

## Sonia J. Laurie, PhD

SPIRE Postdoctoral Research Scholar

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### EDUCATION AND TRAINING

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- 2018-present      Scholar, Seeding Postdoctoral Innovators in Research and Education (SPIRE) Program  
Institutional Research and Career Development Award (NIGMS K12)  
University of North Carolina at Chapel Hill, North Carolina  
Research Mentor: Jonathan S. Serody, MD – UNC CH  
*Assessing epigenetic plasticity of Type II innate lymphoid cells in the gastrointestinal tract after hematopoietic stem cell transplantation*  
Teaching Mentor: Timothy Champion, PhD - Johnson C. Smith University  
*Investigating the impact of metacognitive assignment wrappers on self-regulated learning skills in an undergraduate biology classroom*
- 2012-2018      PhD, Immunology and Molecular Pathogenesis  
Laney Graduate School Emory University, Atlanta, GA – Cumulative GPA: 3.93  
Laboratory of Mandy Ford, PhD, Department of Surgery  
NRSA Ruth L. Kirschstein National Research Service Award  
**Coinhibitory receptor control of T cell responses in transplantation**
- 2009-2012      N.D.S.\*, Immunology, Tufts University School of Medicine, Boston, MA  
Laboratory of Henry Wortis, MD, Department of Pathology  
*\*Non-degree seeking, NIH Post-baccalaureate Research Experience Program (PREP) Scholar*  
**CD4<sup>+</sup> MHC class II-restricted T cells in resistance to *Babesia microti* infection**
- 2010      BS, Biology  
Beloit College, Beloit, WI – Cumulative GPA: 3.35  
Research Mentor: Demetrius Gravis, PhD,  
**The transcription factor CREB in immune cell signaling and gene expression**  
Research Mentor: Amanda L. Marzo, PhD (Rush Medical Center, Chicago, IL)  
**PD-L1 inhibition enhances the rejection of murine malignant mesothelioma**  
Research Mentor: Brett Woods, PhD  
**Rat chromosome 8 protects against high-fat/low-carbohydrate-induced dyslipidemia**

## **TEACHING EXPERIENCE**

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- 2020      **Visiting Professor**, Johnson C. Smith University, Charlotte, NC  
Department of Natural Sciences and Mathematics  
Spring 2020: Biol 143C - Introduction to Biology I - Lecture & lab, 24 students  
Fall 2020: Biol 499 – Special Topics in Biology: Immunology - Lecture, 10 students
- 2018      Foundation of Online Teaching Training Course, Emory University
- 2014      **Teaching Assistant**, Dr. Rustom Antia, Department of Biology, Emory University  
Fall 2014: Biology 455 – Immunology and Disease – Lecture, 30 students
- 2013      TA Training & Teaching Opportunity Program, Emory University, Atlanta, GA
- 2008      **Teaching Assistant** to Dr. Tom McBride, Department of English, Beloit College  
Spring 2008: English 252 – Studies in Renaissance Literature – Lecture, 15 students
- 2007      **Teaching Assistant** to Dr. Brett Woods, Department of Biology, Beloit College  
Fall 2007: Biology 110 - Introduction to Biology – Lecture & lab, 20 students

## **NIH FUNDING & RECOGNITION**

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- 2018-present    NIGMS IRACDA SPIRE Scholarship (PI: Dr. Donald Lysle)  
University of North Carolina at Chapel Hill, Chapel Hill, NC  
**NIGMS:** K12GM000678-20
- 2015      Invited guest, NIAID, Rockville, MD  
Bridging the Career Gap: Promoting Diversity in Biomedical Research
- 2014-2018    NRSA Ruth L. Kirschstein National Research Service Award (F31 PI: Sonia Laurie)  
Emory University School of Medicine, Atlanta, GA  
**NIAID:** F31AI114250-01
- 2014      Recipient of NIAID RO1 Sub-Award (PI: Dr. Mandy L. Ford)  
Emory University School of Medicine, Atlanta, GA  
**NIAID:** RO1AI104699-01A1
- 2013-2014    Emory University NIH T32 Institutional Training Grant (PI: Dr. Brian D. Evavold)  
Emory University School of Medicine, Atlanta, GA  
**NIAID:** T32AI007610-15
- 2009-2012    Post-baccalaureate Research Experience Program Scholar (PREP)  
Tufts University School of Graduate Biomedical Science, Boston, MA  
**NIGMS:** GM066567-16

