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

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
- CLS 496 - Comprehensive Examination Review
- CLS 499 - Senior Honors Project

Adjunct Faculty: University of South Alabama, Keesler Air Force Base, Biloxi, MS 1999-2001
Course taught:
CLS 490 - Elective Practica

Adjunct Instructor: Mississippi Gulf Coast Community College/Keesler Center, Biloxi, MS 1996-1997, 1999-2001
Courses taught:
BIO 1134 - General Biology I
BIO 1144 - General Biology II

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

Invited Lecturer:

- 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.

University/Departmental Honors Research Programs

Mentor - Summer Undergraduate Research Fellowship (SURF)

2019 (May-July)

- Katelyn 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.

Mentor - University Honors Program

2019-2020

- Mentor: Katelyn Rogers, Department of Biomedical Sciences. Project - 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 - University Honors Program

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 Sciences

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)

High School Mentor (International Baccalaureate Program)

2020-Present

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

2017-2018

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

Work Experience:

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 (parttime)	1983-1985
Laboratory Technician, Children's Hospital Medical Center, Akron, OH (parttime)	1982-1983
Phlebotomist, Barberton General Hospital, Barberton, OH	1981-1982

Certifications/Licenses

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

Publications:

1. 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.

2. Ravine TJ. Two Bacillus Isolates Recovered from a Radiation Therapy Facility Differ Greatly in Their Ability to Attach to Four Immobilization Masks. *Journal of Medical Imaging and Radiation Sciences.* 2020;51(4):590-598.

3. **Ravine TJ**, Bru SE, Brewer PS, Tyler S. Persistence of Aspergillus fumigatus Fungal Spores Seeded onto Four Different Radiation Therapy Thermoplastic Immobilization Devices. *Radiation Therapist*. Spring 2020;29(1):16-27.

4. **Ravine TJ**, Brewer PS, Bru SE, Tyler S. Sampling of Patient Radiation Therapy Thermoplastic Immobilization Forms Reveals Several Types of Attached Bacteria. *Journal of Medical Imaging and Radiation Sciences.* 2020;51:117-127.

5. Ravine TJ. Bacillus: An Environmental Contaminant or Misunderstood Pathogen? *J Bacteriol Mycol.* 2019;6 (6):1-5.

6. **Ravine TJ**, Brewer PS, Bru SE, Tyler S. Time Study on the Persistence of Two Healthcare-Associated Infection Pathogens on Thermoplastic Immobilization Devices. *Radiation Therapist.* Fall 2019;28(2):123-30.

7. Day JM, Fletcher J, Coghlan M, **Ravine TJ**. Review of scoliosis-specific exercise methods used to correct adolescent idiopathic scoliosis. *Arch Physiother*. 2019;Aug 23;9:8:1-11.

8. **Ravine TJ**, Brewer PS, Bru SE, Tyler S. Limiting Healthcare-associated Infections from Patient-use Equipment. *Radiation Therapist.* Fall 2018; 27(2):191-93.

9. **Ravine TJ**, Brewer PS, Bru SE, Tyler S. Attachment Potential and Survival of Bacterial Pathogens on Radiation Therapy Thermoplastic Immobilization Forms. *Radiation Therapist*. Fall 2017; 26(2):127-39.

10. Brewer PS, **Ravine TJ**, Bru SE. Risk of Patient Infection from Heating Appliances Used to Produce Thermoplastic Immobilization Devices. *Radiation Therapist.* Fall 2014; 23(2):125-35.

11. **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.

12. **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. Brewer PS, **Ravine TJ**, Bru SE. Do Heating Appliances Used to Create Patient Thermoplastic Immobilization Devices Pose an Inherent Risk of Infection? 22nd Annual Graduate Research Forum, University of South Alabama, March 2015.

2. **Ravine TJ**, Mata JL. Sodium Arachidonate Effects on *Dictyostelium discoideum* Aggregation. University of South Alabama Research Council (USARC) Research Forum, University of South Alabama, Mobile, AL, March 2010.

3. **Ravine TJ**, Jenkins J, Polski JM. Flow cytometry characterization of amoebic plasma membrane surface proteins using monoclonal antibodies against human leukocytes. University of South Alabama Research Council (USARC) Research Forum, Mobile, AL, March 2006.

4. **Ravine TJ**, Dalton HP. Growth Supportive Interactions Between *Legionella pneumophila* and *Acanthamoeba castellanii,* 5th Annual International Conference on the Biology & Pathogenicity of Free-Living Amoeba, Richmond, VA August 1992.

