Paul L. Maurizio

Contact Information

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Education

- ❑ **Ph.D.**, University of North Carolina at Chapel Hill (UNC-CH) 05/2018
  Bioinformatics & Computational Biology, Department of Genetics, School of Medicine
- ❑ **Sc.M.**, Johns Hopkins University 08/2011
  Molecular Microbiology & Immunology, Bloomberg School of Public Health
- ❑ **B.A.**, Swarthmore College 05/2005
  Major in Biochemistry; Major in Religion

Academic Positions Held

- ❑ **Postdoctoral Scholar**, University of Chicago 08/2018–Present
  Department of Medicine, Section in Genetic Medicine
  Supervisor: Luis B. Barreiro, Ph.D.
  Research Areas: single-cell RNA-seq; immunology; social status effects; functional genomics
- ❑ **Visiting Scholar**, Johns Hopkins University 07/2011–06/2012
  Bloomberg School of Public Health, Department of Molecular Microbiology & Immunology
  Supervisor: Fidel Zavala, M.D.
  Research Areas: molecular parasitology transgenesis; preclinical vaccine/adjuvant testing

Graduate Research Experiences

- ❑ **Graduate Research Assistant**, UNC-CH 05/2013–05/2018
  - Advisors: Mark T. Heise, Ph.D. & William Valdar, Ph.D.
  - Committee: Terrence S. Furey, Ph.D. (chair); Fernando Pardo-Manuel de Villena, Ph.D.; Ralph S. Baric, Ph.D.; Jeremy E. Purvis, Ph.D.
  - Research Areas: Bayesian statistical modeling; virology; heritability; QTL mapping; RNA-seq
- ❑ **Graduate Research Assistant** (Rotations), UNC-CH 07/2012–05/2013
  - Advisors: David M. Margolis, M.D.; Aravinda M. de Silva, Ph.D.; Kristina De Paris, Ph.D.
  - Research Areas: HIV-1 latency; dengue virus; antimalarial treatment response in infants
- ❑ **Graduate Research Assistant**, Johns Hopkins University 11/2009–05/2011
  - Advisor: Douglas E. Norris, Ph.D.
  - Research Areas: population genetics; vector ecology; flavivirus infection in *Culex* mosquitoes

Grants, Fellowships & Scholarships

- ❑ **PI, UChicago Pilot Grant**, for collaborative work within the Department of Medicine 2019
  Proposal: "Modeling the Effects of Social Stress on Cell-to-Cell Variation in the Immune Response to Influenza Vaccination"
- ❑ **Fellow, NIH T32 Fellowship**, Virology Training Grant, UNC-CH 2015–2016
- ❑ **Scholar, Master's Tuition Scholarship**, JHU 2010–2011
- ❑ **Fellow, Joshua Lippincott Fellowship**, Swarthmore College 2009–2010
- ❑ **Fellow, NSF Summer REU in Prokaryotic Biology**, University of Georgia 2004
  Advisor: Juergen Wiegel, Ph.D., Department of Microbiology
- ❑ **Fellow, NASA Astrobiology Summer Program**, The Pennsylvania State University 2003
  Advisor: Hiroshi Ohmoto, Ph.D., Department of Geosciences

Honors & Awards

- ❑ **Award, Travel**, 2nd Annual Science Policy Symposium at the Rockefeller University 11/2018
  The National Science Policy Network, NYC, NY
- ❑ **Award, Outstanding Oral Presentation**, 15th Annual CTC Meeting 06/2017
  Complex Trait Community, Memphis, TN

- ❑ **Award, Travel**, 2nd Penn Symposium on Mathematical & Computational Biology *(declined, unable to attend)*, Philadelphia, PA 05/2017
- ❑ **Award, Notable Poster**, 1st Annual Research Computing Symposium, UNC-CH 05/2014
- ❑ **Award, Student Membership**, Tropical Medicine Dinner Club of Baltimore 2010 & 2011
- ❑ **Award, Poster**, 3rd Place, 82nd Annual Eastern Branch Meeting Entomological Society of America, Harrisburg, PA 03/2011
- ❑ **Award, Blue Ribbon Poster**, Johns Hopkins Global Health Day, JHU 02/2011
- ❑ **Award, Global Health Field Research**, JHU Center for Global Health 04/2010
- ❑ **Award, Simpson Student Fund**, Tropical Medicine Dinner Club of Baltimore 03/2010
- ❑ **Deans' Award**, Swarthmore College 05/2005

Preprints and Working Papers

Maurizio PL†, Fuseini H, Tegha G, Hosseinipour M and De Paris K. Signatures of divergent antimalarial treatment responses in peripheral blood from infants and adults in Malawi. `https://doi.org/10.1101/564757`. (*submitted*, † = corresponding author)

