

## EDUCATION

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- **The University of North Carolina at Chapel Hill** Chapel Hill, NC  
*Ph.D. Genetics & Molecular Biology, expected Dec. 2020* Aug. 2015 – present
- **Massachusetts Institute of Technology** Cambridge, MA  
*S.B. Biology* Sept. 2011 – June 2015

## RESEARCH EXPERIENCE

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- **Department of Genetics, The University of North Carolina at Chapel Hill**  
*Graduate Research Assistant* Aug. 2015 – present
  - Designed and executed a large mouse screen (over 500 animals) to carry out quantitative trait locus (QTL) mapping and other quantitative genetics approaches to identify genes and pathways associated with susceptibility to adverse effects of ozone exposure
  - Performed *in vitro* and *in vivo* studies to investigate alveolar macrophage inflammatory, chromatin, and transcriptional responses to ozone exposure
  - Adapted multiple techniques for use in the lab, including flow cytometry, primary immune cell isolation and manipulation, and ATAC-seq (Assay for Transposase-Accessible Chromatin by Sequencing)
- **Department of Biological Engineering, Massachusetts Institute of Technology**  
*Undergraduate Research Assistant* Aug. 2013 - June 2015
  - Developed a novel biocompatible microparticle formulation for pulmonary delivery of a small molecule inhibitor of indoleamine 2,3-dioxygenase (IDO) for use in individual and combinatorial immunotherapy for metastatic cancers
- **Department of Biological Sciences, University of North Texas**  
*Undergraduate Researcher* June 2013 – Aug. 2013
  - Designed and performed a forward genetics EMS mutagenesis screen in *C. elegans* to identify gene-diet interactions involved in responses to hypoxia and anoxia

## PUBLICATIONS

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**A Tovar\***, GJ Smith\*, JM Thomas, WL Crouse, J Harkema, SNP Kelada. Transcriptional profiling of the murine airway response to acute ozone exposure. *Toxicol Sci.* 2019; epub ahead of print. doi: 10.1093/toxsci/kfz219  
\*co-first

M Weiser, JM Simon, B Kochar, **A Tovar**, JW Israel, A Robinson, GR Gipson, MS Schaner, HH Herfarth, RB Sartor, DPB McGovern, R Rahbar, TS Sadiq, MJ Koruda, TS Furey, SZ Sheikh. Molecular classification of Crohn's disease reveals two clinically relevant subtypes. *Gut* 2016;67:36-42. doi: 10.1136/gutjnl-2016-312518

## AWARDS AND HONORS

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- **Poster Presentation Award, First Place**, Initiative for Maximizing Student Diversity Symposium 2019
- **Outstanding Poster Presentation Award**, International Mammalian Genome Society (\$250) 2019
- **Graduate Student Travel Scholarship**, International Mammalian Genome Society (\$1500) 2019
- **Minority Trainee Development Scholarship**, American Thoracic Society (\$1000) 2019
- **Transportation Grant**, UNC Graduate School (\$400) 2019
- **Graduate Student Travel Scholarship**, International Mammalian Genome Society (\$475) 2018
- **Research Supplement to Promote Diversity in Health-Related Research**, National Institutes of Environmental Health (administered under parent R01 ES024965, \$155,247 direct costs over 3 years) 2016

## SELECTED PRESENTATIONS

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- *Investigating susceptibility to ozone-induced lung inflammation and injury using the Collaborative Cross genetic reference population*, American Thoracic Society International Conference, Dallas, TX, May 2019 (oral)
- *Dynamics of alveolar macrophage transcriptional regulation following sterile inflammation*, Cold Spring Harbor Laboratory (CSHL) Meeting on Systems Immunology, Cold Spring Harbor, NY, Mar. 2019 (poster)
- *Exploring mouse strain-by-exposure interactions in pulmonary and systemic inflammatory responses to the air pollutant ozone*, IMGC, Río Grande, Puerto Rico, Nov. 2018 (poster)
- *Characterization of the murine alveolar macrophage response to in vitro ozone exposure*,  
- CSHL Meeting on Gene Expression & Signaling in the Immune System, Cold Spring Harbor, NY, Apr. 2018  
- National SOT Meeting, San Antonio, TX, Mar. 2018 (poster)

## TEACHING EXPERIENCE

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- **The University of North Carolina at Chapel Hill**
  - *Academic Coach* *Aug. 2017 – present*
    - GNET 621: Introduction to Genetic Analysis; GNET 632: Advanced Molecular Biology; BCB 720: Introduction to Statistical Modeling
    - Meet with students weekly to discuss course content, assist with problem sets, and help them successfully prepare for exams
  - *Teaching Assistant (GNET 632)* *Jan. – May 2017*
    - Responsible for grading assignments and overseeing weekly journal club-style recitations
- **Massachusetts Institute of Technology**
  - *Tutor* *Aug. 2014 – May 2015*
    - Employed by the MIT Department of Biology to tutor all core undergraduate courses including genetics, biochemistry, and cell biology
  - *AP Biology Instructor* *Aug. 2013 – May 2014*
    - Created curriculum for and taught a self-contained AP Biology course to Boston-area high school students weekly on Sunday afternoons

## UNIVERSITY AND PROFESSIONAL SERVICE

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- **Chair**, UNC Academic and Research Intensive Careers (ARIC) Cohort *July 2019 – present*
- **Family Leader**, UNC Department of Genetics Network (GeNe) *May 2019 – present*
- **Committee Member**, Pre-Graduate Educational Advising Program (PGEAP) Recruitment & Training Committee *May 2019 – present*
- **Student Chair**, 2020 UNC Department of Genetics Symposium Planning Committee *Apr. 2019 – present*
- **PGEAP Advisor**, UNC University Career Services *Aug. 2018 – present*
- **Peer Mentor**, UNC BBSP First-Year Group *Aug. 2018 – present*
- **Committee Member**, UNC ARIC Planning Committee *Aug. – Dec. 2018*

## OUTREACH AND VOLUNTEERING

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- **Educational Counselor**, MIT Admissions *Aug. 2015 – present*  
Recruiting and interviewing for MIT Admissions in Chapel Hill and Durham, NC
- **Teacher**, DNA Day CONNECT *Aug. 2017 – May 2018*  
Developed curriculum and taught two HS biology classes (one developmental and one advanced) bimonthly
- **Ambassador**, North Carolina DNA Day *Apr. 2016, Apr. 2017, Apr. 2018*  
Visited rural NC high schools to teach a lesson about genetics and describe the life of a scientist
- **Volunteer**, Cambridge Science Festival *Apr. 2015*  
Spoke with the local community about research being performed at the Koch Institute for Integrative Cancer Research