

CURRICULUM VITAE
University of Pittsburgh
School of Medicine

BIOGRAPHICAL

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EDUCATION and TRAINING

UNDERGRADUATE:

1997-2001	Yale University New Haven, CT	BS, 2001	Ecology & Evolutionary Biology <i>magna cum laude</i>
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GRADUATE:

2001-2007	Yale University New Haven, CT	MS, 2003; PhD, 2007	Ecology & Evolutionary Biology Advisors: Leo W. Buss & Stephen L. Dellaporta
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POSTGRADUATE:

2007-2009	Harvard University Cambridge, MA	Postdoctoral Fellow	Immunology Advisor: Jack L. Strominger
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APPOINTMENTS and POSITIONS

2009-2013	Thomas E. Starzl Transplantation Institute Department of Surgery University of Pittsburgh Pittsburgh, PA	Research Instructor
2013-present	Thomas E. Starzl Transplantation Institute Department of Surgery University of Pittsburgh Pittsburgh, PA	Assistant Professor
2014-present	Department of Immunology University of Pittsburgh Pittsburgh, PA	Secondary Appointment

2017-present Center for Evolutionary Biology and Medicine Associate Director and
University of Pittsburgh Founding Member
Pittsburgh, PA

MEMBERSHIP in PROFESSIONAL and SCIENTIFIC SOCIETIES

Society for Integrative and Comparative Biology 2013-present
American Association of Immunologists 2014-present
Hydrozoan Society 2016-present
International Society for Developmental and Comparative Immunology 2017-present

HONORS

Honorable Mention, NSF Graduate Research Fellowship Program 2001
Distinction in the major of Ecology and Evolutionary Biology 2001
GAANN Fellow (Graduate Assistance in Areas of National Need) 2001-2003
John Spangler Nicholas Prize for Outstanding Doctoral Thesis 2008
University of Pittsburgh Internal Nominee for the Searle Scholars Program 2013
University of Pittsburgh Internal Nominee for the Keck Foundation Medical 2014
Research Grant

PUBLICATIONS

Peer Reviewed Refereed Articles

1. Cadavid LF*, Powell AE*, **Nicotra ML***, Moreno M, and Buss LW*. **2004**. “An invertebrate histocompatibility complex.” *Genetics*. 167(1):357-365.
**these authors contributed equally to this work*
2. **Nicotra ML** and Buss LW. **2005**. “A test for larval kin aggregations.” *The Biological Bulletin*. 208(3):157-158.
3. Powell AE, **Nicotra ML**, Moreno MA, Lakkis FG, Dellaporta SL, Buss LW. **2007**. “Differential effect of allorecognition loci on phenotype of *Hydractinia symbiolongicarpus* (Cnidaria: Hydrozoa).” *Genetics*. 177(4):2101–2107.

4. Li C, Ge B, **Nicotra ML**, Stern J, Kopcow H, Chen X, Strominger JL. **2007**. “JNK MAP kinase activation is required for MTOC and granule polarization in NKG2D-mediated NK cell cytotoxicity.” *Proceedings of the National Academy of Sciences of the United States of America*. 105(8):3017-3022.
5. Li C, Houser BL, **Nicotra ML**, Strominger JL. **2009**. “HLA-G homodimer-induced cytokine secretion through HLA-G receptors on human decidual macrophages and natural killer cells.” *Proceedings of the National Academy of Sciences of the United States of America*. 106(14):5767-5772.
6. **Nicotra ML**, Powell AE, Rosengarten RD, Moreno MA, Grimwood J, Lakkis FG, Dellaporta SL, Buss LW. **2009**. “A hypervariable invertebrate allodeterminant.” *Current Biology*. 19(7):583-589.
7. Rosa SFP, Powell AE, Rosengarten RD, **Nicotra ML**, Moreno MA, Grimwood J, Lakkis FG, Dellaporta SL, Buss LW. **2010**. “Hydractinia allodeterminant *alr1* resides in an Immunoglobulin Superfamily-like gene complex.” *Current Biology*. 20(12):1122-1127.
8. Houser BL, Tilburgs T, Hill J, **Nicotra ML**, Strominger JL. **2011**. “Two unique human decidual macrophage populations.” *Journal of Immunology*. 186(4):2633-2642.
9. Karadge UB, Gosto M, **Nicotra ML**. **2015**. “Allorecognition proteins in an invertebrate exhibit homophilic interactions.” *Current Biology*. 25(21): 2845-2850.
10. Dai H, Friday AJ, Abou-Daya KI, Williams AL, Mortin-Toth S, **Nicotra ML**, Rothstein DR, Shlomchik WD, Matozaki T, Isenberg JS, Oberbarnscheidt MH, Danska JS, and Lakkis FG. **2017**. “Donor SIRP α polymorphism modulates the innate immune response to allogeneic grafts.” *Science Immunology* 2(12) eaam6202.
11. Sanders SM, Ma Z, Hughes JM, Riscoe BM, Gibson GA, Watson AM, Flici H, Frank U, Schnitzler CE, Baxevanis AD, **Nicotra ML**. **2018**. “CRISPR/Cas9-mediated gene knockin in the hydroid *Hydractinia symbiolongicarpus*.” *BMC Genomics*. 19:649. [doi:10.1186/s12864-018-5032-z](https://doi.org/10.1186/s12864-018-5032-z)

