BIOGRAPHICAL SKETCH

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NAME: Riedlinger, Gregory

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

POSITION TITLE: Assistant Professor of Pathology, Division of Translational Pathology

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 Maryland	B.S.	12/1998	Biochemistry
Wake Forest University Graduate School of Arts and Sciences	Ph.D.	7/2007	Cancer Biology
Wake Forest University School of Medicine	M.D.	5/2009	

A. Personal Statement

I am a board-certified pathologist, physician scientist, and Chief of Molecular Pathology and the Interim Director of the Biospecimen Repository and Histopathology Service at Rutgers Cancer Institute of New Jersey (CINJ). I have special expertise in cancer biology and next-generation sequencing (NGS) for molecular oncology. My clinical responsibilities include sign-out of all molecular oncology cases generated at Rutgers Robert Wood Johnson University Hospital. Additionally, since 2015 I have been the lead pathologist for the Precision Medicine Initiative at CINJ and present the underlying molecular biology and make treatment recommendations based on genomic profiling of tumors at a weekly molecular tumor board. These treatment recommendations include clinical trials and off-label therapies, in addition to FDA approved agents, based on the tumor's underlying molecular alterations and histologic subtype. I have extensive experience in clinical and research based genomic analysis of cancer specimens.

Ongoing and recently completed projects that I would like to highlight include:

ORIEN-CT-CINJ001502
Riedlinger (PI), Role: Principal Investigator
The project the goal is to combine patient genomic and health information to better inform cancer care.

1 P01 CA250957-01A1
Shen (PI), Role: Co-Investigator
05/01/2021 – 04/30/2026
Mechanisms of the BRCA-network in tumorigenesis and therapeutic response

1R01CA233662
Khiabanian (PI), Role: Co-Investigator
04/01/19-03/31/24
Evolution and clinical impact of clonal hematopoiesis of indeterminate potential in breast tumor microenvironment

1R01CA239093
Pine (PI), Role: Co-Investigator
5/15/20-4/30/25
Discovery and therapeutic targeting of biological determinants of lung cancer health disparities

1. **Riedlinger GM**, Hadigol M, Khiabanian H, Ganesan S. Detection of *JAK2*-V617F Mutations in Solid Tumor Sequencing May Result from Coexistent Myeloproliferative Neoplasms. *JAMA Oncology.* 2019 Feb 1;5(2):265-267 PMID:30605212
2. Sharma A, Merritt E, Xu X, Cruz A, Jiang C, Sarkodie H, Zhou Z, Malhotra J, **Riedlinger GM**, De S. Non-Genetic Intra-Tumor Heterogeneity Is a Major Predictor of Phenotypic Heterogeneity and Ongoing Evolutionary Dynamics in Lung Tumors. *Cell Rep*. 2019 Nov 19;29(8):2164-2174.e5 PMID: 31747591
3. **Riedlinger GM**, Joshi S, Hirshfield KM, Barnard N, Ganesan S. Targetable Alterations in Invasive Pleomorphic Lobular Carcinoma of the Breast. *Breast Cancer Res.* 2021 Jan 13;23 PMID: 33441174
4. Biswas A, Ghaddar B, **Riedlinger G**, De S. Inference on spatial heterogeneity in tumor microenvironment using spatial transcriptomics data. *Comput Syst Oncol.* 2022 Sep; 2(3):e21043. PMID: 36035873

