

**Curriculum Vitae**  
**Terrence J. Ravine, Ph.D.**

**Work Address:**

Department of Biomedical Sciences  
University of South Alabama  
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**Education:**

Medical College of Virginia/Virginia Commonwealth University, Ph.D. Pathology	1993
University of Akron, M.S. Biology	1985
University of Akron, B.S. Medical Technology (B.S.M.T.)	1983

**Teaching Experience:**

Associate Professor: University of South Alabama, Dept. of Biomedical Sciences 2016 - Present

Courses taught:

- BMD 210 - Microbiology in Healthcare
- BMD 210L - Microbiology in Healthcare Lab
- BMD 251 - Human Anatomy & Physiology I
- BMD 252 - Human Anatomy & Physiology II
- BMD 494 - Directed Research Studies
- BMD 499 - Honors Research Thesis
- PT 499 - Senior Honors Project
- UGR 291/391 - Research: Healthcare-Associated Infections

Assistant Professor: University of South Alabama, Dept. of Biomedical Sciences 2009 - 2016

Courses taught:

- BMD 114 - Human Anatomy & Physiology I (formerly CLS 114)
- BMD 115 - Human Anatomy & Physiology II (formerly CLS 115)
- BMD 210 - Infectious Disease in Health Care Environments
- BMD 494 - Directed Research Studies

Assistant Professor: University of South Alabama, Dept. of Clinical Laboratory Sciences 2002-2009

Courses taught:

- CLS 320 - Hematology I
- CLS 345 - Hemostasis & Body Fluids
- CLS 350 - Parasitology, Mycology, & Virology
- CLS 394 - Directed Study
- CLS 410 - Clinical Microbiology
- CLS 420 - Hematology II
- CLS 440 - Hematology Practicum
- CLS 445 - Clinical Microbiology Practicum I
- CLS 456 - Clinical Microbiology Practicum II
- CLS 495 - Clinical Correlation Studies

<ul style="list-style-type: none"> <li>• CLS 496 - Comprehensive Examination Review</li> <li>• CLS 499 - Senior Honors Project</li> </ul>	1999-2001
Adjunct Faculty: University of South Alabama, Keesler Air Force Base, Biloxi, MS	
Course taught:	
<ul style="list-style-type: none"> <li>• CLS 490 - Elective Practica</li> </ul>	
Adjunct Instructor: Mississippi Gulf Coast Community College/Keesler Center, Biloxi, MS	1996-1997, 1999-2001
Courses taught:	
<ul style="list-style-type: none"> <li>• BIO 1134 - General Biology I</li> <li>• BIO 1144 - General Biology II</li> </ul>	
Education Coordinator/Clinical Instructor: Keesler Air Force Base (AFB), MS (Phase II Clinical Laboratory Technician Program /Microbiology)	1996-1997
Clinical Instructor (Laboratory Sciences): Eglin Air Force Base, FL	1993-1997
Graduate Student Preceptor: Dept. of Pathology, Medical College of Virginia, VA	1992-1993
Graduate Teaching Assistant: Department of Biology, University of Akron, OH	1983-1985
<b>Work Experience:</b>	
Supervisor, Clinical Laboratory, Singing River Hospital, Pascagoula, MS	2001-2002
Chief, Medical Genetics Laboratory, Air Force Medical Genetics Center, Keesler Air Force Base, MS	1997-2001
Chief, Microbiology, Keesler Medical Center, Keesler AFB, MS	1993-1997
Associate Chief, Clinical Laboratory, USAF Regional Hospital, Eglin AFB, FL	1986-1990
Biomedical Laboratory Officer, Malcolm Grow Medical Center, Andrews AFB, MD	1985-1986
Medical Technologist, Children's Hospital Medical Center, Akron, OH (part time)	1983-1985
Laboratory Technician, Children's Hospital Medical Center, Akron, OH (part time)	1982-1983
Phlebotomist, Barberton General Hospital, Barberton, OH	1981-1982
<b>Certifications/Licenses</b>	
Medical Technologist (MT), American Society for Clinical Pathology (ASCP)	1983
Clinical Laboratory Scientist (CLS), National Certification Agency (NCA)	1983
Inspector, College of American Pathologists (#1162083)	1994
Clinical Laboratory Technologist, State of Florida (License No. TN 36799)	2000
Clinical Laboratory Supervisor, State of Florida (License No. SU 36799)	2001

