Steven M. Varga

Associate Dean of Academic Affairs and Graduate Student Development, Graduate College, Professor of Microbiology and Immunology and Professor of Pathology, Carver College of Medicine, University of Iowa

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EDUCATIONAL and PROFESSIONAL HISTORY

Higher Education

1993-1999 PhD, Immunology, University of Massachusetts Medical School
1989-1993 BS, Biology, University of Notre Dame

Professional and Academic Positions

2019-present Associate Dean, Graduate College, University of Iowa
2015-present Professor, Department of Microbiology and Immunology, University of Iowa
2013-2018 Director, Interdisciplinary Graduate Program in Immunology, University of Iowa
2009-present Secondary Appointment, Department of Pathology, University of Iowa
2009-2015 Associate Professor, Department of Microbiology and Immunology, University of Iowa
2003-2009 Assistant Professor, Department of Microbiology and Immunology, University of Iowa
1999-2003 Post-doctoral Fellow, Beirne B. Carter Center for Immunology Research, University of Virginia

Honors and Awards

2021 Certificate of Distinction, 6th Annual Student Supervisor of the Year Award, University of Iowa
2015 AAI Laboratory Travel Grant
2014 AAI Careers in Immunology Fellowship (Allison Christiaansen)
2013 AAI Laboratory Travel Grant
2006-2007 American Heart Association Heartland Affiliate Beginning Grant-in-Aid
2004-2005 American Lung Association of Illinois-Iowa Research Fellowship
2002-2005 Parker B. Francis Fellowship in Pulmonary Research
2002-2003 American Lung Association, Virginia Thoracic Society Research Grant
2000-2002 National Research Service Award (NIH F32 HL10446)
2000-2002 American Lung Association, Virginia Thoracic Society Research Fellowship
1999-2000 Post-doctoral Fellowship (NIH T32 AI07496)
1995-1997 Pre-doctoral Fellowship (NIH T32 AI07349)

Administrative Appointments and Experience

2019-present Associate Dean, Graduate College, University of Iowa

- Currently serve as Administrative Team Lead and primary author of a successfully funded AAU PhD Education Initiative grant to create cultural change in doctoral education toward a more student-centered training and preparation for diverse career paths.
- Leverage relationship building as a means to create sustainable change and catalyze campus-wide initiatives to improve practice.
- Emphasize strategic long-term goal setting as demonstrated by leading the Graduate College to reinvest in national surveys, data collection and transparency coalitions, networks, and processes that improve student success.

- Dedicated to advancing graduate education through supporting efforts in diversity, equity and inclusion (DEI); graduate professional development; and interdisciplinary research and graduate programs.
- Demonstrate and practice responsible and balanced professionalism as a means to lead by example and teach it to others.
- Support an inclusive work environment by actively participating in DEI workshops and trainings such as the BUILD (Building University of Iowa Leadership for Diversity certificate program) and the Building Our Global Community training programs.
- Foster increasing collaboration between the Graduate College and the Center for Advancement to develop and implement short-term, such as the recent crowdfunding Tech Equity for Grad Students GOLDrush Campaign, as well as long-term philanthropic goals.
- Broadly work to elevate and highlight staff accomplishments from several key areas of the GC by nominating team members for various campus, local and national awards and recognitions.
- Foster continued efforts to actively engage alumni by helping to plan and organize our biannual meetings with the members of our Graduate College External Advisory Board.

2013-2018 Director, Interdisciplinary Graduate Program in Immunology, University of Iowa

- Exhibited a firm commitment to enhancing diversity, equity and inclusion by increasing the diversity of the support staff within the program as well as playing an active role in the recruitment and retention of students from underrepresented backgrounds. During my time as director the Immunology Graduate Program, we achieved an increase in both the number of applicants as well as the number of enrolled students from underrepresented backgrounds.
- Developed extensive experience in managing student academic and non-academic issues that can negatively impact student success.
- Gained an enhanced knowledge of the national landscape of graduate education by serving as a member of the American Association of Immunologists Education Committee.
- Developed organizational skills and team building skills as well as experience managing complex budgets.
- Enhanced student training in writing and communication skills through the addition of new courses and adjustments within coursework to further emphasize and develop these critical proficiencies.

