Paul L. Maurizio

Contact Information

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Education

- ❑ **Ph.D.**, University of North Carolina at Chapel Hill (UNC-CH) 2018
  Curriculum in Bioinformatics & Computational Biology; Department of Genetics
- ❑ **Sc.M.**, Johns Hopkins University (JHU) Bloomberg School of Public Health 2011
  Department of Molecular Microbiology & Immunology
  Certificate in Vaccine Science & Policy; Dept. of International Health 2010
- ❑ **B.A.**, Swarthmore College 2005
  Majors: Biochemistry; Religion

Academic Positions Held

- ❑ **University of Chicago**, Department of Medicine, Section of Genetic Medicine (UChicago)
  - **Postdoctoral Fellow** 06/2020–Present
    Supervisor: Luis B. Barreiro, Ph.D.
    Research Areas: single-cell RNA-seq; mapping dynamic *M. tuberculosis* infection response eQTLs in human macrophages; immunogenomics; gene regulatory networks; social environmental effects on immune regulation
  - **Postdoctoral Scholar** 08/2018–05/2020

- ❑ **Johns Hopkins University**, Baltimore, MD
  - **Visiting Scholar**, Bloomberg School of Public Health 07/2011–06/2012
    Department of Molecular Microbiology & Immunology
    Supervisor: Fidel Zavala, M.D.
    Research Areas: molecular parasitology; transgenesis; preclinical vaccine and adjuvant studies

Graduate Research

- ❑ **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.
- ❑ **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.
- ❑ **Graduate Research Assistant**, JHU 11/2009–05/2011
  - Advisor: Douglas E. Norris, Ph.D.

Grants, Fellowships & Scholarships

- ❑ **Awardee, NIH/NIAID LRP**, Loan Repayment Program 2022–Present
  Research in Emerging Areas Critical to Human Health (L70)
- ❑ **PI, NIH/NIA F32**, Ruth L. Kirschstein National Research Service Award 2020–Present
  Sponsors: Luis B. Barreiro, Ph.D.; Matthew Stephens, Ph.D. (Statistics)
  Proposal: "Quantifying gene expression and network regulation in single cells to reveal the consequences of stress on the immune response" (#F32AG064883)
- ❑ **PI, UChicago Pilot Grant**, Department of Medicine 2019–Present
  Advisors: Luis B. Barreiro, Ph.D.; Patrick Wilson, Ph.D. (Rheumatology)
  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**, Penn State University 2003
  Advisor: Hiroshi Ohmoto, Ph.D., Department of Geosciences

Honors & Awards

- ❑ **Award, Diversity, Equity & Inclusion**, Biological Sciences Division, UChicago 11/2022
- ❑ **ISFS Associate**, Intersections Science Fellows Symposium (ISFS) 11/2021
- ❑ **Award, Travel**, 2nd Annual Science Policy Symposium 2018
  National Science Policy Network, NYC, NY
- ❑ **Award, Travel**, 2nd Penn Symposium on Mathematical & Computational Biology 2017
  (declined, unable to attend), Philadelphia, PA
- ❑ **Award, Notable Poster**, 1st Annual Research Computing Symposium, UNC-CH 2014
- ❑ **Award, Student Membership**, Tropical Medicine Dinner Club of Baltimore 2010 & 2011
- ❑ **Award, Blue Ribbon Poster**, Johns Hopkins Global Health Day, JHU 2011
- ❑ **Award, Global Health Field Research**, JHU Center for Global Health 2010
- ❑ **Award, Simpson Student Fund**, Tropical Medicine Dinner Club of Baltimore 2010
- ❑ **Deans' Award**, Swarthmore College 2005

Peer-Reviewed Publications

Grieshop K, **Maurizio PL**, Arnqvist G and Berger D. **2021**. Selection in males purges the mutation load on female fitness. *Evol Letters*. 5(4):328-343. doi: 10.1002/evl3.239. PMID: 34367659.

Sanz J, **Maurizio PL**, Snyder-Mackler N, Simons ND, Voyles T, Kohn J, Michopoulos V, Wilson M, Tung J and Barreiro LB. **2020**. Social history and exposure to pathogen signals modulate social status effects on gene regulation in rhesus macaques. *Proc Natl Acad Sci USA*. 117(38):23317-22. doi: 10.1073/pnas.1820846116. PMID:31611381.

