

— DARCI M. FINK —

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EDUCATION

- Ph.D.** **University of Nebraska Medical Center**—Omaha, NE.
Eppley Institute for Research in Cancer, Fred and Pamela Buffett Cancer Center
Cancer Research Graduate Program
Major Advisor: Michael A. Hollingsworth, Ph.D.
Dissertation Title: ***Inflammation- and Cancer-Associated Neurolymphatic Remodeling and Cachexia in Pancreatic Ductal Adenocarcinoma***
Supervisory Committee Members:
Vimla Band, Ph.D., Robert Lewis, Ph.D., Richard MacDonald, Ph.D., Angie Rizzino, Ph.D.
August 2010 - May 2016
- B.S., B.A.** **South Dakota State University**—Brookings, SD.
Summa cum laude B.S.—Major: Microbiology (Molecular Biology specialization)
Minors: Chemistry, Biology, Biotechnology
Summa cum laude B.A.—Major: German
Minor: Spanish
August 2006 - May 2010
- Study Abroad** **Justus-Liebig Universität**—Gießen, Germany.
International Student Exchange Program—Completed microbiology coursework as well as German language, literature, and history courses (all courses taught in German)
March - July 2009

BIOLOGICAL RESEARCH EXPERIENCE

- Graduate Research Fellow**—University of Nebraska Medical Center—Omaha, NE.
Mentor: Michael A. Hollingsworth, Ph.D.
Extensive collaboration with Richard M. Tempero, M.D., Ph.D., Boys Town National Research Hospital—Omaha
Selected Projects:
- Intravital live imaging microscopy of tumor-lymphatic interactions and lymphatic vessel remodeling
 - Discovery of a novel role for nerve growth factor in lymphangiogenesis
 - Corneal neurolymphatic remodeling in inflammation and wound healing
 - Mucin-1 cytoplasmic tail peptide vaccine + poly(I:C₁₂U) adjuvant for treatment of pancreatic cancer
 - Intracellular localization studies of Mucin-1 cytoplasmic tail and interacting partners
 - Small molecule inhibition of Cyclin dependent kinase 5 for pancreatic cancer treatment
 - Volunteer participant in unique pancreatic cancer rapid autopsy tissue collection program
- August 2010 - May 2016

Biological Research Aide—USDA Agricultural Research Service, North Central Agricultural Research Laboratory—Brookings, SD.

Mentors: R. Michael Lehman, Ph.D., Amy Christie, M.S., Dave Schneider, B.S.

Selected Projects:

- Ratio of fungi to bacteria as an indicator of change in soil quality
- Greenhouse gas release in crop rotation plots
- Soybean aphid and corn rootworm resistance

March 2008 - July 2010

Undergraduate Research Assistant—Department of Biology and Microbiology, South Dakota State University.

Mentors: Donald Auger, Ph.D., Yusheng Wu, Ph.D.

Project: Genetic analysis of heritability of amylose content in maize
2007 - 2008

PUBLICATIONS

The lymphatic system and pancreatic cancer

Darci M. Fink, Maria M. Steele, and Michael A. Hollingsworth. *Cancer Lett.* 2015 Dec 29. pii: S0304-3835(15)00745-4. doi: 10.1016/j.canlet.2015.11.048. [Epub ahead of print].

NGF regulates neurolymphatic remodeling during corneal inflammation and resolution

Darci M. Fink, Alicia L. Connor, Philip M. Kelley, Maria M. Steele, Michael A. Hollingsworth, and Richard M. Tempero. *PLoS One.* 2014 Nov 10;9(11):e112737. doi: 10.1371/journal.pone.0112737. eCollection 2014.

Soil microbial community response to corn stover harvesting under rain-fed, no-till conditions at multiple US locations

R. Michael Lehman, Thomas F. Ducey, Virginia L. Jin, Veronica Acosta-Martinez, Carla M. Ahlschwede, Elizabeth S. Jeske, Rhae A. Drijber, Keri B. Cantrell, James R. Frederick, **Darci M. Borkowski***, Shannon L. Osborne, Jeff M. Novak, Jane M. F. Johnson, and Gary E. Varvel. *Bioenergy Research* (2014) 7:540-550.

**Name prior to marriage*

PUBLICATIONS—IN PREPARATION

Distinct neurolymphatic architecture signatures in nonmalignant inflammatory and tumor microenvironments

Darci M. Fink, Alicia L. Connor, Philip M. Kelley, Michael A. Hollingsworth, and Richard M. Tempero

Skeletal muscle gene expression analysis in pancreatic ductal adenocarcinoma patients stratified by clinical severity of cachexia and CT lumbar skeletal muscle index

Darci M. Fink, Paul Grandgenett, Jennifer Oliveto, Paul Oberstein, and Michael A. Hollingsworth

E2 ubiquitin conjugating activity of the C-terminus of MUC1 regulates transcription to accelerate pancreatic cancer progression

