

# **University of South Florida**

## *Morsani College of Medicine*

### **Year 4 Elective**

### **Research in Physiology**

### **BMS 7560**

**Syllabus**  
**2023-2024**



#### Transmissible Disease Procedures

All students must be aware of and comply with university policies regarding Covid-19 and other transmissible diseases. They should also be aware of and comply with the policies at the clinical affiliates where their clinical training occurs. Failure to do so may result in disciplinary action.

**Elective Description**

This elective will provide experiential learning in physiology research.

**Course Director contact information.**

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**Course Director's Welcome/ How To Be Successful**

Welcome to the Research in Physiology Elective! This time is meant to help you explore what basic science research in physiology is about. To be successful, make sure you establish a positive relationship with your research mentor and stay in communication with me throughout your research time.

**Elective Objectives**

The primary objective of this course is to introduce the student to the research environment. The student will learn current research techniques and the methods of data collection and reduction. The student will be expected to take an active part in the problem-solving aspects of research including in-depth reading of the literature pertinent to the research project and participation in conferences and seminars. The student will work as part of the research team on one of the projects current in the department.

**Elective Schedule**

Can be taken during periods 1-11.  
Special instructions: Approval, dates, and duration of the course must be arranged with a faculty mentor prior to registering.

**Elective Locations**

Will depend on where research will take place (i.e., either in MDC or MDD buildings)

**Elective Activities**

Students on this rotation will be expected to learn and achieve the educational goals and objectives through the following methodologies and activities:

1. Develop hypothesis-driven research plan
2. Master specific research methodologies, such as biochemical assays, fluorescent imaging techniques, behavioral testing, and molecular biology techniques, required for successful completion of the project
3. Compile and analyze data

4. Develop tables and figures based on data
5. Derive conclusions and present data via verbal and/or written communication

### **FINAL GRADING RUBRIC**

#### **Satisfactory**

In order to be eligible for a grade of satisfactory (S), a student must achieve all of the following:

- Submits a well-written and thorough final report of the research project, including the introduction, methods, results, and discussion.
- Consistently demonstrates professional behavior.

#### **Incomplete**

A student will receive an incomplete (I) grade if the following occurs:

- The student has not submitted the final written report to the course director, but the student proactively asked for and received an extended due date.

#### **Unsatisfactory**

A student will receive a grade of unsatisfactory (U) if any of the following occur:

- The student fails to submit a final written report to the course director.
- The student consistently demonstrates unprofessional behavior.

#### **Professionalism:**

Any breach of the professionalism as described in the MCOM handbook including but not limited to the professionalism values section and the social media participation guidelines, may be grounds for remediation or failure of the course as determined by the course director in consultation with the Assistant Dean for the Clinical Curriculum.

### **GRADE APPEALS:**

A student may appeal a course grade if the student has evidence that the grade was assigned in an erroneous manner. Within five (5) school days after the receipt of the grade, the student may appeal in writing to the responsible Course director any assigned grade that they dispute. See handbook for details of the process.

**Students are expected to review and be familiar with the student handbook in general.**

<https://health.usf.edu/medicine/mdprogram/student-affairs/handbook>

**In particular for this course students are expected to review the following areas in the handbook for specific details:**

MCOM Clinical Years Monitoring Student Time Guideline

COM students are held to the same work hour guidelines as are residents, per ACGME guidelines. Students are limited to a maximum of 80 duty hours per week including in-house call, *averaged* over four weeks. Students must be given one day out of seven free from all clinical and educational responsibilities, *averaged* over four weeks. Students cannot be scheduled for in-house call more than once every three nights, *averaged* over four weeks. Students may not work more than 28 consecutive hours. Students should be given at least ten hours for rest and personal activities between daily duty periods and after in-house call. Students, residents, and faculty are not permitted to allow/require deviation from the above rules.

### MCOM Medical Student Clinical Supervision Guideline

Medical students may not provide care in an unsupervised fashion. Supervisors must either hold a faculty appointment or be supervised in their teaching and assessment role by an individual who has a faculty appointment. This may include residents, fellows, and other licensed health professional faculty supervising an activity within their scope of expertise or practice. Medical students may be supervised at one of two broad levels: 1) Direct observation or 2) Immediately available indirect supervision.