## Invited Lecturer:

- Alpha Epsilon Delta (AED) - Research Panel Discussion, November 3, 2021.
- Alpha Epsilon Delta (AED) - Research Panel Discussion, March 24, 2021.
- BMD 201 - Sampling of Patient Radiation Therapy Immobilization Masks, April 17, 2020.
- BMD 201 - Healthcare-Acquired Infections and Medical Devices, September 13, 2019.
- BMD 335 - Human Physiology II “Urinary Tract Overview”, TBL format, March 11 &13, 2014.
- BMD 335 - Human Physiology II “Respiratory System”, 29 February - 9 March 2012.
- BMD 450 - Introduction to Research “Recognition of *Naegleriae* Ameba Surface Protein Epitopes by Anti-human CD45 Antibodies”, January 28, 2010.
- BMD 450 - Introduction to Research “Effects of Arachidonic Acid on *Dictyostelium discoideum* aggregation”, October 7, 2010.
- BLY 435/535 - Biology of Fungi “Environmental Fungi of Medical Importance”. Fungal identification wet lab was also conducted, April 8, 2008.
- USA Physician Assistant Studies, “Hematology/Coagulation” Lecture Series, 2003.

## Undergraduate/Graduate Research

### American Heart Association Sponsored Summer Research

2024 (May-July)

- Co-mentor - Jack Spedale, Department of Biomedical Sciences. Project - Assessing Localization of Ubiquitin Protein In Pulmonary Microvascular Endothelial Cells After Intoxication With *Pseudomonas aeruginosa* Exoenzyme Y. Center for Lung Biology, College of Medicine, University of South Alabama, Mobile, AL.

### Summer Undergraduate Research Fellowship (SURF)

2024 (May-July)

- Co-mentor - Noor Shalan, Department of Biomedical Sciences. Project - Determining Ecotoxicological Profiles and Biodegradability of Novel Boronium Compounds using Standardized Wastewater Treatment Systems Testing Methods. Office of Undergraduate Research, University of South Alabama, Mobile, AL.
- Mentor - Dev Mehta Department of Biomedical Sciences. Project - Contamination of Orthotic Thermoplastic Materials with Antibiotic-resistant Bacteria Associated with Medical Device Biofilms. Office of Undergraduate Research, University of South Alabama, Mobile, AL.

2023 (May-July)

- Co-mentor - Connor Holm, Department of Biomedical Sciences. Project - The Effects of *Pseudomonas aeruginosa* ExoY on Extrinsic Pathway Executioners Caspase 3/7 in Pulmonary Microvascular Endothelial Cells. Office of Undergraduate Research, University of South Alabama, Mobile, AL.

2022 (May-July)

- Co-mentor - Andrea M. Vavrinek, Department of Biomedical Sciences. Project - *Pseudomonas aeruginosa* ExoY Does Not Affect ExoS/T-Induced Cytotoxicity in Pulmonary Microvascular Endothelial Cells. Office of Undergraduate Research, University of South Alabama, Mobile, AL.

2021 (May-July)

- Mentor - Alexondria E. Fay, Department of Biomedical Sciences. Project - Evaluating Reflectance Spectroscopy as a Method to Measure the Amount of Bacterial Pigment Present on Fabric Samples. Office of Undergraduate Research, University of South Alabama, Mobile, AL.

2019 (May-July)

- Mentor - Katelyn N. Rogers, Department of Biomedical Sciences. Project - Developing a Novel Quantitative Assay to Determine the Antibacterial Effectiveness of Chemically Synthesized Molecules Attached to Fabric Surfaces. Project was selected for oral presentation at USA Undergraduate Research Forum, University of South Alabama, Mobile, AL.

### **Directed Research (Undergraduate)**

2021-Present

- Tia Lofton (Biomedical Sciences) Determining Lowest Concentration of Biocidal Dye Required to Control Bacterial Growth.
- Brianna Dixon (Biomedical Sciences) Determining Effects of Differences in Chloride Concentration of Biocide Dyed Fabric Samples
- Anah Hughes/Baily Welch (Biomedical Sciences) Evaluating Antimicrobial Activity of Biogenic Silver Nanoparticles Against Antibiotic Resistant Bacteria.
- Sicily L. Hardy (Biomedical Sciences) Determining Antimicrobial Activity of a Novel Biocide Dye Incorporated Into Fabric.
- Alexondria E. Fay (Biomedical Sciences) Evaluating Reflectance Spectroscopy as a Method to Measure the Amount of Bacterial Pigment Present on Fabric Samples.
- Mark H. Eggers (Biomedical Sciences), Alexondria E. Fay (Biomedical Sciences) Developing a Quantitative Chromogenic Assay to Detect Intermediate Levels of Antibacterial Activity of Fabric Treated with Biocides.
- Makenna A. Howell (Biomedical Sciences). Measuring Antibacterial Effectiveness of Various Biogenic and Chemically Produced Metallic Nanoparticles.