Roger B. Brown, Ryan Hanson, James Grunkemeyer, **Darci M. Fink**, Xiang Liu, Hyoung-Joo Lee, Prakash Radhakrishnan, Ashley Mohr, Paul Grandgenett, Ronald Cerny, Daniel Liebler, and Michael A. Hollingsworth

FELLOWSHIPS, SCHOLARSHIPS, AWARDS, AND ACADEMIC ACHIEVEMENTS

Graduate

Fellowships

University of Nebraska Medical Center Graduate Studies Office Assistantship/Fellowship 2014 - 2015

University of Nebraska Medical Center Graduate Studies Office Assistantship/Fellowship 2013 - 2014

UNMC National Cancer Institute Cancer Biology Training Program Training Grant Fellowship 2012 - 2013

Other Funding and Awards

Nominated by departmental faculty for Thomas Jefferson Ingenuity Award for outstanding creativity in graduate research 2016

NIH Travel Award to Tumor Microenvironment Network Junior Investigators Meeting, Los Angeles, CA 2015

NIH Travel Award to Tumor Microenvironment Network Junior Investigators Meeting, Bethesda, MD 2014

Cancer Research Graduate Program Scientific Meeting Travel Award for Leadership Service 2012 - 2013

Recipient of six "ThankU" awards from UNMC colleagues in recognition of special help or service 2013 - 2015

Biomedical Research Training Program First Year Stipend 2010 - 2011

Undergraduate

Scholarships

Allianz South Dakota Scholarship

Dr. Fuchs Honors Scholarship

Fred and Marie Christopherson Memorial Scholarship

Herbert H. Hodgeson Memorial Scholarship

Hilda Hasslinger Memorial Endowment in Modern Languages

Huron High School German Club Scholarship

Joe Foss: An American Hero Scholarship

Lohr Foundation Scholarship

Residential Life Room Waiver Scholarship

Rich Reimer Scholarship

Robert C. Byrd Scholarship

SDSU Biology Alumni Scholarship

SDSU Jackrabbit Guarantee

SDSU Microbiology Alumni Scholarship

SDSU Yellow and Blue Scholarship

South Dakota Opportunity Scholarship

Tom Steele Memorial Scholarship

Significant Academic Achievements

University of Nebraska Medical Center GPA 3.934

South Dakota State University institutional GPA 3.979 (including study abroad transfer credits 3.943)

Named to South Dakota State University Dean's List every semester

Justus-Liebig Universität GPA 3.6 (all courses taught in German)

Proficiency in German and Spanish languages

LEADERSHIP AND PROFESSIONAL ACTIVITIES

Graduate Level Leadership Positions

UNMC International Student Ambassador 2013

Cancer Research Graduate Program Student Representative (elected by the students) 2012 - 2013

Student-Invited Speaker Committee Member 2012 - 2013

Supervisor and mentor for two rotating graduate students 2012 - 2013

Academic tutor for first-year graduate students in “Macromolecular Structure and Function” and “The Cell and Gene Regulation” courses 2011 - 2012

Certificate Courses Completed

UNMC Responsible Conduct of Research

UNMC Technology Transfer Introduction to Research Commercialization Course

Currently enrolled in Mayo Clinic, Rochester, MN, online course “Fundamentals of Clinical and Translational Science”

Other Leadership and Professional Activities

American Association for Cancer Research, Member

American Society for Microbiology, Member

South Dakota State University German Club, Former President

Delta Phi Alpha German National Honor Society, Former Vice President

South Dakota State Microbiology Club, Former Member

Alpha Zeta Agricultural Honor Society, Former Member

COMMUNITY OUTREACH AND SERVICE

Community Outreach Presentations

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| 2015 | Omaha Ambassador of Hope Gala —Omaha, NE.
<i>Visualizing cancer metastasis through lymphatic vessels</i> |
| 2013, 2014, 2015 | University of Nebraska Omaha Aim for the Stars High School Biochemistry Camp —Omaha, NE.
<i>Melanoma, breast cancer, and genetics presentations and DNA isolation labs</i> |
| 2012 | Omaha Ambassador of Hope Gala —Omaha, NE.
<i>Using experimental models to understand tumor-nerve interactions in pancreatic cancer</i> |
| 2012 | Cattlemen’s Ball of Nebraska: Sending Cancer up a Creek without a Paddle —McCool Junction, NE.
<i>Throwing pancreatic cancer overboard</i> |
| 2012 | Glenwood Middle School —Glenwood, IA.
<i>Cancer information and screening presentation and DNA isolation labs</i> |

Other Service Activities

- Hurricane Katrina and three-time Midwest tornado disaster relief volunteer
- Co-organizer of UNMC Eppley departmental Christmas Adopt-a-Family donation program
- UNMC Ronald McDonald House meal service volunteer for patient families
- Volunteer violinist in Orchestra Omaha

