

Scott Michael Tanner
Curriculum Vitae

Assistant Professor of Biology
Division of Natural Sciences & Engineering
University of South Carolina Upstate
ORCID ID: 0000-0002-7717-5293

800 University Way
Spartanburg, SC 29303
(864) 503-5048
ST29@uscupstate.edu

Academic Appointments

Year	Rank/Title	Institution
2019-Present	Assistant Professor of Biology - Division of Natural Sciences & Engineering	University of South Carolina Upstate, Spartanburg, SC
2017-2019	Lecturer – Department of Genetics & Biochemistry	Clemson University Clemson, SC
2014-2017	Assistant Professor – Department of Biological, Physical and Earth Sciences	Limestone College, Gaffney, SC
2013-2014	Postdoctoral Fellow – Departments of Pediatric Surgery and Pathology	Univ. of Alabama at Birmingham, Birmingham, AL
2012-2014	Adjunct Faculty	University of Montevallo, Montevallo, AL
2012-2013	Postdoctoral Fellow – Department of Microbiology	Univ. of Alabama at Birmingham, Birmingham, AL

Education

Institution	Degree	Year
University of Alabama at Birmingham	Ph.D. (Molecular & Cellular Pathology)	2012
Indiana University Bloomington	B.S. (Biology)	2007

Teaching Effectiveness

Courses Taught:

2019-Present: University of South Carolina Upstate

- BIOL101L: Introductory Biology Laboratory
- BIOL206: Genetics & Society
- BIOL244L: Anatomy & Physiology II Laboratory
- BIOL302L: Introduction to Cellular and Molecular Biology Laboratory
- BIOL350: Genetics
- BIOL350L: Genetics Laboratory
- BIOL507: Developmental Biology
- BIOL507L: Developmental Biology Laboratory
- BIOL599: Senior Seminar

2017-2019: Clemson University

- GEN/BCHM 3040: Molecular Biology Laboratory
- GEN4100: Population & Quantitative Genetics
- GEN4110: Population & Quantitative Genetics Laboratory
- GEN4210: Molecular Genetics & Gene Regulation Laboratory

2014-2017: Limestone College

- BI101: Introductory Biology 1

- BI110: Fundamentals of Biology
- BI114: Human Biology
- BI211: Anatomy and Physiology II
- BI282: Genetics
- BI315/CH315: Biochemistry
- BI320: Immunology

2012-2014: University of Montevallo

- BIO100: Principles of Biology

Mentoring:

Undergraduate Students (USC Upstate Students in **Bold**): **Autumn Boykin, Diamond Braxton, Noel Bynum, MaKenna DeYoung, Jennifer Ethridge, Lyndsey (Katie) Fields, Rhiannon Follweiler, Caleb Gosnell, Summer Johnson, Madeline Mcabee, Madison McNeill, Brittany Salciccioli, Mikayla Spangler,** Rycki Ebert, Matthew Nelson, George Green, Marguerite (Bree) Little, Felicia McGuire, Johnice Pearson, and Vanisha Yarbrough

Graduate Teaching Assistants: Arlyn Ackermen, Oly Ahmed, Garrett Buzzard, Yueyao Gao, Yuqing Hang, Allison Hickman, Emily Knight, Stephani Martinez-Barrera, Sarah Murphy, Anqi Wei

Post-baccalaureate Students: Diana Contreras, Stephanie Hill, and Zollie White

Graduate Students: Katie Alexander, Arun Rooj, Kushani Shah, and Dennis Steverson

Medical Students: Courtney Culbreath, James (Luke) Ellenburg, and Sarah Gilmore

Medical Fellows: Philip Tatum, MD and Mem Zolak, MD

Professional Development (Teaching):

2023	Quality Matters Certification (BIOL206 – Genetics & Society)
2022	USC Upstate Center for Academic Innovation and Faculty Support Inclusive Teaching Certificate
2020-2021	USC Upstate Center for Academic Innovation and Faculty Support Engaged Pedagogy and Hybrid Course Design Institute Fellow
2020	USC Upstate Center for Academic Innovation and Faculty Support Online Communication Course
2020	Genomics Education Partnership Training
2020	CRISPR in the Classroom Workshop
2018	STEM Faculty Learning Community (Clemson University)
2018	Transparency in Teaching & Learning Training Program (Clemson University Office of Teaching Excellence & Innovation)
2012-2013	American Society for Microbiology-Burroughs Wellcome Fund Science Teaching Fellow