## **AWARDS AND HONORS**

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| 2016-2018 | Elected Student Representative to the Immunology and Molecular Pathogenesis Executive Faculty Committee, Emory University, Atlanta, GA |
| 2017      | Recipient of American Transplant Congress Young Investigator Award, Chicago, IL  |
| 2017      | Winner, 3 <sup>rd</sup> place poster award, Division Student Advisory Council Annual Research Symposium, Emory University, Atlanta, GA |
| 2017      | Recipient of American Transplant Congress Young Investigator Award, Chicago, IL  |
| 2012      | Invited guest, New England Science Symposium, Harvard Medical School, Boston, MA   |
| 2009      | Recipient of Beloit Souter Award: Outstanding Scholarship & Research Potential   |
| 2008-2009 | Ronald E. McNair Scholar   |
| 2008      | Schweppe Foundation Career Development Award Recipient   |
| 2006-2009 | WiscAMP Research Scholar   |
| 2005-2009 | Beloit College Eaton Scholarship Recipient   |

## **PROFESSIONAL/ACADEMIC SOCIETIES**

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|           |                     |   |
|-----------|---------------------|---|
| 2020-pres | Co-leader           | UNC Microbiology & Immunology Peer Mentorship Training Programming Committee                                |
| 2020-pres | Co-leader           | Working Group for Scientists Promoting Anti-racist Conversations & Equity, UNC Office of Graduate Education |
| 2020-pres | Postdoc Member      | Center for the Integration of Research, Teaching, and Learning  |
| 2020-pres | Postdoc Member      | Society for Advancement of Biology Education Research   |
| 2020-pres | Postdoc Member      | Council on Undergraduate Research   |
| 2019-pres | Postdoc Member      | Future Science Educators Network at UNC-CH  |
| 2019-pres | Early Career Mentee | UNC: Women in Science Deserve Opportunities & Mentorship  |
| 2018-pres | Postdoc Member      | Society for Advancing Chicanos and Native Americans in Science (SACNAS) at UNC Chapel Hill                  |
| 2018-2019 | Trainee Member      | American Society of Hematology  |
| 2017-2018 | Secretary           | Society for Advancing Chicanos and Native Americans in Science (SACNAS) at Emory                            |
| 2015-2018 | Member              | Association of Women in Science, Emory Graduate Chapter   |
| 2017      | Founding Member     | SACNAS at Emory   |
| 2017-2018 | Trainee Member      | The American Association of Immunologists   |
| 2017-2018 | Member              | Association of Women in Science, National Chapter   |
| 2017-2018 | Student Councilor   | Atlanta Society of Mentors, Emory University  |
| 2016-2018 | Series Manager      | Atlanta Society of Mentors, Emory University  |
| 2016-2017 | Secretary           | Immunology Graduates' Group, Emory University   |
| 2016      | Founding Member     | Immunology Graduates' Group, Emory University   |

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| 2014-2018 | Trainee Member | AST Trainee and Young Faculty Committee of Practice |
| 2014-2018 | Member         | Emory Science Advocacy Network, Emory University    |
| 2014-2018 | Trainee Member | The American Society of Transplantation (AST)       |