Shorter JR*, **Maurizio PL***, Bell TA, Shaw GD, Miller DR, Gooch TJ, Spence JS, McMillan L, Valdar W and Pardo-Manuel de Villena F. A diallel of the mouse Collaborative Cross founders reveals strong strain-specific maternal effects on litter size. doi: `https://doi.org/10.1101/458877` (*revised and resubmitted*, * = co-first authors) *1 citation (Google Scholar)*

Sanz J, **Maurizio PL**, Snyder-Mackler N, Simons ND, Voyles T, Kohn J, Michopoulos V, Wilson M, Tung J and Barreiro LB. Social history and exposure to pathogen signals modulate social status effects on gene regulation in rhesus macaques. `https://doi.org/10.1101/552356`. (*submitted*)

Keele GR, **Maurizio PL**, Oreper D and Valdar W. Bayesian decision theoretic design of two-founder experimental crosses given diallel data. doi: `https://doi.org/10.1101/489682`. (*working paper*)

Peer-Reviewed Publications (published)

Maurizio PL, Ferris MT, Keele GR, Miller DR, Shaw GD, Whitmore AC, West A, Morrison CR, Noll KE, Plante KS, Cockrell AS, Threadgill DW, Pardo-Manuel de Villena F, Baric RS, Heise MT and Valdar W. **2018**. Bayesian diallel analysis reveals *Mx1*-dependent and *Mx1*-independent effects on response to influenza A virus in mice. *G3: Genes, Genomes, Genetics*. 8(2): 427-445. doi: `https://doi.org/10.1534/g3.117.300438`. PMID:29187420. *5 citations*

Turner SD, **Maurizio PL**, Valdar W, Yandell BS and Simon PW. Dissecting the genetic architecture of shoot growth in carrot (*Daucus carota* L.) using a diallel mating design. **2018**. *G3: Genes, Genomes, Genetics*. 8(2): 411-426. doi: `https://doi.org/10.1534/g3.117.300235`. PMID:29187419. *6 citations*

Espinosa DA, Yadava A, Angov E, **Maurizio PL**, Ockenhouse CF and Zavala F. **2013**. Development of a chimeric *Plasmodium berghei* strain expressing the repeat region of the *P. vivax* circumsporozoite protein for in vivo evaluation of vaccine efficacy. *Infection and Immunity*. 81(8):2882-2887. doi: `https://dx.doi.org/10.1128/IAI.00461-13`. PMID:23716612. *36 citations*

Walsh MC, Kim GK, **Maurizio PL**, Molnar EE and Choi Y. **2008**. TRAF6 auto-ubiquitination-independent activation of the NFκB and MAPK pathways in response to IL-1 and RANKL. *PLoS One*. 3(12):e4064. doi: `https://dx.doi.org/10.1371/journal.pone.0004064`. PMID:19112497. *145 citations*

Manuscripts In Preparation

Maurizio PL, Keele GR, Cai Y, Ferris MT, Miller DR, Whitmore AC, West A, Morrison CR,

Noll KE, Plante KS, Cockrell AS, Pardo-Manuel de Villena F, Baric RS, Heise MT and Valdar W. Influenza lung immunopathology is driven by lymphocyte QTL on Chromosome 2 in Collaborative Cross F1 intercross mice. (*in preparation*)

Maurizio PL, Ferris MT, Linnertz C, Morrison CR, Plante KS, Pardo-Manuel de Villena F, Valdar W and Heise MT. Host parent-of-origin effects modulate influenza virus severity and post-infection gene expression in the lung in F1 reciprocal cross mice. (*in preparation*)

Schaefer A, **Maurizio PL**, Ferris MT, Whitmore AC, Pardo Manuel de Villena F, Threadgill DW, McWeeney S, Heise MT and Baric RS. Host genetic regulation of SARS-CoV infectivity in *in vivo* pathogenesis. (*in preparation*)

Additional Publications

Maurizio PL. **2018**. Modeling the Host Genetic Determinants of Influenza Virus Pathogenesis in Mice. Doctor of Philosophy (Ph.D.) Dissertation. University of North Carolina at Chapel Hill. 270 pp. (dissertation, accepted 04/2018)

Maurizio PL and Ferris MT. **2017**. "The Collaborative Cross Resource for Systems Genetics Research of Infectious Diseases." *Methods in Molecular Biology: Systems Genetics - Methods and Protocols*. Springer/Humana Press: New York, NY. Editors: Klaus Schughart, Robert Williams. eBook ISBN: 978-1-4939-6427-7, Hardcover ISBN: 978-1-4939-6425-3. doi: `https://dx.doi.org/10.1007/978-1-4939-6427-7_28`. PMID:27933545. (chapter) *4 citations*

Maurizio PL. **2011**. Detection and vertical transmission of *Culex* flavivirus in *Culex quinquefasciatus* (Diptera: Culicidae) mosquitoes from Zambia, Africa. Master of Science (Sc.M.) thesis. Johns Hopkins University. 127 pp. `https://catalog.library.jhu.edu/catalog/bib_4040612`. (thesis)