Awards & Honors (Teaching)

2024	Nomination for College of Science & Technology Excellence in Teaching & Advising Award
2023	College of Science & Technology Excellence in Teaching & Advising Award
2022	Nomination for College of Science & Technology Excellence in Teaching & Advising Award
2015	Fullerton Foundation Excellence in Teaching Award – Limestone College

2014	Ralph D. Lillie Memorial Award, The Histochemical Society
2013	American Society for Microbiology Conference for Undergraduate Educators Early-Career Faculty Travel Award
2007-2012	Howard Hughes Medical Institute Med into Grad Fellow
2010-2012	Marie and Emmett Carmichael Fund for Graduate Students in Biosciences
2012	Outstanding Student, Doctoral Level; Molecular and Cellular Pathology Graduate Program (UAB)
2012	Ralph D. Lillie Memorial Award, The Histochemical Society
2010	American Association of Immunologists International Congress of Immunologists Travel Grant (2010 International Congress of Immunology, Kobe, Japan)
2007	Fox Glen Research & Education Fund Departmental Award

Scholarly Activities

Manuscripts (Undergraduate Researcher, USC Upstate Student*)

1. Lopatto D, Silver Key SC, Van Stry M, Leung W, **Tanner SM**, Rele CP, Reed LK. Supporting the democratization of science during a pandemic: genomics Course-based Undergraduate Research Experiences (CUREs) as an effective remote learning strategy. *Journal of Microbiology and Biology Education*. 2023. 24(3). DOI: 10.1128/jmbe.00039-23.
2. **Tanner SM**, Lorenz RG. FVB/N mouse strain regulatory T cells differ in phenotype and function from the C57BL/6 and BALB/c strains. *FASEB BioAdvances*. 2023. 4(10) 648-661. DOI: 10.1096/fba.2021-00161.
3. Kubera C, Nivillac NMI, **Tanner S**, Le P, Begde D, Wolyniak MJ, Challa AK. 2022. Workshop Report: Virtual CRISPR in the Classroom. CourseSource. <https://doi.org/10.24918/cs.2022.17>
4. **Tanner SM**, Daft JG, Hill SA, Martin CA, Lorenz RG: Altered T Cell Balance in Lymphoid Organs of a Mouse Model of Colorectal Cancer. *Journal of Histochemistry and Cytochemistry*. 2016. 64(12). 753-767. PMID: 27798287.
5. **Tanner SM**, Segarra VA: Comparing outdated and updated textbook figures helps introduce undergraduates to primary literature. *Journal of Microbiology and Biology Education*. 2015. 16(1). 90-2. PMID: 25949767
6. Culbreath CC, **Tanner SM**, Yeramilli VA, Berryhill TF, Lorenz RG, Martin CA. Environmental-mediated intestinal homeostasis in neonatal mice. *Journal of Surgical Research*. 2015. 198(2). 494-501. PMID: 25940157.
7. **Tanner SM**, Berryhill TF, Ellenburg JL, Jilling T, Cleveland DS, Lorenz RG, Martin CA: Pathogenesis of Necrotizing Enterocolitis: Modeling the Innate Immune Response. *American Journal of Pathology*. 2015. 185(1). 4-16. PMID: 25447054
8. Wolf KJ, **Tanner SM**, Hartmann R, Khafipour E, Lorenz RG: Consumption of Acidic Liquids Alters the Gut Microbiome and Decreases the Risk of Type 1 Diabetes. *Journal of Histochemistry and Cytochemistry*. 2014. 62(4). 237-50. PMID: 24453191
9. **Tanner SM**, Staley EM, Lorenz RG: Decreased regulatory T cell numbers in the intestine precede the development of colitis in the FVB.*mdr1a*^{-/-} mouse. *Mucosal Immunology*. 2013. 6(2). 309-23. PMID: 22874899
10. Staley EM, **Tanner SM**, Daft JG, Stanus AL, Lorenz RG: Maintenance of host leukocytes in peripheral immune compartments following lethal irradiation and bone marrow reconstitution: Implications for graft versus host disease. *Transplant Immunology*. 2013. 28(2). 112-19. PMID: 23334064