### **Directed Research (High School)**

2020-2022

- Mentor for Dev V. Mehta, "Bacterial Spores Derived from *Bacillus cereus* Promote Attachment to a Radiation Therapy Immobilization Form". International Baccalaureate Program, Davidson High School, Mobile, AL.

2017-2018

- Mentor for Julie Dees, "Bacterial Growth Inhibition Study Using Natural Oils (Lemon grass, Cinnamon, Tea tree (melaleuca)", International Baccalaureate Program, Davidson High School, Mobile, AL.

### **University Honors Program**

#### **Mentor**

2022-2023

- Co-mentor: Andrea Vavrinek, Department of Biomedical Sciences. Thesis: Understanding the Mechanisms and Effects of *Pseudomonas aeruginosa* Exoenzyme Y on Intrinsic Apoptosis In Pulmonary Microvascular Endothelial Cells

2019-2020

- Mentor: Katelyn Rogers, Department of Biomedical Sciences. Thesis: A Novel Assay for Testing Biocide-Treated Fabric for Antibacterial Properties.

2017-2018

- Co-mentor (w/ Sumit Arora): Zohaib Ijaz, Department of Biomedical Sciences  
Thesis: Green Synthesis of Silver Nanoparticles Using *Bergenia ligulata* Plant Extract: Characterization and Antimicrobial Properties

2015-2016

- Mentor: Mackenzie Coghlan, Department of Health, Kinesiology and Sport  
Thesis: An Evaluation of the Effectiveness of Exercise Methods on Improving Outcomes in Patients with Adolescent Idiopathic Scoliosis: A 10 Year Review.

### **Committee Member**

2023-2024

- Trisha Agrawal, Department of Mechanical Engineering (Biology major)
- Brianna Dixon, Department of Psychology (BMD major)

2022-2023

- Aaron Wilson, Department of Biomedical Sciences
- Brianna Mitchell, Department of Biomedical Sciences

2021-2022

- Mohammad Hamo, Department of Biomedical Sciences

2020-2021

- Ada Chaeli van der Zijp-Tan, Department of Biomedical Sciences
- Ted Amadi, Department of Biomedical Sciences

2019-2020

- Ian McCullough, Department of Biomedical Sciences

2018-2019

- Monica Pasala, Department of Biomedical Sciences
- Frances Lawson, Department of Biomedical Science

2017-2018

- Juan Pardo, Department of Biomedical Sciences
- Eleanor Harwell, Department of Physical Therapy

2016-2017

- Malvika Lall, Department of Biomedical Sciences

2015-2016

- Sarah Harvey, Department of Biomedical Sciences
- Anu Pandit, Department of Biomedical Sciences

2014-2015

- Devang Patel, Department of Biomedical Sciences

2013-2014

- Alyssa Stagner, Department of Biomedical Sciences
- Justin Jong, Department of Biomedical Sciences/Department of Physiology (COM)

2012-2013

- Umair Savani, Department of Biomedical Sciences
- Kathleen Strunk, Department of Biomedical Sciences
- Allia Grace G. Martinez, Department of Biomedical Sciences/Department of Microbiology and Immunology (COM)

## Graduate Program

2019-2022

- Committee Member for Michael Russel. Master's Thesis: "Visualizing Muscle Assembly and Function in *C. elegans*". Department of Biology, BLY 599 (Major Advisor: Dr. Ryan Littlefield).

## Publications (peer reviewed):

1. Brock, C. W., Mehta, D. V., **Ravine, T. J.** (2024). Orthotic Thermoplastic Demonstrates a Similar Contamination Potential with Bacillus Bacteria Recovered from Thermoplastic Radiation Therapy Patient Masks. *Applied Biosci.* (Special Issue: Feature Papers) 2024, 3, 250-262. <https://doi.org/10.3390/applbiosci3020017>.
2. **Ravine TJ**, Mehta DV. Increasing the Number of Dormant Bacillus cereus Spores Promotes Its Attachment to Radiation Therapy Thermoplastic Immobilization Mask Material. *Radiat Therap.* 2023 (Spring); 32(1), 1-10.
3. **Ravine TJ**, Rayner JO, Roberts RW, Davis JH Jr., Soltani M. Boronium Salt as an Antiviral Agent against Enveloped Viruses Influenza A and SARS-CoV-2. *Appl. Biosci.* 2022, 1(3), 289-298. <https://doi.org/10.3390/applbiosci1030018>.
4. **Ravine T**, Yuan Q, Howell M. Biogenic Silver Nanoparticles Processed Twice Using 8M Urea Exhibit Superior Antibacterial and Antifungal Activity To Commercial Chemically Synthesized Counterparts. *Applied Nano.* 2022; 3(4):187-201. <https://doi.org/10.3390/applnano3040014>.
5. **Ravine TJ**, Soltani M, Davis JH Jr, Salter EA, Wierzbicki A. Unusual Boronium Salt Shows Antifungal Activity Comparable to a Commercial Quaternary Ammonium Disinfectant. *ChemistrySelect.* 2022;7(12). e202104344. [doi.org/10.1002/slct.202104344](https://doi.org/10.1002/slct.202104344)
6. Ravine TJ. Examining Properties Influencing Infectious Microbe Associations with Surfaces of Four Different Thermoplastic Radiation Therapy Masks. *J Med Imaging Radiat Sci.* 2021;52(4):576-585.
7. Soltani M, **Ravine TJ**, Davis JH. Novel Boronium Salt Exhibits Substantial Antibacterial Activity When Compared to a Commercial Quaternary Ammonium Disinfectant. *Bioorg. Med. Chem. Lett.* 2021;36(127808):1-6. <https://doi.org/10.1016/j.bmcl.2021.127808>.
8. Ravine TJ. Two Bacillus Isolates Recovered from a Radiation Therapy Facility Differ Greatly in Their Ability to Attach to Four Immobilization Masks. *J Med Imaging Radiat Sci.* 2020;51(4):590-598.

