nurses' Health Study." Poster presentation.	National Harbor, MD
2014	Society for Epidemiologic Research; Annual Meeting, "Breast tumor Pak1 expression, adjuvant tamoxifen therapy, and recurrence risk: a Danish population-based study." Poster presentation.	Seattle, WA
2014	Society for Epidemiologic Research; Annual Meeting, "Vitamin K antagonist drugs and cancer risk: validation of heart valve replacement as a drug exposure proxy." Invited talk.	Seattle, WA
2015	Departmental Research Seminar; Department of Epidemiology and Biostatistics, University of Massachusetts, "How to Do Environmental Epidemiology If You Are Locked in a Pharmacy: Drugs, Phthalates, and Breast Cancer Risk." Invited talk.	Amherst, MA
2015	Northeastern Breast Cancer Research Conference, Norris Cotton Cancer Center, Dartmouth University, "Breast Cancer Pharmacoepidemiology in the Danish National Cohort." Invited talk.	Lebanon, NH
2015	San Antonio Breast Cancer Symposium, "Statins and breast cancer risk in the Nurses' Health Study." Platform and poster discussion.	San Antonio, TX
2015	San Antonio Breast Cancer Symposium, "CYP2D6 genotype and breast cancer recurrence in tamoxifen treated patients: an evaluation of the importance of loss-of-heterozygosity." Poster presentation.	San Antonio, TX
2016	Society for Epidemiologic Research, Annual Meeting, "Continuous measurement of breast tumor hormone receptor expression: a comparison of two computational pathology platforms." Poster presentation.	Miami, FL
2017	Society for Epidemiologic Research, Annual Meeting, "Drug interactions with tamoxifen in a Danish premenopausal breast cancer cohort." Invited talk.	Seattle, WA

2018	Society for Epidemiologic Research, Annual Meeting, "Bayesian meta-analysis and visual examination of assumptions via an online app." Invited talk.	Baltimore, MD
2018	Society for Epidemiologic Research, Annual Meeting, "Breast cancer risk in chronic users of phthalate-containing medications: A Danish nationwide cohort study." Poster presentation.	Baltimore, MD
2018	Emory University/Winship Cancer Institute Cancer Control and Population Health Sciences Grand Rounds. "Breast cancer risk in users of phthalate-containing medications: A Danish nationwide cohort study." Invited talk.	Atlanta, GA
2019	Society for Epidemiologic Research, Annual Meeting. "Impact of State Policy on Opioid Prescribing After Common Surgical Procedures." Invited talk.	Minneapolis, MN
2019	Society for Epidemiologic Research, Annual Meeting. "Prediction of Urinary Phthalate Metabolite Concentrations with Medication and Dietary Supplement Exposures." Poster presentation	Minneapolis, MN
2019	Morningside Center for Innovative and Affordable Medicine at Emory University, Innovating with Existing Drugs and Nutraceuticals Conference. "Statins and breast cancer survival: evidence and opportunities" Invited talk.	Atlanta, GA
2023	Society for Epidemiologic Research, Annual Meeting. "Adjusting Adjustments: Using External Data to Simulate the Impact of Different Confounder Sets on Published Associations." Invited talk.	Portland, OR

International

<u>Years</u>	<u>Host Organization</u>	<u>City, Country</u>
2010	Aarhus University Hospital Department of Clinical Epidemiology, "The potential role of p21-activated kinase 1 in tamoxifen resistance.	Aarhus, Denmark
2013	University of South Denmark Department of Clinical Biochemistry and Pharmacology, "Breast cancer risk in chronic users of phthalate-containing medications."	Odense, Denmark
2014	SOLA Investigators' Meeting, "Predictive biomarkers of simvastatin effectiveness in the breast cancer adjuvant setting." Invited talk.	Stavanger, Norway
2017	Lund University, "Statins and breast cancer: current evidence and potential pathways." Invited talk.	Lund, Sweden

2017	International Conference on Pharmacoepidemiology and Therapeutic Risk Management, "Drug interactions with tamoxifen in a Danish premenopausal breast cancer cohort." Spotlight poster presentation.	Montréal, Canada
2018	International Conference on Pharmacoepidemiology and Therapeutic Risk Management, "Breast cancer risk in chronic users of phthalate-containing medications: a Danish nationwide cohort study." Invited talk.	Prague, Czech Republic
2018	International Conference on Pharmacoepidemiology and Therapeutic Risk Management, "Use of antipsychotics and risk of breast cancer." Spotlight poster presentation.	Prague, Czech Republic
2019	McGill University, Department of Epidemiology, Biostatistics, and Occupational Health. "Phthalate exposure and breast cancer incidence: a Danish nationwide cohort study."	Montréal, Québec, Canada
2019	Danish Society for Pharmacoepidemiology. "Phthalates and breast cancer risk: evidence from a Danish prospective cohort study." Invited talk.	Odense, Denmark