11. Staley EM, Yarborough VR, Schoeb TR, Daft JG, **Tanner SM**, Steverson D Jr, and Lorenz, RG: Murine P-glycoprotein Deficiency Alters Intestinal Injury and Repair and Blunts Lipopolysaccharide-Induced Radioprotection. *Radiation Research*. 2012. 178(3). 207-16. PMID: 22780103
12. Schmitz JM, Durham CG, Schoeb TR, Soltou TD, Wolf KJ, Tanner SM, McCracken VM, Lorenz RG: *Helicobacter felis*-Associated Gastric Disease in Microbiota-Restricted Mice. *Journal of Histochemistry and Cytochemistry*. 2011. 59(9). 826-41. PMID: 21852692
13. Staley EM, Dimmitt RA, Schoeb TR, **Tanner SM**, Lorenz RG: Critical role for P-glycoprotein expression in hematopoietic cells in the FVB.*mdr1a*^{-/-} model of colitis. *Journal of Pediatric Gastroenterology and Nutrition*. 2011. 53(6): 666-73. PMID: 21681110
14. Xu X, Jackson PL, **Tanner SM**, Hardison MT, Roda MA, Blalock JE, Gaggar G: A Self-Propagating Matrix Metalloprotease-9 (MMP-9) Dependent Cycle of Chronic Neutrophilic Inflammation. *PLoS ONE*. 2011. 6: e15781. PMID: 21249198
15. Dimmitt RA, Staley EM, Chuang G, **Tanner SM**, Soltau, TD, and Lorenz RG: Role of Postnatal Acquisition of the Intestinal Microbiome in the Early Development of Immune Function. *Journal of Pediatric Gastroenterology and Nutrition*. 2010. 51(3): 262-73. PMID: 20639773

Oral Presentations (Undergraduate Researcher, *USC Upstate Student)

1. “Pgp-1 deficiency results in intestinal defects in *C. elegans*, modeling human disease.” *DeYoung MJ, *Johnson SJ, *Spangler MC, *Follweiler RL, and **Tanner SM**. Tissue, Matrix & Pathobiology. Salt Lake City, UT. October 22-25, 2023
2. “Modeling inflammatory bowel disease using p-glycoprotein deficient *C. elegans*”. *Saliccioli BS and **Tanner SM**. SC-INBRE Science Symposium (1/23/21, Virtual) and SC Upstate Research Symposium (4/9/21, Virtual)
3. “Increased Rates of Wound Healing in MDR1 Deficient Cells”. *Gosnell CM and **Tanner SM**. SC-INBRE Science Symposium (1/23/21, Virtual) and SC Upstate Research Symposium (4/9/21, Virtual)
4. “How do we talk scientifically to non-scientists?”. Clemson University SciWeek., Clemson, SC, USA. 2018.
5. “Comparing outdated and updated textbook figures helps introduce undergraduates to primary literature.” American Society for Microbiology Conference of Undergraduate Educators. Austin, TX, USA. 2015.
3. “Speed Networking Session – Thriving as and Early Career Educator: Integrating Teaching and Research.” American Society for Microbiology Conference for Undergraduate Educators. Austin, TX, USA. 2015.
4. “Altered T Cell Balance in Lymphoid Organs of a Mouse Model of Colorectal Cancer.” Experimental Biology 2014, San Diego, CA, USA. 2014.
5. “Decreased regulatory T cell numbers in the intestine precede the development of colitis in the FVB.*mdr1a*^{-/-} mouse.” The Histochemical Society: 63rd Annual Meeting, Woods Hole, MA. 2012.
6. “Where did all the Tregs go? Failure to induce regulatory T cells leads to colitis”. Piedmont College Natural Science Seminar Series. Piedmont College, Demorest, GA. 2012
7. “Altered intestinal homing molecule expression prevents effective Treg trafficking in the FVB.*mdr1a*^{-/-} model of colitis.” 14th International Congress of Immunology. Kobe, Japan. 2010.

8. “Fewer Foxp3⁺ regulatory T cells in the intestines of FVB.*mdr1a*^{-/-} mice may result in colitis.” University of North Carolina Translational Medicine Symposium. Chapel Hill, NC, USA. 2010.