### Attendance

During the clinical years the student's responsibilities lie within the individual course. Attendance within a given course is a demonstration of attitude and professional behavior. This behavior impacts all members of the healthcare team, including fellow students and patients. Any absence from the course may have a direct impact on student performance, the clinical experience, the evaluation of professionalism, the overall grade, and the successful completion of the clerkship. Students who miss scheduled hours are expected to acquire the same level of competency as other students in the clerkship. Lectures, reading assignments and clinical duties will not be re-created or offset to accommodate any absences. **All absences are at the discretion of the course director. Students should follow the procedure guidelines for obtaining an excused absence outlined in the handbook.** The course director will use the guidelines outlined in the student handbook when determining if the absence is excused.

### Residency Interviews

Students are expected to schedule residency interviews during months that they are not scheduled to have a clinical course. Student may miss up to 2 days for interviews, but those days must be made up.

### Mistreatment Guideline and Procedure

USF Health's Morsani College of Medicine is committed to assuring a safe, encouraging, and supportive learning environment that reflects commitments to professionalism, respect, diversity, and virtues such as integrity, compassion, and kindness. All MCOM faculty and staff are expected to conduct themselves in a professional manner and contribute to creation of a culture that is supportive of learning. Mistreatment, bullying, discrimination, harassment, and sexual harassment are prohibited at MCOM. The student mistreatment policy, in accordance with LCME standard 3.6, ensures that concerns about the learning environment are promptly dealt

with and resolutions reached in a fair and just manner. The College forbids any retaliatory action against students who present grievances in good faith.

The MCOM Student Mistreatment policy aims to safeguard medical students from mistreatment by any faculty member or staff associated with MCOM, including clerkship directors, attending physicians, residents, and other medical students by:

- educating members of MCOM about student mistreatment;
- prohibiting medical student mistreatment by anyone associated with MCOM;
- encouraging the early identification of medical student mistreatment as a preventative measure;
- identifying individuals to whom medical students can report mistreatment;
- requiring those who receive complaints regarding student mistreatment to report the complaint to the appropriate administrator;
- providing a confidential system for reporting mistreatment;
- assuring confidentiality to the fullest extent possible;
- assuring that all reports of mistreatment will be thoroughly and promptly addressed;
- providing an avenue for corrective action.

Reports of mistreatment will preferably be addressed within an informal framework when appropriate, but formal procedures are available for use when necessary.

MCOM is committed to preventing mistreatment of medical students through education of the MCOM community. The policy and related procedures will be disseminated among MCOM on an annual basis. Additionally, MCOM will periodically use varying methods (e.g., email, workshops, orientations) to inform medical students, faculty, and staff about medical student mistreatment and the MCOM policy on addressing mistreatment.

### Professionalism Guidelines and Procedures

Professionalism is grounded in the fundamental values of honesty, integrity and fairness and is an essential part of the practice of medicine. Students are expected to display and will be examined by these exemplary behaviors. Students are expected to uphold their responsibility to their profession, and to appreciate that behaviors outside of the classroom and clinical learning environments can impact their progression through the program.

In addition to behavioral standards related to the medical profession, students are expected to uphold the principles of honor set forth by the University of South Florida in The Commitment to Honor code.

Attitudes or behaviors inconsistent with compassionate care; refusal by, or inability of, the student to participate constructively in learning or patient care; derogatory attitudes or inappropriate behaviors directed at patients, peers, faculty or staff; misuse of written or electronic patient records; or other unprofessional conduct can be grounds for dismissal and will be reviewed by the APRC.

### **Title IX:**

Title IX provides federal protections for discrimination based on sex, which includes discrimination based on pregnancy, sexual harassment, and interpersonal violence. In an effort to provide support and equal access, USF has designated all faculty (TA, Adjunct, etc.) as Responsible Employees, who are required to report any disclosures of sexual harassment, sexual violence, relationship violence or stalking. The Title IX Office makes every effort, when safe to do so, to reach out and provide resources and accommodations, and to discuss possible options for resolution. Anyone wishing to make a Title IX report or seeking accommodations may do so online, in person, via phone, or email to the Title IX Office. For information about Title IX or for a full list of resources please visit: <https://www.usf.edu/title-ix/gethelp/resources.aspx>. Students who aren't sure what to do, should contact victim advocacy. Call (813-974-5756), email ([va@usf.edu](mailto:va@usf.edu)) or come to the office (SVC 2057) to schedule an appointment. If students have urgent advocacy needs while the office is closed, an advocate is available through our 24/7 Victim Helpline at (813) 974-5757.

### **Diversity, Equity, and Inclusion Statement:**

The vision of the Morsani College of Medicine (MCOM) Student Diversity and Enrichment programs is to encourage and promote an environment that welcomes and embraces diversity in the student body. We diligently ensure that all students feel supported and accepted in order to optimize their educational experience. USF MCOM defines diversity not solely limited to race and ethnicity, but also encompass talents, life skills and special attributes.