Teaching and Mentoring

Courses Taught (University of Iowa, 2003-present)
Survey of Immunology, Graduate Survey of Immunology, Advanced Topics in Immunology, Introduction to Animal Viruses, Immunology Seminar Course, Graduate Immunology I, Topics in Virology Literature, Seminar in Microbiology, Medical Immunology, Case-Based Learning II, Immunology and Human Disease, Graduate Immunology and Human Disease, Scholarly Integrity/Responsible Conduct of Research I, Pharmacy Microbiology.

Mentor for 3 Postdoctoral fellows and 2 MD fellows
Dissertation Mentor for 8 doctoral students; Member on 41 MS or PhD dissertation committees
Undergraduate Research Mentor for 13 students

Invited Lectures
2020 Louisiana Lung Conference 2020 (Virtual), Louisiana State University, Baton Rouge, LA.

2019 Pontificia Universidad Católica De Chile, Santiago, Chile.
2018 Iowa State University, Ames, IA.
2018 Mayo Clinic, Rochester, MN.
2018 Pontificia Universidad Católica De Chile, Santiago, Chile.
2017 Pontificia Universidad Católica De Chile, Santiago, Chile.
2017 University of Rochester, Rochester, NY.
2017 Pfizer, Pearl River, NY.
2017 University of Virginia, Charlottesville, VA.
2017 Baylor College of Medicine, Houston, TX.
2016 AAI Introductory Course in Immunology, Long Beach, CA.
2015 AAI Introductory Course in Immunology, Long Beach, CA.
2015 University of Cincinnati, Cincinnati, OH.
2015 Oklahoma State University, Sillwater, OK.
2014 Pontificia Universidad Católica De Chile, Santiago, Chile.
2013 University of Missouri, Columbia, MO.
2013 International Vaccine Institute, Seoul, Korea.
2013 University of Massachusetts Medical School, Worcester, MA.
2012 American Thoracic Society Postgraduate Course, Pulmonary Adaptive Immunity: More Than Just Crossing Your T's, San Francisco, CA.
2012 University of Georgia, Athens, GA.
2011 AAI Advanced Course in Immunology, Minneapolis, MN.
2011 Fundación INFANT, Buenos Aires, Argentina.
2011 Wake Forrest University School of Medicine, Winston-Salem, NC.
2011 Indiana University School of Medicine, Indianapolis, IN.
2011 MedImmune, Mountain View, CA.
2008 Michigan State University, East Lansing, MI.
2007 University of Massachusetts Medical School, Worcester, MA.
2004 Iowa State University College of Veterinary Medicine, Ames, IA.

Invited Conference Presentations

2018 11th International Respiratory Syncytial Virus Symposium, Asheville, NC.
2018 Cytokines 2018, Boston, MA.
2017 XL Annual Meeting of the Chilean Biochemistry and Molecular Biology Society, Puerto Varas, Chile.
2016 10th International Respiratory Syncytial Virus Symposium, Patagonia, Argentina.
2016 Nanovaccine Initiative Annual Meeting, Iowa State University, Ames, IA.
2015 RSV Vaccines for the World International Symposium, La Jolla, CA.
2014 XXXVI Annual Meeting of the Microbiology Society of Chile, La Serena, Chile.
2014 9th International Respiratory Syncytial Virus Symposium, Cape Town, South Africa.
2013 RSV Vaccines for the World International Symposium, Porto, Portugal.
2013 KMB's 40th Anniversary 2013 International Symposium and Annual Meeting of the Korean Society for Microbiology and Biotechnology, Pyeongchang, Korea.
2012 The American College of Veterinary Pathologists 63rd Annual Meeting, Seattle, WA.
2012 Biology of Acute Respiratory Infection Gordon Conference, Ventura, CA.
2010 7th International Respiratory Syncytial Virus Symposium, Rotterdam, Netherlands.
2009 6th International Eosinophil Symposium, Bruges, Belgium.
2009 Acute Respiratory Infections (ARI) Panel of the U.S.-Japan Cooperative Medical Science Program, Chiba, Japan.
2003 10th Annual Midwest Microbial Pathogenesis Conference, Iowa City, IA.