9. **Ravine TJ**, Bru SE, Brewer PS, Tyler S. Persistence of *Aspergillus fumigatus* Fungal Spores Seeded onto Four Different Radiation Therapy Thermoplastic Immobilization Devices. *Radiat Therap.* Spring 2020;29(1):16-27.
10. **Ravine TJ**, Brewer PS, Bru SE, Tyler S. Sampling of Patient Radiation Therapy Thermoplastic Immobilization Forms Reveals Several Types of Attached Bacteria. *J Med Imaging Radiat Sci.* 2020;51:117-127.
11. Ravine TJ. *Bacillus*: An Environmental Contaminant or Misunderstood Pathogen? *J Bacteriol Mycol.* 2019;6 (6):1-5.
12. **Ravine TJ**, Brewer PS, Bru SE, Tyler S. Time Study on the Persistence of Two Healthcare-Associated Infection Pathogens on Thermoplastic Immobilization Devices. *Radiat Therap.* Fall 2019;28(2):123-30.
13. Day JM, Fletcher J, Coghlan M, **Ravine T**. Review of scoliosis-specific exercise methods used to correct adolescent idiopathic scoliosis. *Arch Physiother.* 2019;Aug 23;9:8:1-11.
14. **Ravine TJ**, Brewer PS, Bru SE, Tyler S. Limiting Healthcare-associated Infections from Patient-use Equipment. *Radiat Therap.* Fall 2018; 27(2):191-93.
15. **Ravine TJ**, Brewer PS, Bru SE, Tyler S. Attachment Potential and Survival of Bacterial Pathogens on Radiation Therapy Thermoplastic Immobilization Forms. *Radiat Therap.* Fall 2017; 26(2):127-39.
16. Brewer PS, **Ravine TJ**, Bru SE. Risk of Patient Infection from Heating Appliances Used to Produce Thermoplastic Immobilization Devices. *Radiat Therap.* Fall 2014; 23(2):125-35.
17. **Ravine TJ**, Polski JM, Jenkins J. Recognition of *Naegleriae* Ameba Surface Protein Epitopes by Anti-human CD45 Antibodies. *Cytometry A*, 2010; Apr;77(4):305-09.
18. **Ravine TJ**, Ledinko N. Treatment with Human Recombinant Interferons Inhibits *In Vitro* Invasive Ability of Human Lung Carcinoma Cells. *Clin. Expl. Metastasis*, 1986; 4(3):191-203.

#### **Abstracts/Presentations:**

1. *Pseudomonas aeruginosa* Exoenzyme Y Does Not Promote Increased Ubiquitin Expression in Pulmonary Microvascular Endothelial Cells. Jack Spedale, Claire Kolb Troy Stevens, Ron Balczon, Terrence Ravine. 51<sup>st</sup> Annual Research Day, College of Medicine, University of South Alabama, Mobile, AL July 2024.
2. *Patient Safety: Orthotic Thermoplastics Demonstrate a Similar Contamination Potential to Bacillus Bacteria Recovered from Thermoplastic Radiation Therapy Masks.* Mehta, D. V., Brock, C. W., Ravine, T. J. 2024 American Society for Biochemistry and Molecular Biology (ASBMB), San Antonio, TX. April 2024.
3. *Pseudomonas aeruginosa* Exo Y inhibits Exo S-induced Caspase-3/7 Activation in Pulmonary Microvascular Endothelial Cells Holm, C. E., Stevens, T., Ravine, T. J., Renema, P. 2024 American Society for Biochemistry and Molecular Biology (ASBMB), San Antonio, TX. March 2024. Abstract 1014, March 2024, *Journal of Biological Chemistry* 300(3):105810. DOI: 10.1016/j.jbc.2024.105810