Intramural Funding:

1. “Incorporating Novel, Green-Synthesized Silver Nanoparticles into Plastic Material Intended to Cover Electronic Medical Devices to Help Reduce the Incidence of Healthcare-Associated Infections”. Awarded by the University of South Alabama Division of Academic Affairs, Interprofessional Research Across the Health-Related Professions Grant, $4,750, 2018.

2. “Assessing Attachment/Survival Capability of Three Opportunistic Fungal and Bacterial Pathogens on Thermoplastic Immobilization Forms Used During Patient Radiation Therapy”. Awarded by the University of South Alabama Division of Academic Affairs, Interprofessional Research Across the Health-Related Professions Grant, $3,071, 2017.

3. *“In vitro* Assessment of Human Platelet Aggregation Agonist Arachidonic Acid to Stimulate *Dicytostelium discoideum* Slug Formation”. Awarded by the University of South Alabama Research Council (USARC), $4,910, 2007.

4. “Cytofluorometric Profiling of Amoebic Plasma Membrane Surface Proteins Using Human Hematopoietic Clusters of Differentiation (CD) Marker Antibodies”. Awarded by the University of South Alabama Research Council (USARC), $1,200, 2005.

Extramural Funding:

1. “Determination of Reactive Oxygen Species (ROS) Formation by Oxyion Air Purifiers and Their Effect on Bacteria”. Sponsored Project, Oxyion, Fresno, CA. $3,808.91, 2020-21.

2. “Evaluation of Bacterial Attachment on Four Different Thermoplastic Immobilization Forms Used During Patient Radiation Therapy Treatment”. Support received from thermoplastic masks manufacturers in the form of a monetary donation and/or materials goods valued at $1,030, 2016.

Patents:

A Novel Color Development Assay for Screening Antibacterial Activity of Fabric Treated with Biocide Agents. Two USPO Nonprovisional Patents Applications Submitted (09/20).

Honors/Awards:

1. “Top Prof” Award, Azalea Chapter of Mortar Board National Honor Society, University of South Alabama, 2019.

2. 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.

3. “Top Prof” Award, Azalea Chapter of Mortar Board National Honor Society, University of South Alabama, 2018.

4. Faculty Award for Excellence in Research, College of Allied Health Professions, University of South Alabama, April 2018.

5. Inducted into Alpha Eta, the National Scholastic Honor Society for the Allied Health Professions. April 2018.

6. "Top Prof" Award, Azalea Chapter of Mortar Board National Honor Society, University of South Alabama, 2017

7. 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.

Authoring/Review Activities:

Journals:

1. *Healthcare,* MDPI Publications, Basel Switzerland

2. *Journal of Antimicrobial Agents,* Hilaris Publishing, Brussels Belgium

Publishers:

1. Pearson Education Publishing (2010-Present)

    - Performs a variety of review, development, and writing activities for both human anatomy & physiology and microbiology courses. Activities have included review of new and revised textbook editions, laboratory manuals, and associated web-based instruction (WBI) materials in support of Pearson Educations Mastering A&P Learning Management System (LMS). Work examples include alpha and beta reviews of Interactive Physiology 2.0 interactive modules, storyboard analysis, question writing, and dynamic learning module development. Authored questions for Marieb & Hoehn, Human Anatomy & Physiology chapter introductory "In the Clinic" videos and "Why This Matters" and Making Connections" modules for textbook and associated laboratory manual. Reviewed "In Focus" figures included in most chapters of this same textbook.

2. McGraw-Hill Publishing (2014-2017)

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

3. John Wiley & Company Publishing (2004-2009)

    - Chapter reviews (five) for Totora & Derrickson, *Principles of Anatomy & Physiology*, 13th 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, 5th ed., Cengage Health Care, 2012.
    - Tuberculosis (TB) Case Study Review - National Tuberculosis Curriculum Consortium (NTCC), National Heart, Lung and Blood Institute of NIH, 2008.

Participant:

- 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.

Professional Memberships:

- American Society for Microbiology (ASM)
- Human Anatomy & Physiology Society (HAPS)

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/Departmental Honor's Research Committee Member, 2011-Present
- Biomedical Sciences, New Student Advising/Registration, 2010-Present
- 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

- Biosafety Officer, Pat Capps Covey College of Allied Health Professions, 2006-Present.
- Biosafety Committee (Chair), Pat Capps Covey College of Allied Health Professions, 2006-2021.
- 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

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

Extramural Service Related to Profession or University:

- Faculty Volunteer - Jubilee BEST (Boosting Engineering Science and Technology) regional high school/middle school robotics competition, USA Mitchell, October 2016 - Present.

- Volunteer/Special Awards Judge - Jubilee BEST (Boosting Engineering Science and Technology) regional high school/middle school robotics competition, USA Mitchell, 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 presentation on Sickle Cell Disease, 2003