Conference Session Chair

2019 Co-Chair, "Immune Response to Respiratory Viruses," Block Symposium, Immunology 2019, Annual AAI Meeting, San Diego, CA.

2018 Co-Chair, “Myeloid Cells, Antigen Presentation, and Regulatory Factors During Virus Infections,” Block Symposium, Immunology 2018, Annual AAI Meeting, Austin, TX.
2017 Co-Chair, “Immune Response to Respiratory Viruses,” Block Symposium, Immunology 2017, Annual AAI Meeting, Washington, DC.
2016 Co-Chair, “Respiratory Viruses and the Host Immune Response,” Block Symposium, Immunology 2016, Annual AAI Meeting, Seattle, WA.
2015 Co-Chair, “T Cell Activation, Expansion, and Exhaustion During Viral Infection,” Block Symposium, Immunology 2015, Annual AAI Meeting, New Orleans, LA.
2015 Co-Chair, “Natural Killers, T cells, and the Immune Response to Viral Infection,” Block Symposium, Immunology 2015, Annual AAI Meeting, New Orleans, LA.
2014 Chair, “Adaptive Immunity Following RSV Infection” Session, 9th International Respiratory Syncytial Virus Symposium, Stellenbosch, South Africa.
2014 Co-Chair, “Respiratory Viruses and the Immune Response” Block Symposium, Immunology 2014, Annual AAI Meeting, Pittsburgh, PA.
2013 Chair, “Careers in Biotech: Panel Discussion and Networking,” Career Session, Immunology 2013, Annual AAI Meeting, Honolulu, HI.
2013 Co-Chair, “Respiratory Viruses and the Immune System: Part 2,” Block Symposium, Immunology 2013, Annual AAI Meeting, Honolulu, HI.
2012 Co-chair, “Adaptive Responses in Viral Infections”, Block Symposium, Immunology 2012, Annual AAI Meeting, Boston, MA.
2010 Chair, “Pathogenesis-1”, Session, 7th International Respiratory Syncytial Virus Symposium, Rotterdam, Netherlands.
2010 Chair, “Immune Response to Viruses II”, Session, 39th Annual Autumn Immunology Conference, Chicago, IL.
2009 Chair, “Immune Response to Viruses II”, Session, 38th Annual Autumn Immunology Conference, Chicago, IL.
2008 Chair, “Immune Response to Viruses II”, Session, 37th Annual Autumn Immunology Conference, Chicago, IL.
2008 Co-chair, “Vaccines and Immunotherapeutic Against Microbial Infections”, Block Symposium, Experimental Biology 2008, Annual AAI Meeting, San Diego, CA.
2007 Co-chair, “Immunology-Innate and Adaptive”, Session, 6th International Respiratory Syncytial Virus Symposium, Marco Island, FL.
2007 Chair, “Immune Response to Viruses”, Session, 36th Annual Autumn Immunology Conference, Chicago, IL.
2005 Chair, “Regulatory Mechanisms Modulating Immunity Against Infection”, Block Symposium, Experimental Biology 2005, Annual AAI Meeting, San Diego, CA.
2004 Chair, “Immune Response to Pathogens-Viruses”, Session, 33rd Annual Autumn Immunology Conference, Chicago, IL.

Scientific Meeting Organization

2017 Councilor for the Autumn Immunology Conference (AIC).
2016 Conference Chair for the Autumn Immunology Conference (AIC).
2015 Secretary for the Autumn Immunology Conference (AIC).
2015 Member, Scientific Advisory Panel, “RSV Vaccines for the World” meeting held in La Jolla, CA
2014 Workshop Coordinator for the Autumn Immunology Conference (AIC).
2014-present Abstract Programming Chair for Viral Immunology, Annual AAI Meeting.
2013 Member, Scientific Advisory Panel, “RSV Vaccines for the World” meeting held in Porto, Portugal.
2012 Co-organizer of the International RSV Symposium “RSV 2012 Meeting” held in Santa Fe, NM.
2011-2016 Elected member of the RSV 2012 Scientific Advisory Committee.
2011-2013 Liaison to Sponsors for the Autumn Immunology Conference (AIC) Executive Council.
2008-2009 Elected member of the Autumn Immunology Conference (AIC) General Council.