Maurizio PL†, Fuseini H, Tegha G, Hosseinipour M and De Paris K. **2019**. Signatures of divergent anti-malarial treatment responses in peripheral blood from adults and young children in Malawi. *Malaria J*. 18(1):205. doi: 10.1186/s12936-019-2842-7. PMID:31234875. († = corresp. 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. **2019**. A diallel of the mouse Collaborative Cross founders reveals strong strain-specific maternal effects on litter size. *G3: Genes, Genomes, Genetics*. 9(5):1613-1622. doi: 10.1534/g3.118.200847. PMID:30877080. (* = equal contribution)

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: 10.1534/g3.117.300438. PMID:29187420.

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: 10.1534/g3.117.300235. PMID:29187419.

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: 10.1128/IAI.00461-13. PMID:23716612.

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: 10.1371/journal.pone.0004064. PMID:19112497.

Preprints, Abstracts & Other Contributions (selected)

Parrett JM, Lukasiewicz A, Chmielewski S, Szubert-Kruszynska A, **Maurizio PL**, Grieshop K and Radwan J. A sexually-selected male weapon characterised by strong additive genetic variance and no evidence for sexually antagonistic polyphenic maintenance. (*manuscript under revision, 11/2022*)

Maurizio PL, Aguirre-Gamboa R, Sanz J, Giraud-Gatineau A, Randolph HE, Von Platen C, Loulergue P, Launay O, Yotova V, Dumaine A, Brosch R, Tailleux L* and Barreiro LB*. **2022**. Dynamic genetic control of the gene expression response to *Mycobacterium tuberculosis* infection in human macrophages. Biology of Genomes, May 10^{th}–14^{th}. (*abstract*; * co-senior)

Hampton BK, Jensen KL, Whitmore AC, Gralinski LE, Leist SR, Linnertz CL, **Maurizio P**, Menachery VD, Morrison CR, Noll KE, Plante KS, Shaefer A, Shaw GD, West A, Pardo-Manuel de Villena F, Baric RS, Heise MT and Ferris MT. **2021**. Genetic regulation of immune homeostatic lung leukocyte populations influences respiratory virus induced disease in collaborative cross mice. *J Immunol.* 206(Supplement 1):24.05-24.05. (*abstract*)

Campbell CR, **Maurizio PL**, Simons ND, Batista J, Voyles T, Cobb M, Dumaine A, Michopoulos V, Barreiro L and Tung J. **2021**. Social behavioral control of cell-to-cell gene expression variance in rhesus macaque immune cells. Biology of Genomes, May 11^{th}–14^{th}. (*abstract*)

Hampton BK, Jensen KL, Whitmore AC, Linnertz CL, **Maurizio P**, Miller DR, Morrison CR, Noll KE, Plante KS, Shaw GD, West A, Baric RS, Pardo-Manuel de Villena F, Heise MT and Ferris MT. **2021**. Genetic regulation of homeostatic immune architecture in the lungs of Collaborative Cross mice. bioRxiv 2021.04.09.439180. doi: 10.1101/2021.04.09.439180. (*preprint* 2021-04-10)

Lee J, Strattan JS, Kagda M and **Maurizio P**. **2020**. ENCODE-DCC/chip-seq-pipeline2: Zenodo integration for citation purposes (v1.5.2). Zenodo. doi: 10.5281/zenodo.3978629. (*software contribution*)

Simons ND, **Maurizio PL**, Batista J, Michopoulos V, Barreiro LB and Tung J. **2020**. Parallel gene regulatory signatures of social stress and aging in rhesus macaques. 289^{th} Annual Meeting of the American Association of Physical Anthropologists, April 15^{th}–18^{th}. (*abstract*)

Keele GR, **Maurizio PL**, Oreper D and Valdar W. **2018**. Bayesian decision theoretic design of two-founder experimental crosses given diallel data. bioRxiv 489682. doi: 10.1101/489682. (*working paper* 2018-10-07)

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*)