## **PROFESSIONAL DEVELOPMENT**

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| 2020 | CIRTL Workshop: “Leading Discussions Online”  |
| 2020 | American Society for Cell Biology “Teaching Tomorrow’s Scientists” Virtual Meeting  |
| 2020 | Chemistry Education Seminar Series, UNC Chapel Hill   |
| 2020 | Durham Congregations, Associations, and Neighborhoods (CAN) University: Intro to Broad-Based Organizing Training Pilot, Durham, NC                      |
| 2020 | CIRTL Course: “Planning your TAR Project”, UNC Chapel Hill  |
| 2020 | Cytobank Platform Training Seminar Series, Becton Dickinson   |
| 2020 | AAAS Science Seminar Series: “Monitoring the Immune System to Fight COVID19”  |
| 2019 | College Teaching Seminar with Dr. Ed Neal – UNC Chapel Hill, SPIRE Program  |
| 2019 | Introduction to the UNIX Shell – UNC CH School of Health Sciences Library Training  |
| 2019 | Introduction to Bioinformatics Basics – UNC CH School of Health Sci Library Training  |
| 2019 | Safe Zone Training – UNC CH LGBTQ Center, Student Academic Services   |
| 2019 | Harassment & Discrimination Prevention – UNC Equal Opportunity and Compliance Office  |
| 2019 | Introduction to R: Practical Examples in Linear Regression and ANOVA – UNC CH School of Health Sciences Library Training                                |
| 2019 | SPIRE Traveling Symposium - NC A & T University, Greensboro, NC   |
| 2019 | Annual NIEHS Biomedical Career Symposium, Raleigh, NC   |
| 2019 | NC Project Kaleidoscope Regional Networking Spring Meeting, “Increasing Student Motivation: Strategies that Work” - NC A & T University, Greensboro, NC |
| 2017 | Selected participant, NY Academy of Sciences, Science Alliance Leadership Training Program  |
| 2017 | Invited guest, Future of Graduate and Postdoctoral Training Conference, University of Colorado Anschutz Medical Campus, Denver, CO                      |
| 2015 | Invited guest, NIAID Bridging the Gap Development Workshop, Washington, DC  |
| 2009 | PREP “Skills for Scientists” Workshop Series, Tufts University School of Medicine   |

## **MENTORSHIP EXPERIENCE**

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### **Emory University School of Medicine**

#### Laboratory of Dr. Mandy L. Ford

- 2016 Phoebe Stark, University of Tennessee – Knoxville, TN  
Summer Undergraduate Program in Emory Renal Research Program  
Project Title: “2B4 Signaling and Regulation of Proliferation, Metabolism, and Death in Alloreactive CD8+ T Cells Following Transplantation.” Phoebe shared her findings as an invited guest at the 2016 American Society of Nephrology Kidney Week meeting in Chicago, IL. *Current position:* Phoebe is now in medical school at the University of California – San Diego.
- 2015-16 Miriam C. Cortes, MD, PhD, King's College Hospital - London  
Project Title: "Increased Pretransplant Frequency of CD28+ CD4+ TEM Predicts Belatacept-Resistant Rejection in Human Renal Transplant Recipients"  
*Current position:* Dr. Cortes is an attending in Adult and Pediatric Liver Transplantation at the NHS Foundation Trust in London.
- 2014-16 Maggie L. Diller, MD, Surgery resident, Emory University School of Medicine  
*Current position:* Dr. Diller graduated as a Chief Resident in 2019 and is now pursuing a minimally invasive Surgery Fellowship at Cedars Sinai in Los Angeles, CA.

### **Tufts University School of Graduate Biomedical Sciences, Boston, MA**

#### Department of Pathology, Laboratory of Dr. Henry H. Wortis

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|-----------|-----------------------|--|
| 2012      | Amey Kantikar, MS     | Pharmaceutical Science Associate II, GlaxoSmithKline   |
| 2012      | Sahil Kulhar, BPharm  | MBA at Boston University's Questrom School of Business   |
| 2011-2012 | Komal Sandhu, MS      | Biotechnology from Northeastern University<br>Research Associate II at Daktari Diagnostics   |
| 2010-2011 | Thomas Corriellus, BS | MS, University of Buffalo in Buffalo, NY<br>Pharmacy technician at CVS in Boston, MA   |
| 2010      | Amanda Mener, MD/PhD  | Orthopedic Surgery Residency, Albany Medical Center<br>BS, BA from Stanford, 2010<br>MD/PhD, Emory University School of Medicine, 2019 |
| 2009-2010 | Prachi Godiwala, MD   | OB/GYN Residency, George Washington University<br>BS, Tufts University, 2010<br>MD, University of Massachusetts Medical School, 2014   |

