

**Florida Agricultural & Mechanical University (FAMU)**

**School of Allied Health Sciences (SOAHS)**

**Standard Operating Procedures (SOP)**

**Manual for the Use of Human Anatomical Specimens**

**August 2023**

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# **Section I: Mission, Approved Teaching Faculty, Course Information**

## **1. Mission:**

The School of Allied Health (SOAH) is a Florida Agricultural and Mechanical University (FAMU) run program that is identified by the state as an organization responsible for receiving, storing, and utilizing human cadavers for the primary purpose of education. As such, SOAH must comply with the rules, regulations, and standard operating procedures established by the Florida Anatomical Board (the Board) and the State of Florida.

The Mission of the anatomical program associated with SOAH is to utilize human specimens to enhance and improve the education of graduate students who plan on eventually working within the medical field of Physical Therapy or Occupational Therapy. In addition, SOAH also provides educational enhancement for graduate students within the College of Science and Technology (Department of Biological Sciences) to learn and benefit from the use of anatomical specimens. SOAH will manage all Anatomical Board approved body donor resources and ensure that all involved with the handling of specimens will do so in a dignified, respectful and professional manner, and thereby ensure that every health professional utilizing these resources is well-educated to enhance the health and well-being of all people as paraphrased from the Board's mission statement.

The main office of SOAH is located in Lewis-Beck Building Suite 306 of FAMU main campus in Tallahassee, Florida. Anatomical specimens will be received, stored, and utilized in room 001B of Lewis-Beck building. The additional program utilizing the facilities includes the College of Science and Technology Department of Biological Sciences (CST-DBS), the chair of said program is located in room 211 Jones Hall of FAMU main campus.

## 1.1 Anatomy Education

**Preface:** Gross Anatomy Teaching Laboratories are rated as Biosafety Level 2 and there is a moderate potential hazard to personnel and the environment. Therefore, all participants in the laboratory shall observe safety precautions and security regulations as described below.

### 1.1.a. Biosafety Requirements

- **Pledge of Respect:** All individuals requesting access to the laboratory shall promise to follow the rules governing use of Human cadavers in teaching, research, and sign a “Pledge of Respect” document acknowledging these requirements. Forms will be administered by the faculty Instructor of the course; the signed and dated form will be kept on file for the duration of the course.
- **Required Training:** Entrants to the laboratory are required to be training on the potential hazards associated with the work involved, the necessary precautions to prevent exposures, and the exposure evaluation procedures deemed necessary by the Environmental Health and Safety office at that facility. Such training may include, but is not limited to blood-borne pathogen training (required annually) and Laboratory Safety Training. Laboratory safety procedures will be provided in writing and verbally communicated to every incoming group of students or trainees prior to the first gross anatomy laboratory session.

**1.1.b. Approved University Courses and Class Purpose:** Observation and/or dissection of cadavers shall be solely designated for graduate and undergraduate students in affiliation with the School of Allied Health and College of Science and Technology (Biological Sciences Department). These students shall be enrolled in the program and in a formal course, elective, module, or program sanctioned by the university. The current courses listed as containing anatomy content with clearly defined educational goals, outcomes and have been identified on the Specimen Request Form include Gross Anatomy Lecture and Lab (OTH 5241 and PHT 5115), and Neuroanatomy (OTH 5245 and PHT 5166). Permission for participation in the lab includes all students, relevant school faculty/instructors, volunteer clinical faculty (involved in the respective educational program), and anatomy

laboratory support staff (for preparation and management of anatomical material). It also includes all staff required for emergent situations during educational activities such as janitorial staff, facilities maintenance, IT management staff as needed for cleaning or repair work when cadavers are in view during laboratory sessions.

- All of the above-mentioned individuals shall complete and sign an Anatomical Board Pledge of Respect form prior to entering a laboratory with cadavers in view. These forms will be kept on file by the respective directors or chairperson over the program utilizing the lab space.

**1.1.c. Non-University Course Use of Lab Space:** In compliance with the Anatomical Board, pre-high school, high school, or undergraduate college students not associated with the course programs mentioned will not be allowed to enter or be given tours of anatomy laboratories when any human cadavers or anatomical specimens are in view. Exceptions to this include high school students enrolled in an educational course/experience with clearly definable educational goals and outcomes that may require studies using skeletons and isolated organs in rooms without cadavers or if the School of Allied Health is conducting interviews/tours of their facilities for prospective graduate students.

- Prior to bringing students into the laboratory, students shall be given an orientation preparing them for the activity they will be engaged.
- Students must complete and sign an Anatomical Board Pledge of Respect form prior to entering a laboratory with cadavers in view. These forms shall be kept on file by the respective programs.

**1.1.d. Removal of Specimens from lab:** In compliance with the Anatomical Board, no cadavers or anatomical specimens obtained from the Board will leave the approved laboratory for use in any other location in the institution or at any other location that is not an Anatomical Board approved facility.

## **1.2. Video Recording or Digital Photography in the Anatomy Laboratory**

**1.2.a.** All students shall be informed prior to a course, module or elective that any non-educational video or photography of any type of a cadaver or anatomical specimen in the anatomy laboratory is prohibited.