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. doi: 10.1007/978-1-4939-6427-7_28. PMID:27933545. (*chapter*)

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. (*thesis*)

Kendall GC, Mokhonova E, Moran M, **Maurizio P**, Spencer M, Nelson S, Miceli MC. **2010**. High throughput screening for the identification of small molecules that modulate exon skipping on the *DMD* gene. Ottawa Conference on New Directions in Biology and Disease of Skeletal Muscle, Ottawa, Canada, May 5^{th}-8^{th}. (*abstract*)

Mesbah NM, **Maurizio P**, Zhang CL, Romanek CS, Mills G and Wiegel J. **2005**. Isolation of halophilic thermophilic '*Caloramator halophilus*' sp. nov. from salt flats of Northern Nevada. American Society for Microbiology 105^{th} General Meeting. Atlanta, GA, June 5^{th}-9^{th}. (*abstract*)

Additional Professional Experience

- ❑ **Staff Research Associate**, University of California, Los Angeles, CA 10/2007–07/2009
  Department of Microbiology, Immunology & Molecular Genetics
  Supervisor: M. Carrie Miceli, Ph.D.
- ❑ **Research Specialist**, University of Pennsylvania, Philadelphia, PA 10/2005–09/2007
  Department of Pathology & Laboratory Medicine
  Supervisor: Yongwon Choi, Ph.D.
- ❑ **Ecological Field Assistant**, Grand Canyon Trust, Flagstaff, AZ 05/2005–07/2005

Conference Presentations (selected)

- ❑ **Poster Presentation**, Biology of Genomes, Cold Spring Harbor, NY 05/2022
  "Dynamic genetic control of the gene expression response to *Mycobacterium tuberculosis* infection in human macrophages"
- ❑ **Flash Talk**, Intersections Science Fellows Symposium, virtual 11/2021
  "Uncovering cell-type-specific effects of social stress on the immune response in macaques"
- ❑ **Oral Presentation**, Division of Aging Biology New Investigators Forum, NIH/NIA 07/2021
  "Uncovering cell-type-specific effects of social stress on the immune response"
- ❑ **Oral Presentation**, 15^{th} Complex Trait Community Meeting: Memphis, TN 06/2017
  Presentation Award, "Diallel analysis reveals *Mx1*-dependent and independent effects driving influenza virus severity"
- ❑ **Poster Presentation**, Gordon Research Conference: Lucca (Barga), Italy 02/2015
  Quantitative Genetics & Genomics; "Characterization of parent-of-origin effects on host response to influenza A virus in reciprocal cross mice."
- ❑ **Oral Presentation**, Southeastern Regional Virology Conference: Atlanta, GA. 04/2014
  "Influenza infections in a diallel cross of mice reveal parent-of-origin effects influencing viral pathogenesis"
- ❑ **Poster Presentation**, Entomological Society of America Eastern Branch 03/2011
  82nd Annual Meeting: Harrisburg, PA.
  Presentation Award

Campus Presentations (selected)

- ❑ **Panelist**, Sharing of Diverse Perspectives: Postdoc Edition, UChicago 05/2021
  Graduate Recruitment Initiative Team
- ❑ **Presenter**, Committee on Immunology Work-in-Progress, UChicago 05/2021
- ❑ **Panelist**, PDA Seminar on Postdoc Fellowships, UChicago 02/2021
- ❑ **Presenter**, Department of Human Genetics Work-in-Progress, UChicago 11/2019
- ❑ **Keynote Speaker**, Midwest FLI Summit, UChicago 04/2019
  Invited by Socioeconomic Diversity Alliance to present my first-gen experience
- ❑ **Panelist**, Carolina Grad Student Firsts, UNC-CH and Duke University 01/2018–04/2018
  Volunteered on three speaker panels for first-gen undergraduates

Teaching & Mentorship

- ❑ **Champion Mentor**, First-Generation, Low-Income, Immigrant (FLI) Network
- Dang Nguyen, UChicago undergraduate; Majors: Comp Sci/Math 2020–Present
- Christian Porras, Present: M.D./Ph.D. student at Mt. Sinai MSTP 2018–2020

