

Education

- 2016 – present Internal Medicine Resident, ABIM Research Pathway, University of Wisconsin, Madison
- 2008 – 2016 University of Chicago Medical Scientist Training Program
Ph.D. in Cancer Biology, March 2014; Advisor: Kay Macleod, PhD.
Dissertation committee: Ernst Lengyel, MD, PhD (Chair), Geoffrey Greene, PhD, and Suzanne Conzen, MD.
M.D., June 2016
- 2002 – 2006 University of California Berkeley.
B.A. in Molecular and Cellular Biology, with Honors.
B.A. in German, with Highest Honors.
Highest distinction in general scholarship (summa cum laude).

Honors and Awards

- 2016 Leon O. Jacobsen Basic Science Prize for most meritorious basic science research, Pritzker School of Medicine Senior Scientific Session
- 2014 American Association of Cancer Research (AACR) Scholar-in-Training Award (awarded to <10% of trainee presenters at AACR annual meeting).
- 2014 Dissertation Award, University of Chicago Committee on Cancer Biology. (awarded to one dissertation per year).
- 2012 – 2013 Elaine Ehrman Scholarship, University of Chicago Cancer Center Research Foundation.
- 2007 Spencer W. Brown Award for distinction in undergraduate genetics research, Department of Molecular and Cellular Biology, UC Berkeley.

Research Experience

- 2010 – 2014 Doctoral Research: University of Chicago, Committee on Cancer Biology. Advisor: Kay Macleod, PhD.
- Identified a direct role for autophagy in tumor cell migration *in vitro* and metastasis *in vivo* in a mouse model of metastatic breast cancer
- 2006 – 2008 Staff Research Associate: University of California, Berkeley, Department of Plant and Molecular Biology.
Principal Investigator: Krishna Niyogi, PhD.
- Characterized novel genes required for chlorophyll biosynthesis in the photosynthetic model organism *Chlamydomonas reinhardtii*.
- 2005 – 2006 Undergraduate Honors Thesis Research: University of California, Berkeley, Department of Plant and Molecular Biology.
Advisors: Krishna Niyogi, PhD, Sharon Amacher, PhD.

- Characterized novel genes required for carotenoid pigment biosynthesis in *Chlamydomonas reinhardtii*

Publications

Mowers EE, **Sharifi MN**, Macleod KF. Functions of autophagy in the tumor microenvironment and cancer metastasis. FEBS J. 2018 Jan 21. doi:10.1111/febs.14388. [Epub ahead of print]. PMID: 29356327

Mowers EE, **Sharifi MN**, Macleod KF. Autophagy in cancer metastasis. Oncogene. 2017 Mar 23;36(12):1619-1630. PMID: 27593926

Sharifi MN, Mowers EE, Macleod KF. Autophagic degradation of focal adhesions underlies metastatic cancer dissemination. Molecular and Cellular Oncology. 2016 Jun 10;4(2):e1198299. PMID: 28401177

Mowers EE, **Sharifi MN**, Macleod KF. Novel insights into how autophagy regulates tumor cell motility. Autophagy. 2016 Sep;12(9):1679-80. PMID: 27439889.

Sharifi MN, Mowers EE, Collier CD, Drake LE, Chen H, Zamora M, Chen H, Mui S, Macleod KF. Autophagy promotes focal adhesion disassembly and cell motility of metastatic tumor cells through the direct interaction of paxillin with LC3. Cell Reports. 2016 May 24;15(8):1660-72. PMID: 27184837

Brzezowski P, **Sharifi MN**, Dent RM, Morhard MK, Niyogi KK, Grimm B. Mg chelatase in chlorophyll synthesis and retrograde signaling in *Chlamydomonas reinhardtii*: CHL12 cannot substitute for CHL11. J Exp Bot. 2016 Jun;67(13):3925-38. PMID: 26809558.

Chourasia AH, Tracy K, Frankenberger C, Boland ML, **Sharifi MN**, Drake LE, Sachleben JR, Asara JM, Locasale JW, Karczmar GS, Macleod KF. Mitophagy defects arising from BNip3 loss promote mammary tumor progression to metastasis. EMBO Reports. 2015 Sep;16(9):1145-63. PMID: 26232272

Sharifi MN, Mowers EE, Drake LE, Macleod KF. Measuring autophagy in stressed cells. Methods Mol Biol. 2015;1292:129-50. PMID: 25804753.

