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Marina N. Sharifi

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Education

2018 – present	Fellow, Medical Oncology, ABIM Research Pathway, University of Wisconsin, Madison
2016 – 2018	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

2020	Wisconsin Association of Hematology/Oncology Fellow Award
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 Fellowship Award, 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

2020 – present	Post-doctoral research: University of Wisconsin, Madison, Department of Medicine. Mentors: Joshua Lang, MD/MS, Ruth O'Regan, MD. - Developing novel multiplex liquid biopsy assays in breast, lung and prostate cancer.
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

Sharifi M, Wisinski KB. Advances in the Treatment of Early-Stage HER2-Positive Breast Cancer. Clin Adv Hematol Oncol. 2020 Aug;18(8):482-492. PMID: 32903247

Anandan A, **Sharifi M,** O'Regan R. Molecular Assays to Determine Optimal Duration of Adjuvant Endocrine Therapy in Breast Cancer. Curr Treat Options Oncol. 2020 Aug 15;21(10):84. PMID: 32803324

Sharifi MN, Anandan A, Grogan P, O'Regan RM. Therapy after CDK inhibition in metastatic hormone receptor-positive breast cancer: resistance mechanisms and novel treatment strategies. Cancer. 2020 Aug 1;126(15):3400-3416. PMID: 32426848

Mowers EE, **Sharifi MN**, Macleod KF. Functions of autophagy in the tumor microenvironment and cancer metastasis. FEBS J. 2018 May;285(10):1751-1766. 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. *Contributed equally.

Brzezowski P, **Sharifi MN**, Dent RM, Morhard MK, Niyogi KK, Grimm B. Mg chelatase in chlorophyll synthesis and retrograde signaling in Chlamydomonas reinhardtii: CHLI2 cannot substitute for CHLI1. 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

Invited Book Chapters

Sharifi, MN and Leal, TA. Second line therapy in advanced non-small cell lung cancer (forthcoming). In Horn, L and Gillaspie, EA (Eds.), Lung Cancer. Philadelphia: Elsevier.

Sharifi, MN and O'Regan, RM. Novel Non-HER2-targeted therapies in HER2+ Breast Cancer (2018). In Hurvitz, S and McCann, K (Eds.), HER2-Positive Breast Cancer. Philadelphia: Elsevier.

Oral Presentations

Sharifi, MN. Development of liquid biopsy biomarkers for PI3K inhibitor therapies. Wisconsin Association of Hematology and Oncology Virtual Annual Conference. August 2020.

Sharifi, MN. 2018 SABCS Update: KATHERINE and IMPassion130. Carbone Cancer Center Grand Rounds. Madison, WI. April 2019.

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, Wolfe SK, Sperger JM, Schehr J, Bhattacharya S, Wisinski KB, Lang JM, O'Regan RM. Multiplex liquid biopsy for AR pathway activity in metastatic androgen receptor-positive triple negative breast cancer. American Association for Cancer Research Virtual Annual Meeting. April 2021.

Sharifi MN, Lovrec P, Eickhoff JC, Kenarsary A, Jarrard D, Floberg J, Cho SY, Kyriakopoulos CE, Emamekhoo H. Diagnostic utility of (18)F-Fluciclovine Positron Emission Tomogrophy in biochemically recurrent prostate cancer based on prior primary treatment modality for localized disease and subsequent treatment selection. Genitourinary Cancers Symposium, American Society of Clinical Oncology. February 2021.

Sharifi MN, Sperger JM, Gilsdorf C, Wolfe SK, Parkes A, Wisinski KB, O'Regan, RM, Lang, JM. Detection of PI3K pathway activation in circulating tumor cells in PIK3CA mutated metastatic breast cancer as a putative predictive biomarker for PI3K inhibitor therapies. San Antonio Breast Cancer Symposium. December 2020.

Sharifi MN, Wolfe SK, Sperger JM, Bhattacharya S, O'Regan, RM, Lang, JM. Androgen receptor expression and subcellular localization on circulating tumor cells in a Phase I trial of anti-androgen bicalutamide with CDK4/6 inhibitor ribociclib in metastatic androgen receptor-positive triple negative breast cancer. American Association for Cancer Research Virtual Annual Meeting II. June 2020.

Sharifi MN, Burkard ME, Traynor AM, Campbell, TC, Deming DA and Leal, TA. SCLC transformation as mechanism of resistance to EGFR TKI in NSCLC: predictors of transformation and importance of tissue biopsy upon disease progression. International Association for the Study of Lung Cancer Annual Targeted Therapies of Lung Cancer Meeting, Santa Monica, CA. February 2019.

Sharifi MN, Wisinski KB, Burkard ME, Tevaarwerk AJ, Tamkus D, Chan N, Truica C, Danciu O, Hoskins K and O'Regan, RM. A phase I trial of bicalutamide, an androgen receptor inhibitor, in combination with ribociclib, a CDK4/6 inhibitor, in advanced androgen receptor-positive triple negative breast cancer. San Antonio Breast Cancer Symposium, San Antonio, TX. December 2018.

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.

Sharifi MN, Dent RM and Niyogi KK. Characterization of seven insertional mutants with pigment-deficient phenotypes in the photosynthetic model organism *Chlamydomonas reinhardtii*. 17th Western Photosynthesis Conference, Asilomar, CA, January 2007.

Research Support

University of Wisconsin Training in Cancer Biology T32
Post-doctoral T32 support (2020-2022)

University of Wisconsin Department of Medicine
Internal Medicine Pathway for Academic Career Training (2016-2022)
$21,000 (Internal)

University of Chicago Medical Scientist Training Program T32
Pre-doctoral T32 support (2008-2009, 2010-2012, 2014-2016)

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.

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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

2020 — present — UW Madison Department of Medicine COVID Research Committee

2019 — present — Deputy Editor, NCI Cancer Center Tumor Board Program, theMednet.org

- Moderating questions submitted to the virtual tumor board program
- Expansion of the program to additional NCI cancer center sites
- Expansion of the involved disease sites to include GU oncology

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.