Additional Professional Experience

- ❑ **Staff Research Associate**, University of California, Los Angeles 10/2007–07/2009
  Microbiology, Immunology & Molecular Genetics
  Supervisor: M. Carrie Miceli, Ph.D.
  Research Areas: drug validation; mouse and tissue culture models of muscular dystrophy
- ❑ **Research Specialist**, University of Pennsylvania 10/2005–09/2007
  Pathology & Laboratory Medicine
  Supervisor: Yongwon Choi, Ph.D.
  Research Areas: innate immune signaling; ubiquitination and TRAF6 signaling
- ❑ **Field Assistant**, Ecology, Grand Canyon Trust 05/2005–07/2005
  Supervisor: Ethan Aumack, Sc.M.

Professional Development

- ❑ **Participant, *GENETICS* Peer Review Training Program**, accepted 06/2018–Present
- ❑ **Participant**, Scientific Writing from the Reader's Perspective Workshop, UNC-CH 06/2017
- ❑ **Participant**, Rigor & Reproducibility Workshop, UNC-CH 05/2016
- ❑ **Student**, Short Course on Systems Genetics, The Jackson Laboratory 09/2014–10/2014
  Bar Harbor, ME
- ❑ **Participant**, Next Generation Sequencing Workshop, UNC-CH 06/2014
- ❑ **Vaccine Science & Policy Certificate**, Dept. of International Health, JHU 2010

Leadership & Service

- ❑ **Champions Program Mentor** 11/2018–Present
  First-Generation, Low-Income, and Immigrant Network (FLI Network), University of Chicago
  Service: One-on-one mentorship of undergraduate; helping with career, professional devlopment and goal achievement
- ❑ **Director, Board of Directors**, elected 10/2015–Present
  Universities Allied for Essential Medicines, North America, 501(c)(3)

Service: Corporate Secretary (10/2015–02/2018); Fundraising Committee (2015–2017); Human Resources Committee (2017–Present); promoted responsible management of non-profit; supported national and global university student activities, including access to medicines and human rights initiatives

- ❑ **Panelist, Carolina Grad Student Firsts**, UNC-CH 01/2018–04/2018
  Service: Volunteered on three speaker panels, representing my experience as a first-generation (1st-gen) undergraduate and graduate student; promoted graduate and doctoral education to UNC-CH and Duke University 1st-gen undergraduates
- ❑ **Session Chair**, UNC-Chapel Hill Virology Colloquium, Chapel Hill, NC 10/2015
- ❑ **Session Chair**, Evolution 2014 Conference, Raleigh, NC 06/2014
- ❑ **Peer Mentor**, First-Year Group 09/2013–12/2013
  Biological & Biomedical Sciences Program, UNC-CH
- ❑ **Guest Blogger**, 12th Annual World Vaccine Congress & Expo 04/2012
  National Harbor, MD
- ❑ **HIV Tester & Counselor**, Institute for Human Virology 07/2010–01/2012
  University of Maryland School of Medicine, Baltimore, MD
- ❑ **Tutor**, Health Professions Recruitment and Exposure Program, JHU 01/2010–03/2010

Teaching Experience

- ❑ **Coding Instructor**, Introduction to R 06/2016–08/2016
  How to Learn to Code, Small Group, UNC-CH
  Website: `http://mauriziopaul.github.io/intro-to-R/overview/`
- ❑ **Coding Helper**, Software Carpentry Workshop (Git, SQL), UNC-CH 04/2016
- ❑ **Teaching Assistant**, Foundations in Population Genomics, BCB 722 03/2014–05/2014
  Instructor: Praveen Sethupathy, Ph.D.; UNC-CH
- ❑ **Teaching Assistant**, Biological Chemistry Laboratory 01/2004–05/2004
  CHEM 038, Swarthmore College

Skills & Travel

- ❑ **Programming, Computing & Statistics:** R, Python, Mathematica, Matlab, STATA, JAGS, Stan, SQL, LaTeX, bash, git
- ❑ **Graduate Courses Taken in Quantitative Methods:** Bayesian Statistics, Databases, Mathematical Modeling, Sequence Analysis, Infectious Disease Dynamics, Introduction to Statistical Modeling, Statistical Methods in Public Health, Structural Bioinformatics, Topics in Computer Science: Computational Genetics, Topics in Population Genetics
- ❑ **Extended Professional Travel:** Macha, Zambia (2010); Hangzhou, China (2007); Australia (2003)

Professional Affiliations

- ❑ **The Genetics Society of America (GSA)**, Member 2018–Present
- ❑ **Sigma Xi**, The Scientific Research Society 2004–Present
- ❑ **AAAS**, Science Program for Excellence in Science, Sponsored Membership 2014–2017