4. *Pseudomonas aeruginosa Exo Y inhibits Exo S-induced Caspase-3/7 Activation in Pulmonary Microvascular Endothelial Cells.* Holm, C. E., Stevens, T., Ravine, T. J., Renema, P., 45th Biennial AED National Convention (1st Place). Alpha Epsilon Delta Honor Society, Dallas, TX. March 2024.
5. *Patient Safety: Orthotic Thermoplastics Demonstrate a Similar Contamination Potential to Bacillus Bacteria Recovered from Thermoplastic Radiation Therapy Masks* Mehta, D. V., Brock, C. W., Ravine, T. J. (1st Place: Honors Scholars). 2024 AAS Annual Meeting, "", Alabama Academy of Science (AAS), Jacksonville State University, Jacksonville, AL. February 2024.
6. *Dormant Bacillus cereus Spores Increase Adherence to Thermoplastic Immobilization Mask Material.* Mehta, D. V., Ravine, T. J., 58th NCHC Annual Conference. National Collegiate Honors Council (NCHC), Chicago IL. November 2023.
7. *Development of a Rechargeable, Antimicrobial, Reactive Textile Dye.* Hadad, N., Milter, J., Hardy, S. L., Dixon, B., West, K. N., Ravine, T. J. 2023 AIChE Annual Meeting, American Institute Of Chemical Engineers, Orlando FL. November 2023.
8. *Associations Between Two Bacillus Species and Thermoplastic Materials Used to Make Orthotic Immobilization Splints.* Mehta, D. V., Brock, C. W., Ravine, T. J., Undergraduate Research Symposium 2023, USA Office of Undergraduate Research, University of South Alabama, Mobile AL. October 2023.
9. *Evaluating the Antibacterial Effectiveness of a Chlorine Rechargeable Aqueous Biocide Fabric Dye Using a Chromogenic Assay Detecting Serratia marcescens Pigment.* Hardy, S. L., Dixon, B., Hadad, N., Milter, J. Ravine, T. J. Undergraduate Research Symposium 2023, USA Office of Undergraduate Research, University of South Alabama, Mobile AL. October 2023.
10. *The Effects of Pseudomonas aeruginosa ExoY on Extrinsic Pathway Executioners Caspase 3/7 in Pulmonary Microvascular Endothelial Cells.* Holm, C., Stevens, T., Ravine, T. J., Renema, P. Undergraduate Research Symposium 2023, USA Office of Undergraduate Research, University of South Alabama, Mobile AL. October 2023.
11. *Increasing the Number of Dormant Bacillus cereus Spores Promotes Greater Attachment to Radiation Therapy Thermoplastic Immobilization Mask Material.* Mehta, D. V., Ravine, T. J. 2023 AAS Annual Meeting, Alabama Academy of Sciences (AAS), Samford University, Birmingham AL. March 2023.
12. *Pseudomonas aeruginosa ExoY Does Not Affect ExoS/T-Induced Cytotoxicity in Pulmonary Microvascular Endothelial Cells.* Vavrinek, A., Stevens, T., Ravine, T. J., Renema, P., 2023 AAS Annual Meeting (Special Section Alabama Honors Scholars - Awarded 2nd place), Alabama Academy of Sciences (AAS), Samford University, Birmingham AL. March 2023.
13. *Synthesis of a Novel, Regenerable Anti-Microbial Dye for Cotton Textiles.* Stallings J, Miltner J, O'Brien R, Ravine TJ, West, K. American Institute of Chemical Engineers (AIChE) Annual Meeting, Phoenix, AZ. November 2022.
14. *Novel Boronium Ions Show Potential as Safe & Effective Alternatives to Quaternary Ammonium Compounds.* BIO Alabama Annual Conference, Grand Bohemian Hotel, Mountain Brook, AL. April 2022.