Journal Editorial Boards

2016-2020 Section Editor, Journal of Immunology.
2016-present Associate Editor, Frontiers in Cellular and Infection Microbiology.
2015-2016 Review Editor, Frontiers in Cellular and Infection Microbiology.
2013-2016 Guest Associate Editor, PLoS Pathogens.
2011-present Review Editor, Frontiers in Immunological Memory.
2011-present Academic Editor, PLOS ONE.
2011-2015 Associate Editor, Journal of Immunology.
2010-present Journal of Virology.

Grant Review Panels

2020-present Chair, Virology B Study Section (VIRB).
2018-2020 Standing Member and co-chair, Virology B Study Section (VIRB).
2015-2017 Chair of Study Section, NIH F07 Immunology Fellowship/AREA Panel.
2010-2015 Ad hoc Reviewer, NIH F07 Immunology Fellowship/AREA Panel.
2003-present Ad hoc Reviewer for various NIH study sections and International Grant Agencies.

Memberships in Professional Organizations

2003-present American Association of Immunologists (AAI).
2003-present American Society for Microbiology (ASM).

University of Iowa faculty committees and extra-departmental activities

2020-present Member, COVID-19 Academic Working Group.
2020-present Member, Data for Student Success Committee.
2019-present Member, Conflict of Interest in Research Committee.
2019 Member, Anatomy Department 7-Year Review Committee.
2019-present Member, MSTP Executive Committee.
2017-present Faculty Member of the Behavioral-Biomedical Interface Training Program.
2017-2019 Elected Member, Carver College of Medicine Executive Committee.
2017-2019 Chair, Carver College of Medicine Executive Committee.
2016-2019 At large member, Graduate Council.
2016-2019 Member, MSTP Admissions Committee.
2016 Co-facilitate New Faculty Orientation session, “Peer Coaching for Tenure Track Faculty”.
2016 Faculty Marshal, Spring Graduate College Commencement Ceremony.
2016 Member, Search Committee for the Director of the Biomedical Science Program.
2016 Co-facilitate New Faculty Orientation session, “Peer Coaching for Tenure Track Faculty”.
2015 Co-facilitate New Faculty Orientation session, “Peer Coaching for Tenure Track Faculty”.
2015-2016 Member, Graduate College Task Force, Biological and Life Sciences subcommittee.
2015-2017 Appointed Member, Carver College of Medicine Executive Committee.
2015 Co-facilitate New Faculty Orientation session, “Peer Coaching for Tenure Track Faculty”.
2013 Co-facilitate junior faculty development session, “Creating a focus in Academic Medicine: What is your area of Scholarship/Productivity?”
2012-2014 Judge for Poster Center for Immunology & Immune-Based Diseases Annual Retreat.
2013 Faculty Member of CCOM IDP Working Group Committee.
2013-2018 Director, Interdisciplinary Graduate Program in Immunology.
2013-2017 Faculty Member of CCOM HCIS Mac Action Team.
2010-2013 Chair of the Interdisciplinary Graduate Program in Immunology Curriculum Committee.
2009 Member of the Scholarly Integrity Task Force.
2008-2010 Member of the Interdisciplinary Graduate Program in Immunology Curriculum Committee.