Poster Presentations (Undergraduate Researcher, *USC Upstate Student)

1. Altered nanoparticle uptake in p-glycoprotein deficient Caco-2 intestinal cells. **Spangler MC*, **Tanner SM**. South Carolina Upstate Research Symposium. Spartanburg, SC. April 12, 2024.
2. Pgp-1 deficiency results in intestinal defects in *C. elegans*, modeling human disease. **Boykin AG*, **DeYoung MJ*, **Ethridge JL*, **Johnson SL*, **Spangler MC*, **Tanner SM**. SC-INBRE Science Symposium. Columbia, SC. February 10, 2024
3. Increased wound healing rates in p-glycoprotein deficient intestinal cells. **Johnson SL*, **DeYoung MJ*, **Spangler MC*, **Follweiler RL*, and **Tanner SM**. Tissue, Matrix & Pathobiology. Salt Lake City, UT. October 22-25, 2023
4. Elgin S, Hays S, Croonquist P, Leung W, Lopatto D, Rele CP, **Tanner SM**, and Reed L. “The Genomics Education Partnership: Bringing Genomics Research into the Undergraduate Curriculum” Plant and Animal Genome 2023. 1/13/23-1/18/23. San Diego, CA
5. Investigation of Intestinal Disease using *Caenorhabditis elegans*. **DeYoung MJ*, **Johnson S*, **Spangler MC*, and **Tanner SM**. Poster. SC-INBRE Research Symposium (2/25/23, Columbia, SC)
6. Increased wound healing in p-glycoprotein deficient intestinal cells. **McNeill M*, and **Tanner SM**. Poster. SC Upstate Research Symposium (3/31/23, Spartanburg, SC)
7. Effects of p-glycoprotein deficiency on *Caenorhabditis elegans* intestinal development”. **Braxton DM*, **DeYoung MJ*, **Saliccioli BE*, and **Tanner SM**. Virtual Poster. Discover UofSC Summer Symposium (7/29/21)
8. P-glycoprotein deficiency results in intestinal developmental delay in *C. elegans* **DeYoung MJ*, **Braxton DM*, **Saliccioli BE*, and **Tanner SM**. Poster. SC Upstate Research Symposium (4/8/22, Spartanburg, SC)
9. P-glycoprotein deficiency results in intestinal developmental delay in *C. elegans*. **Saliccioli BE*, **DeYoung MJ*, **Braxton DM*, and **Tanner SM**. Poster Presentation. Experimental Biology 2022 (4/2/22-4/5/22, Philadelphia, PA)
10. Growing and Sustaining a Nationwide Course-based Undergraduate Research Experience (CURE): Genomics Education Partnership Enhances Research Opportunities at Diverse Institutions. Page ST, Goodman A, Merkhofer E, **Tanner SM**, Van Stry M, Lapatto D, Leung W, Reed LK. Experimental Biology (Virtual) 2021.
11. Mechanisms of intestinal damage in p-glycoprotein deficient *C. elegans*. *Saliccioli BS** and **Tanner SM**. Experimental Biology (Virtual) 2021.
12. Modeling intestinal disease using p-glycoprotein deficient *C. elegans*. *Saliccioli BS** and **Tanner SM**. Discover USC (Virtual). 2021.
13. **Tanner SM**, Lorenz RG. “Decreased regulatory T cell numbers in the intestine precede the development of colitis in the FVB.*mdr1a*^{-/-} mouse.” Digestive Diseases Week 2011. Chicago, IL, USA. 2011.
14. **Tanner, SM**, Lorenz, RG. “Altered intestinal homing molecule expression prevents effective Treg trafficking in the FVB.*mdr1a*^{-/-} model of colitis.” Immunology 2010; Baltimore, MD, USA. 2010.

15. **Tanner SM**, Staley EM, Lorenz RG. "Colitis in P-glycoprotein Deficient Mice is not an Intrinsic Defect in Regulatory T Cells". 14th International Congress of Mucosal Immunology; Boston, MA, USA. 2009.
16. Tatum P, Staley EM, **Tanner SM**, Lorenz RG, Dimmitt R. "The Role of TLR2 and TLR4 in Postnatal Intestinal Development". 14th International Congress of Mucosal Immunology; Boston, MA, USA. 2009.