Should you need further assistance or more information about our many USF Health Morsani College of Medicine's diversity-driven events, outreach, and support programs, please contact the Office of Student Diversity and Enrichment via:

- Email or Teams chat: [Osde@usf.edu](mailto:Osde@usf.edu)
- The OSDE contact page <https://health.usf.edu/medicine/mdprogram/offices/osde>

More information about USF Health and its commitment to diversity [can be found here](#).

For any disputes in which a student has allegedly violated USF policies or rules, please contact [The Office of the Student Ombudsman](#), at (813) 974-0835 or [Student Conduct and Ethical Development](#), ALN 109, (813) 974-9443 for assistance.

### **Evaluation Compliance Guideline**

Student feedback is an essential component for continuous quality improvement of our teaching faculty and curriculum development. Morsani College of Medicine (MCOM) has implemented the following guidelines for all students currently enrolled:

1. Students will be required to complete a minimum of 80% of the evaluations assigned to them

2. All evaluations should be completed within 25 days upon receipt
3. Students may suspend evaluations only given the following circumstances:
  - a. The evaluation was assigned in error
  - b. The student did not spend enough time with an educator to properly evaluate them
4. At most students will be permitted to suspend up to 20% of their evaluations. Once a student exceeds a 20% suspension rate their evaluations will be reviewed on a case by case basis
5. Comments provided on evaluations should be constructive, respectful, and made in a professional manner

***Please note that levels of anonymity are strictly enforced and fail safes are put into place to ensure a student cannot be identified from their evaluation.***

Student evaluation completion compliance rates will be monitored on a quarterly basis and any student found to be out of compliance at the time will be required to attend a mandatory one hour session to complete any pending evaluations. Students will receive a notice via email that they are required to attend the mandatory session to complete their evaluations. Failure to complete evaluations and/or attend the mandatory sessions may result in the following disciplinary actions:

1. A written notice from the Associate Dean of Undergraduate Medical Education
2. A mandatory meeting with the Associate Dean of Undergraduate Medical Education
3. Appearance before the Academic Performance Review Committee (APRC)

*\*Above is a summary of the USF Student Evaluation Guideline. Please review MCOM's Student Handbook for the full text of this guideline.*

### **Sessions Recording Guideline**

In this class, software will be used to record live class lectures and discussions. As a student in this class, your participation in live class discussions will be recorded. These recordings will be made available only to students enrolled in the class, to assist those who cannot attend the live session or to serve as a resource for those who would like to review content that was presented. Recording may be used in subsequent semester for instructional purposes in necessary. Participation in the sessions is considered consent for recording. In courses in which video of students might be captured due to online software being used, students who prefer to participate via audio only will be allowed to disable their video camera so only audio will be captured. A student's use of video during the session is considered consent for the video to be recorded and used as previously described.

This option to disable video will not apply to video proctored exams. Please discuss recording options with your instructor. Students may use the recordings as a resource to review content. Copying or distributing the video recordings by students is prohibited and considered a professionalism violation.

### **Student Accessibility and Accommodation**

University of South Florida Morsani College of Medicine (MCOM) is committed to providing equitable access to learning opportunities to students with documented disabilities (e.g., mental health, attentional, learning, chronic health, sensory, or physical).

To ensure access to this class, and program, please contact Student Accessibility Services to engage in a confidential conversation about the process for requesting reasonable accommodations in the classroom and clinical settings.

Accommodations are not provided retroactively. Students are encouraged to register with Student Accessibility Services as soon as they begin their program. The University of South Florida Morsani College of Medicine encourages students to access all resources available through Student Accessibility Services for consistent support and access to their programs. More information can be found online at [Student Accessibility Services](http://regulationspolicies.usf.edu/policies-and-procedures/pdfs/guideline-11-008.pdf).

### **LINK TO UNIVERSITY REGULATIONS AND POLICIES**

<http://regulationspolicies.usf.edu/policies-and-procedures/pdfs/guideline-11-008.pdf>

### MCOM Program Objectives

#### **1. Patient Care**

*Provide patient-centered care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health*

