301-404-6137
bds1217@gmail.com

Benjamin David Solomon

Education

Washington University, St. Louis, MO
- Ph.D., Immunology — Expected May, 2018
- M.D. — Expected May, 2018

Cornell University, Ithaca, NY
- B.A., Biological Science, *Magna Cum Laude* — May, 2009
- B.A., Philosophy — May, 2009

Grants, Honors, and Scholarship

- Angela Zheng and Shawn Hu Graduate Fellowship in Immunology — 2014
- NIH F30 Ruth L. Kirtschstein NRSA Pre-doctoral Fellowship — 2014
- Medical Scientist Training Program Fellow, Washington University — 2009-present
- *Magna Cum Laude*, Cornell Biology Department Honors Thesis Program — 2009
- Biomedical Research Apprenticeship Program Scholar, Washington University — 2008
- 1st Place Research Project, Cornell University BioExpo Research Symposium — 2008
- Cornell/HHMI Research Scholar — 2007
- HHMI/NIH/MCPS Student Internship Scholar — 2004

Publications

J. N. Chai, Y. Peng, S. Rengarajan, **B. D. Solomon**, T. L. Ai, Z. Shen, J. S. A. Perry, K. A. Knoop, T. Tanoue, S. Narushima, K. Honda, C. O. Elson, R. D. Newberry, T. S. Stappenbeck, A. L. Kau, D. A. Peterson J. G. Fox, C.-S. Hsieh, "*Helicobacter* species are potent drivers of colonic T cell responses in homeostasis and inflammation.," Sci. Immunol., vol. 2, no. 13, eaal5068, July 2017.

B. D. Solomon and C.-S. Hsieh, "Antigen-specific development of mucosal Foxp3+RORγt+ T cells from regulatory T cell precursors.," J. Immunol., vol. 197, no 9, pp. 3512-3519, Nov 2016.

T. L. Ai, **B. D. Solomon**, and C.-S. Hsieh, "T-cell selection and intestinal homeostasis.," Immunol. Rev., vol. 259, no. 1, pp. 60–74, May 2014.

W.-L. Lo, **B. D. Solomon**, D. L. Donermeyer, C.-S. Hsieh, and P. M. Allen, "T cell immunodominance is dictated by the positively selecting self-peptide.," Elife, vol. 3, p. e01457, Jan. 2014.

P. P. Ni, **B. Solomon**, C.-S. Hsieh, P. M. Allen, and G. P. Morris, "The Ability To Rearrange Dual TCRs Enhances Positive Selection, Leading to Increased Allo- and Autoreactive T Cell Repertoires.," J. Immunol., vol. 193, no. 4, pp. 1778–86, 2014.

B. D. Solomon, C. Mueller, W.-J. Chae, L. M. Alabanza, and M. S. Bynoe, "Neuropilin-1 attenuates autoreactivity in experimental autoimmune encephalomyelitis.," Proc. Natl. Acad. Sci. U. S. A., vol. 108, no. 5, pp. 2040–5, Feb. 2011.

B. U. Schraml, K. Hildner, W. Ise, W.-L. Lee, W. a-E. Smith, **B. Solomon**, G. Sahota, J. Sim, R. Mukasa, S. Cemerski, R. D. Hatton, G. D. Stormo, C. T. Weaver, J. H. Russell, T. L. Murphy, and K. M. Murphy, "The AP-1 transcription factor Batf controls T(H)17 differentiation.," Nature, vol. 460, no. 7253, pp. 405–9, Jul. 2009.

W. T. Watford, B. D. Hissong, L. R. Durant, H. Yamane, L. M. Muul, Y. Kanno, C. M. Tato, H. L. Ramos, A. E. Berger, L. Mielke, M. Pesu, **B. Solomon**, D. M. Frucht, W. E. Paul, A. Sher, D. Jankovic, P. N.

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Tsichlis, and J. J. O'Shea, "Tpl2 kinase regulates T cell interferon-gamma production and host resistance to Toxoplasma gondii.," J. Exp. Med., vol. 205, no. 12, pp. 2803–12, Nov. 2008.

Research experience

Washington University – *Doctoral Research* - Mentor: Dr. Chyi-Song Hsieh 2011-2016

- Dissertation: "Characterizing the Role of the T Cell Receptor Repertoire in T Cell Development and Function"
- Demonstrated distinct developmental pathways of mucosal T cell subsets at the clonal level through high-dimensional analysis of the T cell receptor repertoire

Washington University – Mentor: Dr. Kenneth Murphy 2008

- Identified the consensus sequence and promoter binding regions of the transcription factor BATF

Cornell University – Mentor: Dr. Margaret Bynoe 2006-2009

- Demonstrated the role of Neuropilin-1 as a toleragenic mechanism in the prevention of experimental autoimmune encephalomyelitis

National Institutes of Health – Mentor: Dr. John O'Shea 2005-2006

- Identification and molecular characterization of novel genes products involved in CD4+ T cell differentiation

Computational skills

- Statistical and programming languages: R (proficient), Python (familiar)
- Flow cytometry software: FlowJo (proficient), FACSDiva (proficient)
- Adobe applications: Photoshop (proficient), Illustrator (proficient)
- Web development: HTML (familiar), CSS (familiar), Bootstrap (familiar), Jekyll (familiar)
- Operating systems: Windows (proficient), Linux (familiar), Macintosh (familiar)
- Other: Markdown (proficient), Git (familiar), Latex (familiar), Microsoft applications (proficient)

Laboratory skills

- Cellular biology: Cell culture, surface/intracellular antibody staining, flow cytometry, retroviral transduction of cell lines, lymphocytes, and hematopoietic stem cells
- Molecular biology: DNA/RNA extraction, PCR, plasmid cloning, SDS-PAGE/western blotting, EMSA, ELISA, RNA reverse transcription
- Mouse experiments: animal husbandry, cellular adoptive transfer, bone marrow chimeras
- Computational biology: Illumina MiSeq experimental design and analysis, microarray analysis, RNA-sequencing analysis

Teaching experience

- Neurol 554: Neural Science – Teaching Assistant, *Washington University* 2011
- VETMI 315: Basic Immunology - Teaching Assistant, *Cornell University* 2008
- BIOBM 330: Principles of Biochemistry - Teaching Assistant, *Cornell University* 2007-2009

Leadership positions

- Medical Scientist Training Program Student Committee, *Washington University* 2011-present
- Undergraduate Biology Student Advisor, *Cornell University* 2007-2009
- Global Health Minor Advisory Committee, *Cornell University* 2006-2008
- Cornell Health International Chief Operating Officer, *Cornell University* 2006-2007