2008-2019 Member of Interdisciplinary Graduate Program in Immunology Executive Committee (elected by peers in 2008 & 2011).
2008-2012 Faculty Member, Advisory Group for the Basic Sciences IT.
2008 Faculty Member of a Committee to review the Educational Space AV Issues in BSB.
2008 Session chair for Immunology/Parasitism Retreat.
2007 Facilitator for MSTP Conversations in Research.
2007-2011 Judge for Posters in the Postdoctoral Fellows, Residents and Research Assistants Poster Session of CCOM/CPH/VA Iowa City Health Care System Research Week.
2007 IT Strategic Planning Focus Group.
2006-2008 Member of Graduate Program in Immunology Comprehensive Exam Committee.
2006-2009 Member of the College of Liberal Arts & Sciences Faculty Assembly.
2006-present Faculty Member of the Medical Scientist Training Program (MSTP).
2005-2006 Helen B. Levitt Virology Center Coordinator for Weekly Journal Club.
2005-present Flow Cytometry Facility Advisory Committee.
2005-2009 Biosafety Level 3 Facility Advisory Committee.
2005 Judge 7th Annual James F. Jakobsen Graduate Forum.
2005 Judge, University of Iowa Undergraduate Scientific Poster Competition.
2005-present Interview Prospective Graduate Students for the MSTP.
2005-2015 Interview Prospective Graduate Students for the Bioscience Program.
2004-present Interview Prospective Graduate Students for the Interdisciplinary Graduate Program in Immunology.
2004-present Faculty Member of the Interdisciplinary Graduate Program in Immunology.
2003-present Faculty Member of the Holden Comprehensive Cancer Center.

Department of Microbiology committees and activities

2017-2018 Serve on Internal Peer Review Committee for faculty promotion review.
2013 Poster Judge for Undergraduate Poster Session during Research Week
2011 Member, Search committee for Virology faculty position.
2009 Member, Search committee for Virology faculty position.
2009 Department of Microbiology representative for the College of Medicine's Commencement ceremony.
2007 Microbiology Outcomes Assessment Plan Committee.
2006 Member, Search committee for Immunology faculty position.
2005-2006 Comprehensive Examination Review Committee.
2005-2017 Undergraduate Academic Advisor.
2004-2005 Member, Admissions committee.
2003-2005 Secretary.

National Service

2021-present Member, CSR Working Group, Bias Awareness Training for Reviewers, SROs, NIH.
2020-present Elected member, American Association of Immunologists (AAI) Publications Committee.
2019-2021 Member, AAI Curriculum Ad Hoc Committee.
2018-present Standing member and Chair (beginning in 2020), Virology B Study Section, National Institutes of Health.
2017 Faculty Facilitator, Careers in Science Roundtable, Immunology 2017, Annual AAI Meeting, Washington, DC.
2016 Faculty Facilitator, Careers in Science Roundtable, Immunology 2016, Annual AAI Meeting, Seattle, WA.
2015 Faculty Facilitator, Careers in Science Roundtable, Immunology 2015, Annual AAI Meeting, New Orleans, LA.
2014-present Coordinator, AAI Grant Review for Immunologists Program (GRIP).
2012-2018 Member, AAI Education Committee.

Community Service

2018	Hosted 2 local high school students in the Workplace Learning Connection's Job Shadowing Program.
2017	Hosted 4 local high school students in the Workplace Learning Connection's Job Shadowing Program.
2005	Health Sciences Campus Tour-Department of Microbiology for North Cedar High School Students

Professional Development

2021	Building Our Global Community certificate program (in progress).
2021	Practical Applications of Supervisory Skills (PASS) certificate program (expected completion April, 2021).
2021	Completed Building University of Iowa Leadership for Diversity (BUILD) certificate program.
2018-2019	Big Ten Academic Alliance Academic Leadership Program Fellow.
2018	Completed Supervising@Iowa Certificate Program.
2018	Attended Melissa Marshall communications training workshop, Talk Nerdy to Me: Presenting Your Science to the Public.
2018	Attended Melissa Marshall communications training workshop, Show Your Science: Visual Aids for Technical Talks.
2017	Attended Planning & Writing Successful Grant Proposals Seminar.
2014	Attended Associate Professors: Building a Regional, National and/or International Reputation.
2014	Attended Mid-career Tenure & Research Track Faculty: Pursuing Leadership Roles that Foster Individual Achievement and Institutional/Department Success.
2012	Attended How Success is Measured for Associate Professors: A Conversation with Chairs.