**1.2.b.** Video or still photography by faculty or students of non-specimen bones, models, or figures can only be done when cadavers are not in display or visibly observable.

**1.2.c.** Exceptions to the rule of no Video or still photography of cadavers by faculty or students is only permissible for educational purposes or to document findings related to cause of death using the following guidelines:

- Students or faculty are informed that under no circumstances should videos or photographs be allowed to be put on to the public internet or any other public venue. They can only be used within the institution's password protected intranet that is only accessible by students, faculty, and designated staff (i.e. for video editing).
- Videos or photographs used for educational purposes must not display any identifiable features such as tattoos, shots of the face to include full or side profiles.

### **1.3. Non-educational Use of Anatomical Specimens**

Any and all non-educational use of cadavers on FAMU campus, such as research must have prior approval by the Department and the College program planning on utilizing anatomical specimen and approval from the School of Allied Health, and the Anatomical Board or the Executive Director on behalf of the Anatomical Board.

**1.3 a.** Non-educational research use of cadaver permission requests must be written and addressed to the Dean of Allied Health, the Director of Physical Therapy, the Director of Occupational Therapy, the associated Dean and Division Director/Department Chair of the program planning on utilizing the cadavers. These requests must include a detailed explanation of the non-educational use of the cadavers and a list of those individuals (e.g., faculty and students) that are not involved in anatomical education, but will be working with the cadavers.



**1.3.b.** Privacy Rules apply to research on decedents, and thus all research projects on cadavers and/or human specimens provided by the Anatomical Board must have the following:

- A memorandum of intent submitted and signed by all parties involved
- A Submission of a Request for Decedent Research Form to the Board for approval.
- A Submission of a Request for Research Form to the Executive Director of the Anatomical Board for approval.

**1.3.c.** All individuals involved in non-educational use of cadavers shall complete and sign an Anatomical Board Pledge of Respect form prior to entering a laboratory with cadavers in view. These forms shall be kept on file by the respective programs.

## **2. Approved Teaching Facility:**

**Preface:** Gross Anatomy Teaching Laboratories are rated as Biosafety Level 2 meaning there is a moderate potential hazard to personnel and the environment. Therefore, all participants in the laboratory shall observe the designated safety precautions and security regulations as described in this document. Specific regulations will differ slightly between classes and any associated facility that is not attached to the main depository. Copies of all regulations to be observed at each facility are attached to this document, and will be made available to all participants in each laboratory course. Regulations will be updated and modified as needed.

### **2.1. Location of Approved Facility**

The location of the Depository for Anatomical Specimens is housed in room 107 of the Lewis-Beck building 334 Palmer Ave Tallahassee, Florida 32307. Administration of the use of this facility is via the School of Allied Health Sciences.

### **2.2. Facility Floor plan**

The depository is made up of several spaces including: a cold-room storage, teaching lab, locker space, and a bathroom. The facility meets the need for both handicapped and non-handicapped personnel. The entrance to the lab is found on the west side of the hallway leading to the room but on the east wall of the locker room. The entrance is magnetically

locked and linked to an electronic card reader which only opens the door with proper approved FAMU ID. The card can open the door from the outside but a motion detector unlocks the door from the inside. This is the main entrance to the depository space/teaching lab but the room can be accessed via the emergency exits located on the north-east corner and the south-west corner of the teaching lab. Cadavers are stored in a cold room to the south of the teaching lab. Students store personal items and associated lab materials in the lockers on the west wall of the locker space. The teaching lab is approximately 50 feet in length by 25 feet wide by 13 feet in height giving total cubic feet of 16,250. There is an emergency eye wash and shower in the south-east corner of the teaching lab and a first aid kit located in the upper cabinet on the north wall nearest the emergency exit. There is air conditioning and ventilation for the teaching lab and air conditioning for the cold room. Additionally, the teaching lab contains a fire alarm, smoke detector, fire extinguisher, and fire sprinklers in case of fire.



### 3. Access to Teaching Laboratory Facilities:

**Preface:** Access to the teaching laboratories is restricted to designated students, staff and faculty. These individuals will have access during times specified by each facility and faculty member. All approved individuals shall complete an appropriate Pledge of Respect Form associated with their level of authorization or access to the FAMU human specimen depository and lab.

**3.1. Approved Teaching Faculty:** Approved faculty include all teaching faculty who will be teaching course material in the teaching portion of the depository and utilizing the human specimens stored in the cold room. This also includes any and all instructors, teaching assistants, and exam proctors who meet the approved requirements.

**3.2. Approved Non-Teaching Staff:** Approved non-teaching staff includes but are not limited to janitorial staff, maintenance personnel, environmental health inspectors, and IT employees all of whom may need access to the depository to ensure facility upkeep and continued functionality.

**3.3. Approved Students:** Approved students included any and all students who are taking administered courses being housed in the depository facility, have met the approved training, and have signed the Anatomical Board Pledge of Respect.