15. *Pseudomonas aeruginosa* ExoY Does Not Affect ExoS/T-Induced Cytotoxicity in Pulmonary Microvascular Endothelial Cells. Vavrinek A, Stevens T, Ravine T, Renema P. Undergraduate Research Symposium, University of South Alabama, Mobile, AL, October 2022.
16. *Measuring Antibacterial Effectiveness of Various Biogenic and Chemically Produced Metallic Nanoparticles*. Howell MA, Ravine TJ, Yuan Q. Undergraduate Research Symposium, University of South Alabama, Mobile, AL, October 2021.
17. *Evaluating Reflectance Spectroscopy as a Method to Measure the Amount of Bacterial Pigment Present on Fabric Samples*. Fay AE, Ravine TJ. Undergraduate Research Symposium, University of South Alabama, Mobile, AL, October 2021.
18. *Developing a Quantitative Chromogenic Assay to Detect Intermediate Levels of Antibacterial Activity of Fabric Treated with Biocides*. Fay AE, Eggers MH, Ravine TJ. Undergraduate Research Symposium, University of South Alabama, Mobile, AL, October 2021.
19. *Increasing the Utility of a Chromogenic Assay Used to Test Biocide-treated Fabric*. Rogers, KN, Ravine TJ. Undergraduate Research Symposium, University of South Alabama, Mobile, AL, December 2020.
20. *Do Heating Appliances Used to Create Patient Thermoplastic Immobilization Devices Pose an Inherent Risk of Infection?* Brewer PS, Ravine TJ, Bru SE. 22<sup>nd</sup> Annual Graduate Research Forum, University of South Alabama, March 2015.
21. *Sodium Arachidonate Effects on Dictyostelium discoideum Aggregation*. Ravine TJ, Mata JL. University of South Alabama Research Council (USARC) Research Forum, University of South Alabama, Mobile, AL, March 2010.
22. *Flow cytometry characterization of amoebic plasma membrane surface proteins using monoclonal antibodies against human leukocytes*. Ravine TJ, Jenkins J, Polski JM. University of South Alabama Research Council (USARC) Research Forum, Mobile, AL, March 2006.
23. *Growth Supportive Interactions Between Legionella pneumophila and Acanthamoeba castellanii*, Ravine TJ, Dalton HP. 5th Annual International Conference on the Biology & Pathogenicity of Free-Living Amoeba, Richmond, VA August 1992.

#### **Intramural Funding:**

1. "Development and Testing of Novel Antimicrobial Boronium Compounds" (PI). Awarded by the University of South Alabama Office of Research & Economic Development, Research and Scholarly Development Grant (RSDG), \$25,000, 2023.
2. "Does Pseudomonas Aeruginosa Exo Y Infection of Pulmonary Microvascular Cells Target BCL-xL to Inhibit Intrinsic Apoptosis?" CAHP Research Support Award, \$1,000, 2022.
3. "Constructing a Novel Multi-Stack Film Incorporating Antimicrobial Nanoparticles to Cover High-Touch Medical Device Surfaces to Help Prevent Healthcare-Associated Infections," (PI). Awarded by College of Allied Health Professions (Collaborative Research Program), \$5,000.00, 2021.
4. "Development of a Biocidal Textile" (Co-PI). Awarded by the University of South Alabama Office of Research & Economic Development, Research and Scholarly Development Grant (RSDG)., \$20,932, 2021.

5. "Incorporating Novel, Green-Synthesized Silver Nanoparticles into Plastic Material Intended to Cover Electronic Medical Devices to Help Reduce the Incidence of Healthcare-Associated Infections" (Co-PI). Awarded by the University of South Alabama Division of Academic Affairs, Interprofessional Research Across the Health-Related Professions Grant, \$4,750, 2018.
6. "Assessing Attachment/Survival Capability of Three Opportunistic Fungal and Bacterial Pathogens on Thermoplastic Immobilization Forms Used During Patient Radiation Therapy" (PI). Awarded by the University of South Alabama Division of Academic Affairs, Interprofessional Research Across the Health-Related Professions Grant, \$3,071, 2017.
7. "*In vitro* Assessment of Human Platelet Aggregation Agonist Arachidonic Acid to Stimulate *Dicytostelium discoideum* Slug Formation" (PI). Awarded by the University of South Alabama Research Council (USARC), \$4,910, 2007.
8. "Cytofluorometric Profiling of Amoebic Plasma Membrane Surface Proteins Using Human Hematopoietic Clusters of Differentiation (CD) Marker Antibodies" (PI). Awarded by the University of South Alabama Research Council (USARC), \$1,200, 2005.

**Extramural Funding:**

1. "Evaluating Patient Immobilization Masks for Bacteria Causing Healthcare-Associated Infections" (Co-PI). American Society of Radiologic Technologists (ASRT) Foundation, Albuquerque, NM. \$10,000, 2024.
2. "Determination of Reactive Oxygen Species (ROS) Formation by Oxyion Air Purifiers and Their Effect on Bacteria" (Co-PI). Sponsored Project, Oxyion, Fresno, CA. \$6,306, 2020-21.
3. "Evaluation of Bacterial Attachment on Four Different Thermoplastic Immobilization Forms Used During Patient Radiation Therapy Treatment" (PI). Support received in the form of a monetary donation and/or material goods valued at \$1,030, 2016.