PUBLICATIONS

Complete List of Published Work in MyBibliography:
http://www.ncbi.nlm.nih.gov/sites/myncbi/1lixx9iKaneQB/bibliography/40475282/public/?sort=date&direction=descending

Peer-reviewed papers:

1. **Varga, S. M.** and R. M. Welsh. 1996. The CD45RB-associated epitope defined by monoclonal antibody CZ-1 is an activation and memory marker for mouse $CD4^+$ T cells. *Cell Immunol*. 167: 56-62.

2. Selin, L. K., **S. M. Varga**, I. C. Wong and R. M. Welsh. 1998. Protective heterologous antiviral immunity and enhanced immunopathogenesis mediated by memory T cell populations. *J Exp Med*. 188: 1705-1715.

3. **Varga, S. M.** and R. M. Welsh. 1998. Stability of virus-specific $CD4^+$ T cell frequencies from acute infection into long term memory. *J Immunol*. 161: 367-374.

4. **Varga, S. M.** and R. M. Welsh. 1998. Cutting edge: detection of a high frequency of virus-specific $CD4^+$ T cells during acute infection with LCMV. *J Immunol*. 161: 3215-3218.

5. Selin, L. K., M. Y. Lin, K. A. Kraemer, D. M. Pardoll, J. P. Schneck, **S. M. Varga**, P. A. Santolucito, A. K. Pinto and R. M. Welsh. 1999. Attrition of T cell memory: selective loss of lymphocytic choriomeningitis virus (LCMV) epitope-specific memory CD8 T cells following infections with heterologous viruses. *Immunity* 11: 733-742.

6. **Varga, S. M.** and R. M. Welsh. 2000. High frequency of virus-specific IL-2-producing $CD4^+$ T cells and Th1 dominance during LCMV infection. *J Virol*. 74: 4429-4432.

7. **Varga, S. M.**, E. L. Wissinger and T. J. Braciale. 2000. The attachment (G) glycoprotein of respiratory syncytial virus contains a single immunodominant epitope that elicits both Th1 and Th2 $CD4^+$ T cell responses. *J Immunol*. 165: 6487-6497.

8. **Varga, S. M.**, L. K. Selin and R. M. Welsh. 2001. Independent regulation of lymphocytic choriomeningitis virus-specific T cell memory pools: relative stability of CD4 memory under conditions of CD8 memory T cell loss. *J Immunol*. 166: 1554-1561.

9. **Varga, S. M.**, X. Wang, R. M. Welsh and T. J. Braciale. 2001. Immunopathology in RSV infection is mediated by a discrete oligoclonal subset of antigen-specific $CD4^+$ T cells. *Immunity* 15: 637-646.

10. **Varga, S. M.**, N. A. Beckman, M. Chu and T. J. Braciale. 2002. Sensitive detection and quantitation of mouse eosinophils in tissues using an enzymatic eosinophil peroxidase assay: its use to rapidly measure pulmonary eosinophilia during experimental respiratory syncytial virus infection of mice. *J Immunol Methods* 262: 111-120.

11. Johnson, T.R., **S. M. Varga,** T. J. Braciale and B. S. Graham. 2004. $V\beta14^+$ T cells mediate the vaccine-enhanced disease induced by immunization with RSV G glycoprotein but not with formalin-inactivated RSV. *J Virol*. 78: 8753-8760.

12. Haring, J. S., V. P. Badovinac, M. R. Olson, **S. M. Varga** and J. T. Harty. 2005. *In vivo* generation of pathogen-specific T_H1 cells in the absence of the IFN-γ receptor. *J Immunol*. 175: 3117-3122.

13. Ramaswamy, M., L. Shi, **S. M Varga**, S. Barik, M.A. Behlke and D. C. Look. 2006. Respiratory syncytial virus nonstructural protein 2 specifically inhibits type I interferon signal transduction. *Virology* 344: 328-339.

14. Monick, M. M., L. S. Powers, I. Hassan, D. Groskreutz, T. O. Yarovinsky, C. W. Barrett, E. M. Castilow, D. Tifrea, **S. M. Varga** and G. W. Hunninghake. 2007. Respiratory syncytial virus synergizes with Th2 cytokines to induce optimal levels of TARC/CCL17. *J Immunol*. 179: 1648-1658.