Other Peer Reviewed Publications

1. Rosengarten RD and **Nicotra ML**. **2010**. “Model systems of invertebrate allorecognition.” *Current Biology*. 21(2):R82-92.

Other Non-Peer Reviewed Publications

1. **Nicotra ML**. **2017**. “A gut response.” *eLIFE* 2017;6:e28152
2. **Nicotra ML**. **2019**. “Invertebrate Allorecognition” *Current Biology* 29(11):Pr463-R467.

PROFESSIONAL ACTIVITIES

TEACHING:

Courses

2002	Writing Intensive Teaching Fellow, Principles of Evolution, Ecology, and Behavior (Yale University)
2003	Guest Lecturer, Marine Biology (St. George's University, Grenada, West Indies)
2003	Teaching Assistant, Evolutionary Biology (Yale University)
2010-2011	Lecturer, Comprehensive Immunology (1 lecture)
2012	Lecturer, Immunology (1 lecture)
2012, 2017-2019	Instructor, Immunology in Health and Disease PBL (6 sessions per year)
2015	Lecturer, Evolutionary Genetics & Development of Phenotypes (1 lecture)
2015-2019	Lecturer, Model Organisms (1 lecture)
2016-2018	Instructor, Molecular Biology PBL
2018-2019	Director, Integrative Systems Biology Conference, oversee student led conferences
2019	Lecturer, Innate Immunity (1 lecture)

Mentoring

Postdocs

2013-2015	Uma Karadge, PhD
2015-present	Steven Sanders, PhD

Graduate Students

2016-present	Aidan Huene (University of Pittsburgh, Integrative Systems Biology Program)
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Undergraduates

2003-2004	Benjamin Krinsky (Yale University) <i>Fine scale mapping of the Hydractinia Allorecognition Complex via a novel STS marker</i>
2008-2009	Vernon Wu (Harvard University) <i>Development of Galectin 1 ELISAs</i>
2011-2013	Shruti Iyer (University of Pittsburgh) <i>Creation of EGFP expression vectors for transgenic Hydractinia</i>
2014	Benjamin Clancy (University of Pittsburgh) <i>Cloning and ectopic expression of Hydractinia allorecognition molecules</i>
2013-2016	Joseph Holjencin (University of Pittsburgh) <i>Cloning and ectopic expression of Hydractinia allorecognition molecules</i>
2016-2017	Julia Hughes (University of Pittsburgh)
2016-present	Brooke Riscoe (University of Pittsburgh) <i>Identification of novel allodeterminants via genetic mapping</i>
2017-2018	Morgan Simms (University of Pittsburgh)
2018-present	Jordana Goulet (University of Pittsburgh)

High School Students

2012-2013	Kevin Williams (Pittsburgh Public Schools SciTech) <i>Creation of FLAG-tagged cadherin constructs for cell aggregation assays</i>
2013-2014	Kayla Payne (Pittsburgh Public Schools SciTech) <i>Creation of RFP expression constructs for Hydractinia.</i>
2016-2017	Annika Williams (Pittsburgh Public Schools SciTech) <i>Effect of the NFkB inhibitor TPCA-1 on Hydractinia allorecognition</i>
2018	Haley Dion (St. Mark's School, Southborough, MA) <i>Ability of cell permeable peptides to enter Hydractinia cells</i>