**Honors/Awards:**

1. "Top Prof" Award, Azalea Chapter of Mortar Board National Honor Society, University of South Alabama, 2024.
2. "Top Prof" Award, Azalea Chapter of Mortar Board National Honor Society, University of South Alabama, 2023.
3. "Top Prof" Award, Azalea Chapter of Mortar Board National Honor Society, University of South Alabama, 2022.
4. Faculty Award for Excellence in Research, College of Allied Health Professions, University of South Alabama, March 2022.
5. "Top Prof" Award, Azalea Chapter of Mortar Board National Honor Society, University of South Alabama, 2021.
6. "Top Prof" Award, Azalea Chapter of Mortar Board National Honor Society, University of South Alabama, 2019.

7. Harold Silverman Distinguished Author Award, American Society of Radiologic Technologists (ASRT), for the manuscript: "Attachment Potential and Survival of Bacterial Pathogens on Radiation Therapy Thermoplastic Immobilization Forms" published in the fall 2017 issue of *Radiation Therapist*, \$1,000 cash prize awarded 1 June 2018.
8. "Top Prof" Award, Azalea Chapter of Mortar Board National Honor Society, University of South Alabama, 2018.
9. Faculty Award for Excellence in Research, College of Allied Health Professions, University of South Alabama, April 2018.
10. Inducted into Alpha Eta, the National Scholastic Honor Society for the Allied Health Professions. April 2018.
11. "Top Prof" Award, Azalea Chapter of Mortar Board National Honor Society, University of South Alabama, 2017
12. Harold Silverman Distinguished Author Award, American Society of Radiologic Technologists (ASRT), for the manuscript: "Risk of Patient Infection from Heating Appliances Used to Produce Thermoplastic Immobilization Devices" published in the fall 2014 issue of *Radiation Therapist*, \$1,000 cash prize awarded 1 June 2015.

### **Review/Authoring Activities:**

#### **Journals:**

1. *Scientific Reports*, Nature Publishing Group, London UK.
2. *Sustainability*, MDPI Publications, Basel Switzerland.
3. *Healthcare*, MDPI Publications, Basel Switzerland.
4. *Journal of Antimicrobial Agents*, Hilaris Publishing, Brussels Belgium.
5. *International Journal of Environmental Research and Public Health*, MDPI Publications Basel Switzerland.
6. *Antibiotics*, MDPI Publications, Basel Switzerland.
7. *Pathogens*, MDPI Publications, Basel Switzerland.
8. *Toxins*, MDPI Publications, Basel Switzerland.
9. *Access Microbiology*, Microbiology Society, London UK.
10. *Infectious Disease Reports*, MDPI Publications, Basel Switzerland.
11. *Medical Sciences*, MDPI Publications, Basel Switzerland.

#### **Didactic Material:**

1. Pearson Education (2010-Present)
  - Serves as a pedagogical expert for both human anatomy & physiology and microbiology. Independent contributor performing a wide variety of activities including accuracy

checks, writing content, review of new and/or revised textbook chapters & laboratory manuals, and interactive web-based instruction (WBI) materials. The latter is performed in support of Pearson Educations' Mastering A&P and Mastering Microbiology learning management sites. Work efforts involve Interactive Physiology (IP) 2.0 and Interactive Labs for Microbiology. Examples include review of alpha/beta module storyboard analysis, question writing, and dynamic learning module development. Developed questions in support of "In the Clinic" videos and "Why This Matters" and Making Connections" units for Marieb & Hoehn, Human Anatomy & Physiology textbook, 10/11 eds and associated laboratory manual. Reviewed/edited "In Focus" in-depth concept figures seen in most chapters of this textbook. Authored the first eGlossary for Marieb & Hoehn, Human Anatomy & Physiology textbook, 12<sup>th</sup> edition.

## 2. McGraw-Hill (2014-2017)

- Developmental Review Panel (Autonomic Nervous System, Endocrine System, Lymphatic System and Immunity) of VanPutte, Regan, & Russo: *Seeley's Anatomy & Physiology*, 11<sup>th</sup> ed, May 2017.
- Review of LearnSmart Labs "Endocrine Structure and Function", "Digestive System", "Respiratory System" modules, June - July 2014.

## 3. John Wiley & Company (2004-2014)

- Virtual Focus Group, Wiley Learning Space: Anatomy & Physiology, Wiley Publishing, May 2014.
- Technology Focus Group, WileyPLUS 5.0 web-based learning platform, Wiley Publishing, November 2010.
- Chapter reviews (five) for Totora & Derrickson, *Principles of Anatomy & Physiology*, 13<sup>th</sup> ed., November 2009.
- Chapter reviews (five) for new Human Anatomy & Physiology textbook, 2004.