15. Groskreutz, D. J., M. M. Monick, T. O. Yarovinsky, L. S. Powers, D. E. Quelle, **S. M. Varga**, D. C. Look and G. W. Hunninghake. 2007. Respiratory syncytial virus decreases p53 protein to prolong survival of airway epithelial cells. *J Immunol*. 179: 2741-2747.

16. Olson, M. R. and **S. M. Varga**. 2007. CD8 T cells inhibit respiratory syncytial virus (RSV) vaccine-enhanced disease. *J Immunol*. 179: 5415-5424.

17. Castilow, E. M., D. K. Meyerholz and **S. M. Varga**. 2008. IL-13 is required for eosinophil entry into the lung during respiratory syncytial virus vaccine-enhanced disease. *J Immunol*. 180: 2376-2384.

18. Castilow, E. M., M. R. Olson, D. K. Meyerholz and **S. M. Varga**. 2008. Differential role of gamma interferon in inhibiting pulmonary eosinophilia and exacerbating systemic disease in fusion protein-immunized mice undergoing challenge infection with respiratory syncytial virus. *J Virol*. 82: 2196-2207.

19. Wissinger, E. L., W. W. Stevens, **S. M. Varga** and T. J. Braciale. 2008. Proliferative expansion and acquisition of effector activity by memory $CD4^+$ T cells in the lungs following pulmonary virus infection. *J Immunol*. 180: 2957-2966.

20. Fulton, R. B., M. R. Olson and **S. M. Varga**. 2008. Regulation of cytokine production by virus-specific CD8 T cells in the lung. *J Virol*. 82: 7799-7811.

21. Meyerholz, D. K., J. Rodgers, E. M. Castilow and **S. M. Varga**. 2009. Alcian blue and pyronine Y histochemical stains permit assessment of multiple parameters in pulmonary disease models. *Vet Pathol*. 46: 325-328.

22. Castilow, E. M., K. L. Legge and **S. M. Varga**. 2008. Cutting Edge: eosinophils do not contribute to respiratory syncytial virus vaccine-enhanced disease. *J Immunol*. 181: 6692-6696.

23. Olson, M. R., S. M. Hartwig and **S. M. Varga**. 2008. The number of respiratory syncytial virus (RSV)-specific memory CD8 T cells in the lung is critical for their ability to inhibit RSV vaccine-enhanced pulmonary eosinophilia. *J Immunol*. 181: 7958-7968.

24. Olson, M. R. and **S. M. Varga**. 2008. Fas ligand is required for the development of respiratory syncytial virus vaccine-enhanced disease. *J Immunol*. 182: 3024-3031.

25. Meyerholz, D. K., M. A. Griffin, E. M. Castilow and **S. M. Varga**. 2009. Comparison of histochemical methods for murine eosinophil detection in an RSV vaccine-enhanced inflammation model. *Toxicol Pathol.* 37: 249-255.

26. Groskreutz, D. J., M. M. Monick, E. C. Babor, T. Nyunoya, **S. M. Varga,** D. C. Look and G. W. Hunninghake. 2009. Cigarette smoke alters respiratory syncytial virus-induced apoptosis and replication. *Am J Respir Cell Mol Biol*. 41: 189-198.

27. Khanolkar, A., S. M. Hartwig, B. A. Haag, D. K. Meyerholz, J. T. Harty and **S. M. Varga**. 2009. Toll-like receptor 4 deficiency increases disease and mortality after mouse hepatitis virus type 1 infection of susceptible C3H mice. *J Virol*. 83: 8946-8956.

28. Olivier, A., J. Gallup, M. de Macedo, **S. M. Varga** and M. Ackermann. 2009. Human respiratory syncytial virus A2 strain replicates and induces innate immune responses by respiratory epithelia of neonatal lambs. *Int J Ex. Pathol*. 90: 431-438.

29. Khanolkar, A., S. M. Hartwig, B. A. Haag, D. K. Meyerholz, L. L. Epping, J.S. Haring, **S. M. Varga** and J. T. Harty. 2009. Protective and pathologic roles of the immune response to mouse hepatitis virus type 1: implications for severe acute respiratory syndrome. *J Virol*. 83: 9258-9272.