Dent RM, **Sharifi MN**, Malnoë A, Haglund C, Calderon RH, Wakao S, Niyogi KK. Large-scale insertional mutagenesis of *Chlamydomonas* supports phylogenomic functional prediction of photosynthetic genes and analysis of classical acetate-requiring mutants. Plant J. 2015 Apr;82(2):337-351. PMID: 25711437

Kuo W, **Sharifi MN**, Lingen M, Karrison T, Nagilla M, Macleod KF, and Cohen E. p62/SQSTM1 Accumulation in Squamous Cell Carcinoma Of Head And Neck Predicts Sensitivity to Phosphatidylinositol 3-Kinase Pathway Inhibitors. PLoS One. 2014 Mar 5;9(3):e90171. PMID: 24599075

Tran PT, **Sharifi MN**, Poddar S, Dent RM, and Niyogi KK. Intragenic enhancers and suppressors of phytoene desaturase mutations in *Chlamydomonas reinhardtii*. PLoS One. 2012;7(8):e42196. PMID: 22912689

Oral Presentations

Sharifi MN, Mowers EE, Collier CD, Drake LE, Chen H, Zamora M, Chen H, Mui S, Macleod KF. Autophagy promotes focal adhesion disassembly and cell motility of metastatic tumor cells through the direct interaction of paxillin with LC3. Pritzker School of Medicine Senior Scientific Session, Chicago, IL. May 2016.

Sharifi MN, Collier C, Drake L, Chen H, Zamora M, Mui S, and Macleod KF. Autophagy is required for focal adhesion turnover, tumor cell motility, and metastasis. Cancer Biology Training Consortium Annual Meeting, Wilmington, NC. October 2013.

Poster Presentations

Sharifi MN, Collier C, Drake L, Chen H, Zamora M, Mui S, and Macleod KF. Autophagy is required for focal adhesion turnover, tumor cell motility, and metastasis. American Association for Cancer Research Annual Meeting, San Diego, CA. April 2014.

Sharifi MN, Collier C, Drake L, Chen H, Mui S, and Macleod KF. Autophagy is required for metastasis in the 4T1 mouse model of breast cancer. Keystone Symposium on Tumor Metabolism, Keystone, CO. February 2013.

Sharifi MN, Collier C, Drake L, Chen H, Mui S, and Macleod KF. Loss of autophagy limits metastasis in the 4T1 mouse model of breast cancer. Joint Meeting of the American Physician Scientist Association/American Society for Clinical Investigation, Chicago, IL. April 2012.

Sharifi MN, Collier C, Drake L, Chen H, Mui S, and Macleod KF. Loss of autophagy limits metastasis in the 4T1 mouse model of breast cancer. Keystone Symposium on Autophagy, Whistler, B.C., March 2011.

Work Experience

2006 – 2008

Staff Research Associate: University of California, Berkeley, Department of Plant and Molecular Biology

Principal Investigator: Krishna Niyogi, PhD.

- Participated in experimental design and execution for multiple research projects in the lab.
- Managed ordering and inventory for the 16-member lab.
- Direct supervisor of 2-3 undergraduate work-study students.

Teaching Experience

2012

Teaching Assistant, Molecular Mechanisms of Cancer Biology

University of Chicago Biological Sciences Division

Course Director: Kay Macleod, PhD

- Delivered two lectures on current topics in cancer biology for this graduate – level course
- Held weekly office hours to assist students with course assignments

2012

Teaching Assistant Training Course, University of Chicago.

Service

2014 – 2016

Peer Mentor, American Physician Scientist Association

- Providing one on one peer mentoring to undergraduate students interested in physician scientist careers.

2012 – 2016

MSTP Student Council, Pritzker School of Medicine

- Organized programmatic events to promote peer-to-peer and faculty-student mentorship.

2012 – 2014

MSTP Grand Rounds Student Leader, Pritzker School of Medicine

- Organized and led monthly discussions of clinical cases focusing on clinical reasoning and pathophysiology of disease with a group of 8-10 MSTP students across all years of training.