2018-2019

Nicole Shigiltchoff (Winchester Thurston)

Identification of novel allodeterminants via genetic mapping

RESEARCH:

1. Current Grant Support

Grant Number	Title	Role (<i>effort</i>)	Years Inclusive	Source	\$ Amount
IOS-1557339	Structural Basis of Self-recognition in Hydroid Allorecognition Proteins	PI <i>2 cal months*</i>	2016-20120	NSF	\$726,738 (total)
2R01AI099465	Innate Recognition of Allogeneic Non-self (PI: Lakkis)	Co-Investigator <i>5%</i>	2018-2023	NIH	\$32,905 (direct only)
	Stuart K. Patrick Grant for Transplant Innovation (PI: Camirand)	Co-Investigator <i>5%</i>	2018-2019	STI	\$6,581 (direct only)

*Salary support for PIs cannot exceed a total of 2 calendar months across all active NSF grants.

2. Prior Grant Support

Grant Number	Title	Role (<i>effort</i>)	Years Inclusive	Source	\$ Total Direct Funds
IOS-1255975	Biochemical and Biophysical Mechanisms of Hydroid Allorecognition	PI <i>2 cal months*</i>	2013-2017	NSF	\$445,000 (total)
1R01AI099465	Innate Recognition of Allogeneic Non-self (PI: Lakkis)	Collaborator <i>1 cal month</i>	2012-2017	NIH	\$52,841 (direct only)

*Salary support for PIs cannot exceed a total of 2 calendar months across all active NSF grants.

3. Other research related activities

Journal Refereeing

Biological Bulletin, Current Biology, Developmental and Comparative Immunology, eLIFE, Evolution and Development, Frontiers in Innate Immunity, Journal of Immunology, Journal of Visualized Experiments, Journal of Sea Research, Molecular Biology and Evolution, PLoS ONE, PNAS, Proceedings of the Royal Society B, Scientific Reports, Trends in Genetics.

Study Sections

National Science Foundation

Extramural grant reviewing

United States-Israel Binational Science Foundation

LIST of CURRENT RESEARCH INTERESTS:

Allorecognition, Genomics, Molecular Genetics, Invertebrate Zoology, Molecular Evolution, Comparative Immunology, Innate Immunity, Transplantation, Stem Cell Biology, Cellular Dedifferentiation.

INVITED SEMINARS and LECTURESHIPS

Invited Seminars

2019	Department of Biology, Lehigh University
2018	Center for Evolutionary and Theoretical Immunology, University of New Mexico
2016	Whitney Marine Lab, University of Florida
2016	College of Marine Science, University of South Florida
2016	Department of Biology, Carnegie Mellon University
2015	5 th Annual Acute Kidney Injury Symposium, University of Pittsburgh
2014	Department of Developmental Biology, University of Pittsburgh School of Medicine.
2014	Department of Biological Sciences, University of Pittsburgh.
2014	Senior Vice Chancellor's Research Seminar, University of Pittsburgh School of Medicine.
2013	National Human Genome Research Institute, NIH, Bethesda, MD.
2011	Science 2011. University of Pittsburgh. Pittsburgh, PA.
2010	Department of Immunology, University of Pittsburgh School of Medicine.
2008	3 rd International DAMPs and Alarmins Symposium. Pittsburgh, PA.
2006	FASEB Summer Research Conference in Transplant Immunology. Snowmass, CO.
2006	Starzl Transplantation Institute, University of Pittsburgh, Pittsburgh, PA.
2006	Genetics Grand Rounds, Tufts-New England Medical Center, Boston, MA.

SERVICE

1. University and Medical School

Committees

2016-2018	Admissions Committee, Integrative Systems Biology Program
2016-present	Externship Planning Committee, Integrative Systems Biology Program
2015-2016	Chair, Department of Immunology Retreat Planning Committee
2014-2015	Department of Immunology Retreat Planning Committee

2. National Service

Committees

2018	Organizing Committee, Cnidarian Model Systems Meeting, St. Augustine, FL
2019	Co-organizer, Cnidarian Model Systems Meeting, Davis, CA