Funded Grant Support:

Current:

- ER(Up)T Faculty Fellow/SC-INBRE – For Summer 2024

Completed:

- 2023 – ER(Up)T Faculty Fellow/SC-INBRE
- 2023 - Magellan Scholar & Magellan Mentors (with undergraduate Mikayla Spangler): "Measuring the mechanism of wound healing in multidrug resistance gene deficient human intestinal cells in the context of inflammatory bowel disease"
- 2023 - USC Upstate SARS Student Research Assistantship: "Measuring the mechanism of wound healing in multidrug resistance gene deficient human intestinal cells in the context of inflammatory bowel disease"
- 2023 – Histochemical Society Undergraduate Capstone Grant (with undergraduate Mikayla Spangler): "Measuring the mechanism of wound healing in multidrug resistance gene deficient human intestinal cells in the context of inflammatory bowel disease"
- 2022 – ER(Up)T Faculty Fellow/SC-INBRE
- 2022 – Magellan Scholar & Magellan Mentors (with undergraduate MaKenna DeYoung) – Investigating intestinal health of P-glycoprotein deficient *C. elegans*.
- 2022 – Histochemical Society Undergraduate Capstone Grant (with undergraduate MaKenna DeYoung): "Investigating Intestinal Health of P-glycoprotein Deficient *C. elegans*"
- 2022 – SC-INBRE Instrument Request Grant: "Acquisition of a Flow Cytometer to Expand Research Capabilities at USC Upstate"
- 2022 - USC Research Initiative for Summer Engagement: "Impact of increased wound healing in MDR-deficient intestinal cells as a model for inflammatory bowel disease"
- 2021 – USC Advanced Support for Innovative Research Excellence (ASPIRE) – I "Investigation of P-glycoprotein Deficiency on the Development of Caenorhabditis elegans as a Model for Human Necrotizing Enterocolitis"
- 2021 – USC Research Initiative for Summer Engagement (RISE): "Impact of P-glycoprotein Deficiency on the Development of Caenorhabditis elegans as a Model for Human Intestinal Disease"
- 2020-2021 - USC Upstate SARS Scholarly Startup Program "Using MDR Deficiency to Investigate the Importance of Tight Junctional Proteins in the Development of Inflammatory Bowel Disease"
- 2020 - Histochemical Society Undergraduate Capstone Grant (with undergraduate Brittany Salciccioli): "Immunohistochemical analysis of intestinal damage due to P-glycoprotein deficiency in *C. elegans*"
- 2020 - USC Research Initiative for Summer Engagement (RISE): "Gene Expression Analysis of Multidrug Resistance Gene Deficient Intestinal Cells during Wound Healing"
- 2020 - USC Upstate SARS Magellan Mentors Program (Magellan Scholar: Brittany Salciccioli) "Modeling

Inflammatory Bowel Disease using P-glycoprotein deficient *C. elegans*”

- 2020 - USC Upstate SARS Student Assistant Program (Caleb Gosnell), “Investigation of the relationship between tight junctional proteins and the multidrug resistance gene in the development of Inflammatory Bowel Disease”
- 2020 - USC Upstate SARS Student Assistant Program (Lyndsey Fields), “The use of P-glycoprotein deficient *C. elegans* as a model for Inflammatory Bowel Disease”
- 2016-2017 - SCICU Faculty-Undergraduate Research Grant (with undergraduate Matthew Nelson), “The use of ABC-Transporter deficient *C. elegans* as a model for intestinal function”. 2016-2017.
- 2015-2016 - SCICU Faculty-Undergraduate Research Grant (with undergraduate George Green), “Effects of Multidrug Resistance Gene Deficiency on Intestinal Cell Healing”
- 2013-2014 - RayBiotech Innovative Research Grant, “Role of mitochondrial genetics in regulatory T-cell function”

Professional Development (Scholarly Activities):

2021	SC-INBRE/ER(Up)T Faculty Associate
2012	Immunohistochemistry and Microscopy Short Course, The Histochemical Society (Woods Hole, MA)
2009	Microbes & Mucosal Immunity Workshop, The International Congress of Mucosal Immunology (Boston, MA)
2008	Advanced Course in Immunology, The American Association of Immunologists (Minneapolis, MN)
2008	Professional Skills Training Course: Making Scientific Presentations, The American Physiological Society (Lake Buena Vista, FL)