- 1.1 Perform all medical, diagnostic, and surgical procedures considered essential for the area of practice
- 1.2 Gather essential and accurate information about patients and their conditions through history-taking, physical examination, and the use of laboratory data, imaging, and other tests
- 1.3 Organize and prioritize responsibilities to provide care that is safe, effective, and efficient
- 1.4 Interpret laboratory data, imaging studies, and other tests required for the area of practice
- 1.5 Make informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date scientific evidence, and clinical judgment
- 1.6 Develop and carry out patient management plans
- 1.7 Counsel and educate patients and their families to empower them to participate in their care and enable shared decision-making
- 1.8 Provide appropriate referral of patients including ensuring continuity of care throughout transitions between providers or settings, and following up on patient progress and outcomes
- 1.9 Provide health care services to patients, families, and communities aimed at preventing health problems or maintaining health
- 1.10 Provide appropriate role modeling
- 1.11 Perform supervisory responsibilities commensurate with one's roles, abilities, and qualifications

*SELECT 1.12 Perform values-based patient-centered comprehensive assessment, diagnosis and patient management, utilizing shared decision making in care of the patient.*

#### **2. Knowledge for Practice**

*Demonstrate knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences, as well as the application of this knowledge to patient care*

- 2.1 Demonstrate an investigatory and analytic approach to clinical situations
- 2.2 Apply established and emerging bio-physical scientific principles fundamental to health care for patients and populations
- 2.3 Apply established and emerging principles of clinical sciences to diagnostic and therapeutic decision-making,



clinical problem-solving, and other aspects of evidence-based health care

- 2.4 Apply principles of epidemiological sciences to the identification of health problems, risk factors, treatment strategies, resources, and disease prevention/health promotion efforts for patients and populations
- 2.5 Apply principles of social-behavioral sciences to provision of patient care, including assessment of the impact of psychosocial and cultural influences on health, disease, care seeking, care compliance, and barriers to and attitudes toward care
- 2.6 Contribute to the creation, dissemination, application, and translation of new health care knowledge and Practices

*SELECT 2.7 Examine national and international health systems, policy and finance.*

### **3. Practice-Based Learning and Improvement**

***Demonstrate the ability to investigate and evaluate one's care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and life-long learning***

- 3.1 Identify strengths, deficiencies, and limits in one's knowledge and expertise
- 3.2 Set learning and improvement goals
- 3.3 Identify and perform learning activities that address one's gaps in knowledge, skills, and/or attitudes
- 3.4 Systematically analyze practice using quality improvement methods, and implement changes with the goal of practice improvement
- 3.5 Incorporate feedback into daily practice
- 3.6 Locate, appraise, and assimilate evidence from scientific studies related to patients' health problems
- 3.7 Use information technology to optimize learning
- 3.8 Participate in the education of patients, families, students, trainees, peers, and other health professionals
- 3.9 Obtain and utilize information about individual patients, populations of patients, or communities from which patients are drawn to improve care
- 3.10 Continually identify, analyze, and implement new knowledge, guidelines, standards, technologies, products, or services that have been demonstrated to improve outcomes

*SELECT 3.11 Demonstrate advanced competency in self- assessing knowledge gaps and setting improvement goals, then perform activities to accomplish these.*

*SELECT 3.12 Analyze a health care environment or system and recommend changes to improve patient outcomes.*

### **4. Interpersonal and Communication Skills**

***Demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals***

- 4.1 Communicate effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds
- 4.2 Communicate effectively with colleagues within one's profession or specialty, other health professionals, and health related agencies
- 4.3 Work effectively with others as a member or leader of a health care team or other professional group
- 4.4 Act in a consultative role to other health professionals
- 4.5 Maintain comprehensive, timely, and legible medical records
- 4.6 Demonstrate sensitivity, honesty, and compassion in difficult conversations, including those about death, end of life, adverse events, bad news, disclosure of errors, and other sensitive topics
- 4.7 Demonstrate insight and understanding about emotions and human responses to emotions that allow one to develop and manage interpersonal interactions

*SELECT 4.8 Demonstrate advanced team leadership skills that enhance team functioning, the learning environment, and/or the health care system.*

*SELECT 4.9 Communicate effectively and sensitively with patients, adjusting language and style in order to incorporate their knowledge, values, and culture.*

### **5. Professionalism**

***Demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles***

- 5.1 Demonstrate compassion, integrity, and respect for others
- 5.2 Demonstrate responsiveness to patient needs that supersedes self-interest
- 5.3 Demonstrate respect for patient privacy and autonomy
- 5.4 Demonstrate accountability to patients, society, and the profession
- 5.5 Demonstrate sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation
- 5.6 Demonstrate a commitment to ethical principles pertaining to provision or withholding of care, confidentiality, informed consent, and business practices, including compliance with relevant laws, policies, and regulations

*SELECT 5.7 Demonstrate advanced ability in all of the above [Core Professionalism objectives], and the ability to inspire and instruct peers in these areas*