## **Beloit College Department of Biology, Beloit, WI**

Laboratory of Dr. Demetrius (Micho) Gravis

2009

Aaron Joiner

BS, Molecular, Integrative, and Cellular Biology, Beloit College, 2012

PhD, Fromme Laboratory at Cornell University

National Science Foundation Graduate Research Fellowship

## **BIBLIOGRAPHY**

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### **Peer-reviewed Publications**

1. Xie, J., Chen, C. W., Laurie, S. J., Zhang, W., Otani, S., Martin, G. S., Coopersmith, C. M., and Ford, M. L. **Increased Attrition of Memory T Cells During Sepsis Requires 2B4**. 2019. *JCI Insight*, 4(9):e126030.
2. Bozeman, A. M.<sup>#</sup>, Laurie, S. J.<sup>#</sup>, Haridas, D., Wagener, M. E., Ford, M. L. **Transplantation Preferentially Induces a KLRG-1<sup>lo</sup> CD127<sup>hi</sup> Differentiation Program in Antigen-Specific CD8<sup>+</sup> T Cells**. 2018. *Transplant Immunology*, 50: 34-42. <sup>#</sup>These authors contributed equally to this work.
3. Laurie, S. J., Liu D., Wagener M. E., Stark P. C., Terhorst, C., Ford, M. L. **2B4 Mediates Inhibition of CD8<sup>+</sup> T Cell Responses via Attenuation of Glycolysis and Cell Division**. 2018. *Journal of Immunology*, 201(5): 1536-1548.
4. Laurie, S. J., Ford, M. L. **Epigenetic Remodeling in Exhausted T Cells: Implications for Transplantation Tolerance**. 2017. *Transplantation*, 101(5): 894-895.
5. Cortes, M.C., Laurie, S. J., Mathews, D. V., Winterberg, P., Larsen, C. P., Adams, A. B., Ford, M. L. **Belatacept-Resistant Rejection is Associated with Increased Pre-Transplant Frequencies of CD28<sup>+</sup> CD4<sup>+</sup> T<sub>EM</sub> in Human Renal Transplant Recipients**. 2017. *American Journal of Transplantation*, 17(9): 2350-2362.
6. Woods, L. C. S., Woods, B., Leitschuh, C., Laurie, S. J., Jacob, H. J. **Rat Chromosome 8 Confers Protection against Dyslipidemia Caused by a High-Fat/Low-Carbohydrate Diet**. 2012. *Journal of Nutrigenetics and Nutrigenomics*, 5:81-93.

### **Manuscripts Under Revision**

Xu, N., Palmer, D., Shou, P., Laurie, S. J., Bommiasamy, H., Robeson, A., Wills, C., Dotti, G., Vincent, B., Restifo, N., and Serody, J. **Single Cell Sequencing Reveals a Critical Role for STING Agonist in enhancing CAR-T against breast cancer**.

Submitted April 2020 to *Journal of Experimental Medicine*, manuscript ID 20200844.