B. Positions, Scientific Appointments, and Honors

2022-Present Chief of Molecular Pathology, Rutgers Cancer Institute of New Jersey (CINJ)
2021-Present Ad hoc reviewer for Frontiers in Immunology
2021-Present Ad hoc reviewer for Frontiers in Oncology
2021-Present Associate Professor, Department of Pathology, Division of Translational Pathology, Rutgers Robert Wood Johnson Medical School
2021-Present Interim Director of the Biospecimen Repository and Histopathology Service, Rutgers Cancer Institute of New Jersey (CINJ)
2017-Present Ad hoc reviewer for JCO Precision Oncology
2014-Present Association of Molecular Pathology
2015-2021 Assistant Professor, Department of Pathology, Division of Translational Pathology, Rutgers Robert Wood Johnson Medical School
2014-2015 Clinical Fellow, Molecular Genetic Pathology, University of Pittsburgh Medical Center, Pittsburgh, PA,
2013-2014 Clinical Fellow, Pathology Informatics, Massachusetts General Hospital/Harvard Medical School, Boston, MA
2012-Present Association of Pathology Informatics
2012 Association of Pathology Informatics Travel Award
2011-Present Ad hoc reviewer for Cancer Immunology, Immunotherapy
2011-Present United States and Canadian Academy of Pathology
2010-2013 Clinical Resident, Anatomic Pathology, National Cancer Institute, Bethesda, MD
2009-2010 Post-Doctoral Fellow, Transcription Factors/ChIP Sequencing NIDDK, National Institutes of Health, Bethesda, MD
2008-2009 Clinical Honors in Pathology, Radiation Oncology, Neurology, Pediatric Hematology Oncology Acting Internship, Adult Hematology Oncology, and Nuclear Medicine at Wake Forest University School of Medicine
2006-2007 Cancer biology training award, Wake Forest University School of Medicine
2002-2009 MD/PhD training award, Wake Forest University School of Medicine

C. Contributions to Science

1. Created conditional gene inactivation of the signal transducers and activators of transcription 5a and 5b (Stat5) mice which has been instrumental in defining the role of these transcription factors in various cell lineages and in mouse models of cancer. These mice have been used to show a critical role for Stat5 in AML, CML, polycythemia vera, mammary tumorigenesis, and normal lymphoid development and

differentiation. More than 450 publications cite the original article describing the creation of these knockout mice.

a. Miyoshi K, Cui Y, **Riedlinger G,** Robinson P, Lehoczky J, Zon L, Oka T, Dewar K, Hennighausen L. Structure of the mouse Stat 3/5 locus: evolution from Drosophila to zebrafish to mouse. *Genomics.* 2001 Jan 15;71(2):150-5. PMID: 11161808
b. Cui Y, **Riedlinger G,** Miyoshi K, Tang W, Li C, Deng CX, Robinson GW, Hennighausen L. Inactivation of Stat5 in mouse mammary epithelium during pregnancy reveals distinct functions in cell proliferation, survival, and differentiation. *Mol Cell Biol.* 2004 Sep;24(18):8037-47. PMID: 15340066, PMCID: PMC515028
c. Yu JH, Zhu BM, Wickre M, **Riedlinger G**, Chen W, Hosui A, Robinson GW, Hennighausen L. The transcription factors signal transducer and activator of transcription 5A (STAT5A) and STAT5B negatively regulate cell proliferation through the activation of cyclin-dependent kinase inhibitor 2b (Cdkn2b) and Cdkn1a expression. *Hepatology*. 2010 Nov;52(5):1808-18. PMID: 21038417, PMCID: PMC3152209.
d. Yu JH, Zhu BM, **Riedlinger G**, Kang K, Hennighausen L. The liver-specific tumor suppressor STAT5 controls expression of the ROS generating enzyme NOX4 and the pro-apoptotic proteins PUMA and BIM. *Hepatology*. 2012 Jun 18; 56(6):2375-86. PMID: 22711600, PMCID: PMC3505809.

2. Characterized the anti-cancer immunity in a novel strain of spontaneous regression/complete resistance mice (SR/CR mice). This is one of the few experimental models for natural immune resistance to cancer. This project has resulted in the publication of twelve papers in prestigious peer-reviewed journals.

a. Hicks AM, **Riedlinger G,** Willingham MC, Alexander-Miller MA, Von Kap-Herr C, Pettenati MJ, Sanders AM, Weir HM, Du W, Kim J, Simpson AJ, Old LJ, Cui Z. Transferable anticancer innate immunity in spontaneous regression/complete resistance mice. *Proc Natl Acad Sci U S A*. 2006 May 16;103(20):7753-8. PMID: 16682640, PMCID: PMC1458507
b. Stehle JR, Blanks MJ, **Riedlinger G**, Kim-Shapiro JW, Sanders A, Adams J, Willingham MC, Cui Z. Impact of Sex, MHC, and Age of recipients on the therapeutic effect of transferred leukocytes from cancer-resistant SR/CR mice. *BMC Cancer*. 2009 Sep 15; 9:328. PMID: 19754973, PMCID: PMC2749872.
c. Sanders A, Stehle JR, Blanks MJ, **Riedlinger G**, Kim-Shapiro JW, Monjazeb AM, Adams JM, Willingham MC, Cui Z. Cancer resistance of SR/CR mice in the genetic knockout backgrounds of leukocyte effector mechanisms: determinations for functional requirements. *BMC Cancer.* 2010 Mar 31;10:121. PMID: 20356394, PMCID: PMC2861034.
d. **Riedlinger G**, Adams J, Stehle JR, Blanks MJ, Sanders A, Hicks AM, Willingham MC, Cui Z. The Spectrum of Resistance in SR/CR Mice: the Critical Role of Chemoattraction in the Cancer/ Immune Cell Interaction. *BMC Cancer.* 2010 May 3;10:179. PMID: 20438640, PMCID: PMC2875217.