## 4. Others (2008-2012)

- Textbook review of "Microbiology" in *Respiratory Care Sciences: An Integrated Approach* by Wojciechowski, 5<sup>th</sup> ed., Cengage Health Care, 2012.
- Tuberculosis (TB) Case Study Review - National Tuberculosis Curriculum Consortium (NTCC), National Heart, Lung and Blood Institute of NIH, 2008.

### **Newsletters**

- CAHP Biosafety Committee Newsletter (published each term).
- CAHP Research Newsletter (semi-annual)

### **Professional Memberships:**

- American Society for Microbiology (ASM)

### **Departmental Committees or Responsibilities:**

- Equipment & Compliance Committee, 2019-Present.
- Recruitment & Marketing Committee (Chairperson), 2019
- Promotion & Tenure Committee, Biomedical Sciences, 2018-Present
- Promotion & Tenure Committee (Cardiorespiratory Care, Physical Therapy, & Radiologic Sciences Departments), 2017

- Biomedical Sciences, University Honor's Research Committee Member, 2011-Present
- Biomedical Sciences, New Student Advising/Registration, 2010-2019
- Biomedical Sciences, Faculty Search Committee (as required), 2010-Present
- Biomedical Sciences, Curriculum Development Committee (as required), 2010-Present
- Clinical Laboratory Sciences, Student Advising, 2002-2009.
- Clinical Laboratory Sciences, Southbound Orientation, 2002-2009.
- Clinical Laboratory Sciences, Curriculum Development Committee, 2002-2009.
- Clinical Laboratory Sciences, Admissions Committee, 2002-2009.
- Clinical Laboratory Sciences, Faculty Search Committee, 2003-2009.

### **College Committees or Responsibilities**

- College of Allied Health Professions Research Committee, 2022-Present.
- College of Allied Health Professions Research and Scholarly Activities Task Force, 2020 – 2022.
- Biosafety Officer, Pat Capps Covey College of Allied Health Professions, 2006-Present.
- Biosafety Committee (Co-chair), Pat Capps Covey College of Allied Health Professions, 2020- Present.
- Biosafety Committee (Chair), Pat Capps Covey College of Allied Health Professions, 2006-2020.
- Dean's Advisory Council (Member), Pat Capps Covey College of Allied Health Professions, 2003-2005.

### **University Committees or Responsibilities:**

- University of South Alabama Veterans Affairs Committee, Member, 2019 -Present.
- University of South Alabama Recreation Center Advisory Committee, 2015-2019.

### **Other Professional Activities**

- Editorial Board Member, Microbiology, Pearson Education, 2021-Present.
- Advisory Board Member, Anatomy & Physiology, Pearson Education, 2016-2023
- Advisory Board Member, Interactive Physiology (IP) 2.0, Pearson Education, 2015-2023
- Mentor, USA Cardiorespiratory Sciences Senior Year Projects, 2009-2020.

### **Extramural Service Related to Profession or University:**

- Faculty Volunteer - Go Explore Math & Science (GEMS), Interactive Display: Radiation Therapy Meets Medical Microbiology. USA Student Ballroom, October 21, 2023.
- Faculty Volunteer - Go Explore Math & Science (GEMS), Interactive Display: Protecting Patients During Radiation Therapy. USA Student Ballroom, November 19, 2022.
- Faculty Volunteer - Jubilee BEST (Boosting Engineering Science and Technology) regional high school/middle school robotics competition, USA Mitchell, October 2016 - 2020.
- Volunteer/Special Awards Judge - Jubilee BEST (Boosting Engineering Science and Technology) regional high school/middle school robotics competition, USA Mitchell Center, October 24, 2015.
- High School Science Mentor - Involved in all phases of robot design & construction for Jubilee BEST Robotics program. Achieved two back-to-back regional wins in 2011-2012 at USA Mitchell Center competition each year advancing the team to Super-Regionals competition held at Auburn University, August-December 2010-2014.
- Expanding Your Horizons (EYH)/ Girls in Engineering, Math & Science (GEMS) - Presented "Solving Medical Mysteries" workshops geared toward increasing interest of middle-school age girls in general/medical sciences. Workshop organizer and/or participant, 2000-2008.

- Hematocrit presentation/wet lab. - EYH Conference, University of South Alabama, October 22, 2005.
- Antibiotic resistance presentation/interactive demo. EYH Conference, University of South Alabama, October 28, 2006
- Regional State Science Olympiad at USA - Judge/Official scorekeeper, 2007.
- USA Upward Bound Program - Clinical Laboratory Sciences Workshop Host, 2004.
- Odyssey USA Program - Invited presenter for Sickle Cell Disease, 2003