❑ **Guest Speaker**, Skype-A-Scientist
- Ericson Elementary, 5th grade, San Diego, CA 11/2021
- The Liberi School, 7th grade, Hudson, NY 02/2021
- Leitch Elementary, 2nd grade, Fremont, CA 11/2020

❑ **Coding Instructor**, Introduction to R, How to Learn to Code, UNC-CH 2016
https://bit.ly/IntroToR-HTLTC

❑ **Coding Helper**, Software Carpentry Workshop (Git, SQL), UNC-CH 2016

❑ **Teaching Assistant**, Foundations in Population Genomics, BCB 722, UNC-CH 2014

❑ **Teaching Assistant**, Global TEFL Network, Zhejiang University, Hangzhou, China 2007

❑ **Teaching Assistant**, Biological Chemistry Laboratory, CHEM 038, Swarthmore 2004

Professional Development

❑ **Selected Participant**, Grant Writing Coaching Groups, The Leadership Alliance 2021–2022

❑ **Selected Participant**, University of Pittsburgh Study 2020–2022
Building up a diverse pipeline for the biomedical research workforce

❑ **Participant**, Academic Job Market Working Groups, UChicagoGRAD 08/2021–09/2021

❑ **Selected Participant**, *GENETICS* Peer Review Training Program 2018–2020

❑ **Attendee**, The Allied Genetics Conference 2020 (TAGC), April 22nd-25th, online 2020

❑ **Attendee**, The Genetics of Human Disease, Cell Press Symposium, Chicago, IL 2019

❑ **Participant**, Scientific Writing from the Reader's Perspective Workshop, UNC-CH 2017

❑ **Participant**, Rigor & Reproducibility Workshop, UNC-CH 2016

❑ **Student**, Systems Genetics Course, The Jackson Lab, Bar Harbor, ME 2014

❑ **Participant**, Next Generation Sequencing Workshop, UNC-CH 2014

Peer-Review

❑ **Reviewer**, *Heredity* (Genetics Society) 2022–Present

❑ **Reviewer**, *Microbiology Spectrum* (American Society for Microbiology) 2021–Present

❑ **Reviewer**, *Journal of Virology* (American Society for Microbiology) 2020–Present

❑ **Reviewer**, *Database* (Oxford University Press) 2019–Present

❑ **Reviewer**, *Genetics* (Genetics Society of America) 2018–Present

❑ **Reviewer**, UChicago BSD Career Advancement for Postdocs Travel Awards 2021

Service & Outreach

❑ **Volunteer**, UChicago-DuSable Museum of African American History Collab. 08/2021–Present

❑ **Co-founder**, Pan-Asian Resource Group, UChicago 03/2021–Present

❑ **Co-founder**, Pan-Asian Coalition, Biological Sciences Division, UChicago 03/2021–Present

❑ **Member**, Committee on Immunology DEI Committee, UChicago 03/2021–Present

❑ **Member**, Postdoctoral Association (PDA) Steering Committee, UChicago 11/2020–Present
- **Chair**, Policy Committee; **Co-organizer**, Fellowship Writing Accountability Group

❑ **Presentation Judge**, Chicago EYES on Cancer/Diversity Research Symposium 08/2021

❑ **Board of Directors**, Universities Allied for Essential Medicines, 501(c)(3) 10/2015–10/2019

❑ **Session Chair**, Virology Colloquium, UNC-Chapel Hill, Chapel Hill, NC 10/2015

❑ **Session Chair**, Evolution 2014 Conference, Raleigh, NC 06/2014

❑ **Peer Mentor**, 1st-Year Group, Biol. & Biomed. Sci. Program, UNC-CH 09/2013–12/2013

❑ **Guest Blogger**, 12th Annual World Vaccine Congress, National Harbor, MD 04/2012

❑ **HIV Tester & Counselor**, Institute for Human Virology, Baltimore, MD 07/2010–01/2012

❑ **Tutor**, Health Professions Recruitment and Exposure Program, JHU 01/2010–03/2010

Quantitative Skills & Training

❑ **Programming, Computing & Statistics:** Python, R, RStudio, SQL, Matlab, Mathematica, JAGS, BUGS, Stan, bash, git, STATA, MCMCglmm

❑ **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