3. Adoption of various informatics solutions to improve the practice of pathology. This includes the use of digital imaging and the development of web-based applications to improve workflow. Projects included performing immunoscoring with digital image analysis on whole slide images to predict response in melanoma patients treated with ipilimumab and the creation of a web-based tool to implement the ACMG 2015 guidelines for the standardized interpretation of germline sequence variants.

a. Hipp JD, Johann DJ, Chen Y, Madabhushi A, Monaco J, Cheng J, Rodriguez-Canales J, Stumpe MC, **Riedlinger G**, Rosenberg AZ, Hanson JC, Kunju LP, Emmert-Buck MR, Balis UJ, Tangrea MA. Computer Aided Laser Dissection: A Microdissection Workflow Leveraging Image Analysis Tools. *J Pathol Inform.* 2018 Dec 11;9:45. PMID: 30622835 PMCID: PMC6298131
b. Luo Y, **Riedlinger G**, Szolovits P. Text mining in cancer gene and pathway prioritization. *Cancer Inform.* 2014 Oct; 13(Suppl 1) 69-79. PMID: 25392685, PMCID: PMC4216063.
c. Foran DJ, Chen W, Chu H, Sadimin E, Loh D, **Riedlinger G**, Goodell LA, Ganesan S, Hirshfield K, Rodriguez L, DiPaola RS.. Roadmap to a Comprehensive Clinical Data Warehouse for Precision Medicine Applications in Oncology. *Cancer Inform.* 2017 Mar 2;16:1176935117694349 PMID: 28469389, PMCID: PMC5392017

d. Yagi Y, **Riedlinger G**, Xu X, Nakamura A, Levy B, Iafrate AJ, Mino-Kenudson M, Klepeis VE. Development of a database system and image viewer to assist in the correlation of histopathologic features and digital image analysis with clinical and molecular genetic information. *Pathol Int*. 2016 Feb;66(2):63-74. PMID: 26778830

4. Defined the organ-specific roles of the cell survival factor Bcl-x in the mouse in the laboratory of Dr. Lothar Hennighausen.

   a. Wagner KU, Claudio E, Rucker EB 3rd, **Riedlinger G,** Broussard C, Schwartzberg PL, Siebenlist U, Hennighausen L. Conditional deletion of the Bcl-x gene from erythroid cells results in hemolytic anemia and profound splenomegaly. *Development.* 2000 Nov;127(22):4949-58. PMID: 11044408
   b. Walton KD, Wagner KU, Rucker EB 3rd, Shillingford JM, Miyoshi K, Hennighausen L. Conditional deletion of the bcl-x gene from mouse mammary epithelium results in accelerated apoptosis during involution but does not compromise cell function during lactation. *Mech Dev.* 2001 Dec;109(2):281-93. PMID: 11731240
   c. **Riedlinger G,** Okagaki R, Wagner KU, Rucker EB 3rd, Oka T, Miyoshi K, Flaws JA, Hennighausen L. Bcl-x is not required for maintenance of follicles and corpus luteum in the postnatal mouse ovary. *Biol Reprod.* 2002 Feb;66(2):438-44. PMID: 11804960
   d. Hon H, Rucker EB 3rd, Hennighausen L, Jacob J. bcl-xL is critical for dendritic cell survival in vivo. J Immunol. 2004 Oct 1;173(7):4425-32. PMID: 15383573

   Complete List of Published Work in MyBibliography:
   http://www.ncbi.nlm.nih.gov/pubmed/?term=Riedlinger+G