GRADUATE RESEARCH PRESENTATIONS

- 2015 **6th Annual National Cancer Institute Tumor Microenvironment Network Junior Investigators Meeting**—Saban Research Institute, Children’s Hospital Los Angeles, Los Angeles, CA.
Neurolymphatic remodeling during inflammation and wound recovery: Insights for tumor metastasis
Darci M. Fink, Alicia L. Connor, Philip M. Kelley, Richard M. Tempero, and Michael A. Hollingsworth
- 2015 **American Association for Cancer Research Annual Meeting 2015**—Philadelphia, PA.
Inflamed and wound recovered tumor microenvironment contributions to lymphatic-mediated metastasis
Darci M. Fink, Alicia L. Connor, Philip M. Kelley, Richard M. Tempero, and Michael A. Hollingsworth
- 2015 **Tumor Microenvironment Network U54 External Review Meeting 2015**—University of Nebraska Medical Center, Omaha, NE.
Visualizing tumor-lymphatic interactions, intravasation, and trafficking in vivo
Darci M. Fink, Alicia L. Connor, Philip M. Kelley, Richard M. Tempero, and Michael A. Hollingsworth
- 2014 **5th Annual National Cancer Institute Tumor Microenvironment Network Junior Investigators Meeting**—National Institutes of Health, Bethesda, MD.
Neurolymphatic remodeling and tumor metastasis in inflammation and wound recovery
Darci M. Fink, Alicia L. Connor, Philip M. Kelley, Richard M. Tempero, and Michael A. Hollingsworth
- 2014 **American Association for Cancer Research Annual Meeting 2014**—San Diego, CA.
Metastatic tumor migration in lymphatic vessels revealed by real-time intravital imaging
Darci M. Fink, Alicia L. Connor, Philip M. Kelley, Richard M. Tempero, and Michael A. Hollingsworth
- 2012 **Pancreas SPORE Retreat**—University of Nebraska Medical Center, Omaha, NE.
Targeting CDK5 for treatment of pancreatic cancer
Darci M. Fink, John P. Eggers, and Michael A. Hollingsworth
- 2012 **American Association for Cancer Research Annual Meeting 2012**—Chicago, IL.
A dual immunostimulatory strategy for pancreatic cancer treatment: MUC1 cytoplasmic tail peptide therapeutic vaccine with adjuvant TLR3 agonist poly(I:C₁₂U)
Darci M. Fink, Jarrod Tremayne, Stephanie K. Bunt, and Michael A. Hollingsworth
- 2012 **Midwest Student Biomedical Research Forum**—Creighton University, Omaha, NE.
Therapeutic vaccine for pancreatic cancer treatment: Dual immunostimulation with MUC1-CT peptide and adjuvant rintatolimod
Darci M. Fink, Jarrod Tremayne, Stephanie K. Bunt, and Michael A. Hollingsworth

- 2011 **Mucins in Health and Disease 11th International Workshop on Carcinoma-Associated Mucins**—Robinson College, University of Cambridge, Cambridge, UK.
Concomitant vaccination with MUC1 cytoplasmic tail peptide and adjuvant TLR3 agonist Ampligen [poly(I:C₁₂U)] for treatment of pancreatic cancer
Darci M. Fink, Jarrod Tremayne, and Michael A. Hollingsworth
- 2010 **Pancreas SPORE Retreat**—Omaha, NE.
MUC1 localization at dsDNA breaks following gemcitabine treatment
Roger B. Brown, Darci M. Fink, and Michael A. Hollingsworth

UNDERGRADUATE RESEARCH PRESENTATIONS

- 2009 **American Society for Microbiology Regional Meeting**—University of Wisconsin-LaCrosse, LaCrosse, WI.
Ratio fungi:bacteria as an indicator of change in soil quality
Darci M. Borkowski*, R. Michael Lehman, and Shannon Osbourne
*Name prior to marriage

RESEARCH SEMINAR PRESENTATIONS—UNIVERSITY OF NEBRASKA MEDICAL CENTER

- 2016 **Cancer Research Graduate Program Dissertation Defense**
Inflammation- and cancer-associated neurolymphatic remodeling and cachexia in pancreatic ductal adenocarcinoma
- 2015 **Cancer Research Graduate Program Student Seminar Series**
Nerve growth factor, inflammation and resolution: Implications for tumor biology
- 2014 **Cancer Research Graduate Program Student Seminar Series**
Neuroremodeling and lymphatic-nerve crosstalk in the cornea
- 2013 **Cancer Research Graduate Program Student Seminar Series**
Modeling inflammatory neurovascular remodeling and metastasis in the mouse cornea and pinna
- 2012 **Cancer Research Graduate Program Student Seminar Series**
CDK5 and perineural invasion in pancreatic cancer

GRANTS SUBMITTED

- 2016 *Tunable fluorescent organic nanoparticles for cancer imaging applications*—R21 with Aaron Mohs, Ph.D., Denis Svechkarev, Ph.D., Maria M. Steele, and Michael A. Hollingsworth, Ph.D.

IACUC PROTOCOLS

- 2013 *Lymphatic vessel and nerve remodeling in mouse models of inflammation and cancer*—with Michael A. Hollingsworth, Ph.D. and James A. Grunkemeyer, Ph.D.