## **6. Systems-Based Practice**

***Demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care***

- 6.1 Work effectively in various health care delivery settings and systems relevant to one's clinical specialty
- 6.2 Coordinate patient care within the health care system relevant to one's clinical specialty
- 6.3 Incorporate considerations of cost awareness and risk-benefit analysis in patient and/or population-based care
- 6.4 Advocate for quality patient care and optimal patient care systems
- 6.5 Participate in identifying system errors and implementing potential systems solutions
- 6.6 Perform administrative and practice management responsibilities commensurate with one's role, abilities, and qualifications

*SELECT 6.7 Show advanced ability to incorporate knowledge of health systems and cost of care into medical decisions.*

*SELECT 6.8 Strategize, practice, and advocate for quality improvement in patient care and health care systems. SECECT 6.9 Integrate knowledge of healthcare systems into individual patient care.*

## **7. Interprofessional Collaboration**

***Demonstrate the ability to engage in an interprofessional team in a manner that optimizes safe, effective patient- and population-centered care***

- 7.1 Work with other health professionals to establish and maintain a climate of mutual respect, dignity, diversity, ethical integrity, and trust
- 7.2 Use the knowledge of one's own role and the roles of other health professionals to appropriately assess and address the health care needs of the patients and populations served
- 7.3 Communicate with other health professionals in a responsive and responsible manner that supports the maintenance of health and the treatment of disease in individual patients and populations
- 7.4 Participate in different team roles to establish, develop, and continuously enhance interprofessional teams to provide patient- and population-centered care that is safe, timely, efficient, effective, and equitable

*SELECT 7.5 Demonstrate advanced team competencies in assessment and coaching in order to achieve a common patient-centered end.*

## **8. Personal and Professional Development**

***Demonstrate the qualities required to sustain lifelong personal and professional growth***

- 8.1 Develop the ability to use self-awareness of knowledge, skills, and emotional limitations to engage in appropriate help-seeking behaviors
- 8.2 Demonstrate healthy coping mechanisms to respond to stress
- 8.3 Manage conflict between personal and professional responsibilities
- 8.4 Practice flexibility and maturity in adjusting to change with the capacity to alter one's behavior
- 8.5 Demonstrate trustworthiness that makes colleagues feel secure when one is responsible for the care of patients
- 8.6 Provide leadership skills that enhance team functioning, the learning environment, and/or the health care delivery system
- 8.7 Demonstrate self-confidence that puts patients, families, and members of the health care team at ease
- 8.8 Recognize that ambiguity is part of clinical health care and respond by utilizing appropriate resources in dealing

with uncertainty

*SELECT 8.9 Demonstrate emotional intelligence by showing awareness of strengths, weaknesses, and idiosyncrasies of self, team, and systems, and then show the ability to modulate one's behavior to positively affect each of these.*

*SELECT 8.10 Describe the basic competencies necessary for effectiveness as a potential future physician and leader.*

*SELECT 8.11 Implement the professional and personal development process.*

*SELECT 8.12 Actively participate in one's own personal and professional development through individual and group coaching.*

### **MCOM Clinical – Specialty Track Phase Objectives**

Track EPA 1.1 Student will demonstrate the ability to gather a history

Track EPA 1.2 Student will demonstrate the ability perform a physical exam

Track EPA 2 Student will demonstrate the ability prioritize a differential diagnosis following a clinical encounter

Track EPA 3: Student will demonstrate the ability to recommend and interpret common diagnostic tests

Track EPA 4: Student will demonstrate the ability to enter and discuss orders and prescriptions

Track EPA 5.1: Student will demonstrate the ability to document a clinical encounter in the patient record

Track EPA 5.2: Student will demonstrate the ability to see multiple patients in a clinical session while maintaining accuracy and thoroughness of their history taking, physical exam skills, ability to create a differential diagnosis, implementation of the clinical plan and documentation.

Track EPA 6: Student will demonstrate the ability provide an oral presentation of a clinical encounter

Track EPA 7: Student will demonstrate the ability to form clinical questions and retrieve evidence to advance patient care

Track EPA 8: Student will demonstrate the ability to give or receive a patient handover to transition care responsibly

Track EPA 9: Student will demonstrate the ability to collaborate as a member of an interprofessional team

Track EPA 10: Student will demonstrate the ability to recognize a patient requiring urgent or emergent care and initiate evaluation and management

Track EPA 11: Student will demonstrate the ability to obtain consent for tests or procedures

Track EPA 12: Student will demonstrate the ability to perform procedures appropriate for their track specialty