Awards & Honors (Scholarly Activities):

2014	Ralph D. Lillie Memorial Award, The Histochemical Society
2013	American Society for Microbiology Conference for Undergraduate Educators Early-Career Faculty Travel Award
2007-2012	Howard Hughes Medical Institute Med into Grad Fellow
2010-2012	Marie and Emmett Carmichael Fund for Graduate Students in Biosciences
2012	Outstanding Student, Doctoral Level; Molecular and Cellular Pathology Graduate Program (UAB)
2012	Ralph D. Lillie Memorial Award, The Histochemical Society
2010	American Association of Immunologists International Congress of Immunologists Travel Grant (2010 International Congress of Immunology, Kobe, Japan)

COMMITTEES

National

2022-Present	Histochemical Society Secretary/Treasurer
2021-Present	Genomics Education Partnership Assessment Committee (Chair 2022-2023)
2015-Present	Histochemical Society Education Committee (Chair, 2015-2021)
2019-2022	Histochemical Society Executive Council (Awards Subcommittee and Diversity, Inclusion & Membership Subcommittee)

2016-Present Science Research Advisory Committee; Federation of American Societies for Experimental Biology
 2015-Present Education Committee; The Histochemical Society
 2017 Shared Research Resources Subcommittee; Federation of American Societies for Experimental Biology
 2015-2016 Student Learning Assessment in Microbiology Database Committee – American Society of Microbiology

Institutional

2023-Present Faculty Athletics Representative
 2023-Present Faculty Excellence Committee (Natural Science & Engineering Representative)
 2022-2024 Intercollegiate Athletics Committee (Chancellor's Appointee)
 2020-2023 Faculty Senator (Natural Science & Engineering Representative)
 2021-2022 Faculty Advisory Committee (Natural Science & Engineering Representative)
 2017-2019 Undergraduate Admissions Committee (College of Science Representative) – Clemson University
 2016-2017 Faculty Advisory Committee for Intercollegiate Athletics – Limestone College
 2016-2017 Honors Committee – Limestone College
 2015-2017 Achieving Writing Excellence (AWE) Core Faculty – Limestone College
 2015-2016 Judicial Board – Limestone College
 2009-2011 Admissions Committee – University of Alabama at Birmingham Graduate Biomedical Sciences (Cancer Biology and Pathobiology & Molecular Medicine)
 2008-2009 Admissions Committee - University of Alabama at Birmingham Integrative Biomedical Sciences Graduate Program

Departmental

2019-2021 Natural Sciences & Engineering Unit Criteria Committee (Chair)

Professional

2021-Present Histochemical Society Secretary/Treasurer (Elected)
 2021-Present Genomics Education Partnership Assessment Committee (Chair, 2022-2023)
 2019-2021 Histochemical Society Council at-large (Elected)

Editorial Boards

2015-2016 ASM Sample Questions in Microbiology. Ades S *et al.* 2016. ASM Press. Washington, DC.

Professional Society Memberships

- American Society of Microbiology
- Genetics Society of America
- The Histochemical Society

OTHER SERVICE

2022-Present Crohn's & Colitis Foundation Advocacy Network Volunteer
 2015-Present Judge, Piedmont Region III Science Fair (Spartanburg, SC)
 2019-Present South Carolina Junior Academy of Science Annual Meeting Abstract/Paper Judge
 2023 Crohn's & Colitis Foundation IBD Day on the Hill Volunteer
 2021-2022 Experimental Biology Poster/Presentation Judge
 2009-2021 Camp Counselor, Camp Oasis Georgia - Crohn's and Colitis Foundation of America
 2016-2018 Cabin Group Leader, Camp Oasis Georgia - Crohn's and Colitis Foundation of America

Curriculum Vitae

Scott M. Tanner

- 2014-2017 Mentor for the American Society of Microbiology Best Practices in Curriculum Design, Teaching, & Assessment Program
- 2015-2017 Sacristan, Extraordinary Minister of Holy Communion – Jesus Our Risen Savior Catholic Church (Spartanburg, SC)
- 2012-2014 Sacristan, Extraordinary Minister of Holy Communion, and Lector – St. Stephen the Martyr Catholic Church (Birmingham, AL)