## **Selected Abstracts**

1. Laurie, S. J., Bruce, D. W., Bommasamy, H., Noel, M. P., Foster, J. P., Davis, I. J., Pattenden, S. G., Serody, J. **S. Epigenetic Plasticity of Type II Innate Lymphoid Cells in the Lower GI Tract.** *Blood* 2019; 134.
2. Hutto, T.\*, Laurie, S. J.\*, Morgan, E. T., McCarty, N. A., Wilkinson, K. D. **Maximizing Mentorship for Research Based PhD Students and Faculty through the Atlanta Society of Mentors (ASOM).** GA Clinical & Translational Science Alliance Conference. 2018. Poster. \**These authors contributed equally.*
3. Laurie, S. J., Liu, D., Wagener, M. E., Robertson, J. M., Ford, M. L. **The balance of CD28 and CTLA-4 signals controls TIGIT expression on antigen-specific CD4<sup>+</sup> effector T cells.** Keystone Symposia on Molecular and Cellular Biology: T Cell Dysfunction, Cancer, Infection. Breckenridge, CO. 2018. Poster.
4. Morgan, E. T., James, A. M., Hutto, T., Laurie, S. J., McCarty N., Comeau, D. Corbett, A. H., Tansey, M. G., Shorter, S., Marsteller, P., Wilkinson, K. D., **The Atlanta Society of Mentors: A multi-institutional approach to improving mentoring and mentoring awareness.** Training, Workforce Development, and Diversity Program Directors' Meeting. Baltimore. 2017. Poster.
5. Laurie, S. J., Liu, D., Wagener, M., Ford, M. L. **2B4 Signaling Regulates Metabolism in Alloreactive CD8<sup>+</sup> T Cells Following Transplantation.** 14<sup>th</sup> Annual Division Student Advisory Council Annual Research Symposium, Emory University, Atlanta, GA. 2016. Poster - *Winner, 3<sup>rd</sup> place award.*
6. Laurie, S. J., Liu, D., Wagener, M., Ford, M. L. **2B4 Signaling Regulates Metabolism in Alloreactive CD8<sup>+</sup> T Cells Following Transplantation.** Keystone: Immunometabolism, Banff, Canada. 2016. Poster.
7. Cortes, M. C., Laurie, S. J., Sayed, B. A., Ford, M. L. **Rapid Emergence of CD28<sup>null</sup> Cells Following Ex Vivo Restimulation Is Associated with Belatacept Resistant Rejection.** *Am Jour Trans 16: Supp 3.* 2016.
8. Margoles, L., Laurie, S. J., Coopersmith, C. Ford, M. L. **Sepsis Prolongs Allograft Survival Compared with Non-Septic Infection in a Murine Model of Skin Transplantation and *Pseudomonas aeruginosa* Pneumonia.** *Am Jour Trans 16: Supp 3.* 2016.
9. Chen, C. Laurie, S. J., Lyons, J., Coopersmith, C. Ford, M. L. **2B4 Expression on Human CD4<sup>+</sup> Memory T Cells is Associated With Functional Impairment.** *Am Jour Trans 15: Supp 3.* 2015.
10. Laurie, S. J., Liu, D., Ford, M. L. **Overexpression of 2B4 Inhibits the Expansion and Function of Donor Reactive CD8<sup>+</sup> T Cells in Selective Lymphoid Compartments.** *Am Jour Trans 15: Supp 3.* 2015.
11. Vannier, E., Silver, Z. Wilson, C., Su, J., Chiam, J., Laurie, S. J., Telford, S., Gelfand, J., Krause, P., Wortis, H. **Cellular basis for clearance of the protozoan parasite *Babesia microti* in immunocompromised hosts.** *J Immunol.* 188:43.13. 2012.
12. Laurie, S. J., Vannier, E., Wortis, H. H. **Phagocytosis, Interferon- $\gamma$ , IL-21, and CD4<sup>+</sup> MHC class II-restricted T cells in resistance to *Babesia microti* infection.** *J Immunol.* 188:43.14. 2012.
13. Laurie, S. J., Larret, N., Rogezenski, M., Lee, E., Marzo, A.L. **PD-L1 inhibition enhances the rejection of murine malignant mesothelioma.** McNair Scholars Summer Research Symposium. Beloit College. Beloit, WI. 2008. Oral presentation.
14. Laurie, S. J., Leitschuh, C.M., Woods, B. C., Solberg Woods, L. C. **Consomic Rats and the Application of Chromosomal Substitution: Determining Resistance to Metabolic Syndrome and the Role of Chromosome 8.** Beloit College Spring Symposium, Beloit, WI. 2008. Oral presentation.