30. Khanolkar, A., Fulton, R.B., L. L. Epping, N. L. Pham, D. Tifrea, **S. M. Varga** and J. T. Harty. 2010. T cell epitope specificity and pathogenesis of mouse hepatitis virus-1-induced disease in susceptible and resistant hosts. *J Immunol*. 185: 1132-1141.

31. Groskreutz, D.J., E. C. Babor, M. M. Monick, **S. M. Varga** and G. W. Hunninghake. 2010. Respiratory syncytial virus limits a subunit of eukaryotic translation initiation factor 2 (eIF2α) phosphorylation to maintain translation and viral replication. *J Biol Chem*. 285: 24023-24031.

32. Fulton, R. B., D. K. Meyerholz and **S. M. Varga**. 2010. $Foxp3^+$ CD4 regulatory T cells limit pulmonary immunopathology by modulating the CD8 T cell response during respiratory syncytial virus infection. *J Immunol*. 185: 2382-2392.

33. Weiss, K. A., A. F. Christiaansen, R. B. Fulton, D. K. Meyerholz and **S. M. Varga**. 2011. Multiple $CD4^+$ T cell subsets produce immunomodulatory interleukin-10 during respiratory syncytial virus infection. *J Immunol*. 187: 3145-3154.

34. McDermott, D. S. and **S. M. Varga**. 2011. Quantifying antigen-specific CD4 T cells during a viral infection: CD4 T cell responses are larger than we think. *J Immunol*. 187: 5568-5576.

35. Olson, M. R., D. S. McDermott and **S. M. Varga**. 2012. The initial draining lymph node primes the bulk of the CD8 T cell response and influences memory T cell trafficking after a systemic viral infection. *PLoS Pathog*. 8: e10003054.

36. Klesney-Tait, J., K. Keck, X. Li, S. Gilfillan, K. Otero, S. Baruah, D. K. Meyerholz, **S. M. Varga**, C. J. Knudson, T. O. Moninger, J. Moreland, J. Zabner and M. Colonna. 2013. Transepithelial migration of neutrophils into the lung requires TREM-1. *J Clin Invest*. 123: 138-149.

37. Alsuwaidi, A. R., M. T. Alsamri, A. S. Alfazari, S. Almarzooqi, A. Albawardi, A. R. Othman, T. Pramathan, S. M. Hartwig, **S. M. Varga** and A. K. Souid. 2013. Lung tissue bioenergetics and caspase activity in rodents. *BMC Res Notes* 6: 12.

38. Alsuwaidi, A. R., S. Benedict, J. Kochiyil, F. Mustafa, S. M. Hartwig, S. Almarzooqi, A. Albawardi, T. A. Rizvi, **S. M. Varga** and A. K. Souid. 2013. Bioenergetics of murine lungs infected with respiratory syncytial virus. *Virol J*. 10: 22.

39. Whitmore, L. C., B. M. Hilkin, K. L. Goss, E. M. Wahle, T. T. Colaizy, P. M. Boggiatto, **S. M. Varga,** F. J. Miller and J. G. Moreland. 2013. NOX2 protects against prolonged inflammation, lung injury, and mortality following systemic insults. *J Innate Immun*. 5: 565-580.

40. Alsuwaidi, A. R., S. Almarzooqi, A. Albawardi, S. Benedict, J. Kochiyil, F. Mustafa, S. M. Hartwig, **S. M. Varga** and A. K. Souid. 2013. Cellular bioenergetics, caspase activity and glutathione in murine lungs infected with influenza A virus. *Virology* 446: 180-188.

41. Fulton, R. B., K. A. Weiss and **S. M. Varga**. 2013. Aged mice exhibit a severely diminished CD8 T cell response following respiratory syncytial virus infection. *J Virol*. 87: 12694-12700.

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Patent Applications

1. U.S. Patent Application N. 16/666,214. Respiratory Syncytial Virus (RSV) Polyanhydride Nanoparticle Vaccine. Inventors: Steven M. Varga, Kevin L. Legge.

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