**3.4. Visitation of facilities:** No visitors are allowed in the facilities at any time, except by permission of an accompanying faculty member or designated staff, or written permission from The Executive Director or their appointed representative.

**3.5. Special at-risk individuals:** Persons with medical conditions (allergies, pregnancy) or who are at increased risk of acquiring infection should undergo risk evaluation before entering the laboratory.

**3.6. “Pledge of Respect” Forms:** an appropriate Pledge of Respect Form shall be read, and signed by each individual who seeks authorization or access to the FAMU human specimen depository and lab. There are forms for faculty, staff, students, and visitors. Once signed, the form will remain kept by SOAHS for the duration of the authorization for that individual. These forms can be found below.

### 3.6.a. Pledge of Respect for Faculty



**ANATOMICAL BOARD OF THE  
STATE OF FLORIDA**

Florida Agricultural & Mechanical University  
School of Allied Health Sciences  
334 W. Palmer Ave. Lewis Beck State 308  
Tallahassee, FL 32307  
Telephone: 1-850-599-3818

Miami Office:  
University of Miami  
Miller School of Medicine  
Office of Medical Education  
P.O. Box 016990 (R-160)  
Miami, FL 33101  
Telephone: 305-243-8891

Orlando Office:  
University of Central Florida  
College of Medicine  
Health Sciences Campus-Lake Nona  
6950 Lake Nona Blvd.  
Orlando, FL 32827-7408  
Telephone: 407-266-1542

Tallahassee Office:  
Florida State University  
College of Medicine  
1115 West Call Street  
Box 30643000  
Tallahassee, FL 32306-4300  
Telephone: 850-645-8449

Gainesville Office:  
University of Florida  
College of Medicine  
Health Sciences Center  
PO Box 100285  
Gainesville, FL 32610-0285  
Telephone: 352-352-3588

### Pledge of Respect

**Policies and Procedures Applicable to** \_\_\_\_\_ **Faculty.**

Once a donated human anatomical specimen is made accessible to a faculty member of the \_\_\_\_\_ University), \_\_\_\_\_, the responsibility for the security and proper storage of the human anatomical specimen is that of the faculty member and the faculty member's program. Consonant with this responsibility, and in addition to forms to be completed as required by the Anatomical Board of the State of Florida, every faculty member having access to human anatomical specimens will be required to sign the following pledge prior to receiving a donated human anatomical specimen provided by the Anatomical Board:

#### **Pledge of Respect for the Sanctity of Donated Human Anatomical Specimens**

I, the undersigned faculty member, recognize that the bequest of human remains to the Anatomical Board of the State of Florida represents a direct and important contribution to medical teaching and research. Such donations allow health professional faculty and students the opportunity to closely examine, evaluate, and understand the detailed structure of the human body. Further, the caring and thoughtfulness of such bequests provides physicians and research scientists with the opportunity to gain knowledge that may prolong, improve, or save someone's life. Without such bequests, medical science and health care would suffer devastating setbacks.

In recognition of the generosity of such bequests, I understand that the policy of the Anatomical Board of the State of Florida is to treat donated human anatomical specimens with the utmost respect and gratitude at all times, and I pledge to comply with this policy. I acknowledge HIPAA and other privacy regulations continue to protect individuals' health information after death. I also acknowledge that NO PHOTOGRAPHY of any part of any human specimen is permitted without permission from the Executive Director of the Anatomical Board. I further pledge that the donated human anatomical specimens to which I have access will remain in specific teaching/research rooms or storage space approved for such use by the Anatomical Board, unless a signed authorization for transfer elsewhere has been executed by the Executive Director of the Anatomical Board of the State of Florida or his/her authorized designee. I further pledge to comply with all applicable requirements for timely return of human anatomical specimens to the Anatomical Board of the State of Florida.

If I am or become a course instructor for a course which requires access to human anatomical specimens, I pledge that I will allow no individuals other than authorized faculty and students/ participants registered in my course/program to view or to have access to any human anatomical specimens to which I have access without written authorization from the Executive Director of the Anatomical Board of the State of Florida or his/her authorized designee.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

Typed or Printed Name: \_\_\_\_\_

Title: \_\_\_\_\_

Department/College: \_\_\_\_\_

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### 3.6.b. Pledge of Respect for Employees/Staff



#### ANATOMICAL BOARD OF THE STATE OF FLORIDA

Miami Office:  
University of Miami  
Miller School of Medicine  
Office of Medical Education  
P.O. Box 016060 (R-160)  
Miami, FL 33101  
Telephone: 305-243-8891

Orlando Office:  
University of Central Florida  
College of Medicine  
Health Sciences Campus-Lake Nona  
8550 Lake Nona Blvd.  
Orlando, FL 32827-7403  
Telephone: 407-266-1142

Tallahassee Office:  
Florida State University  
College of Medicine  
1115 West Call Street  
Box30643000  
Tallahassee FL 32306-4300  
Telephone: 850-645-8449

Gainesville Office:  
University of Florida  
College of Medicine  
Health Sciences Center  
PO Box 100285  
Gainesville, FL 32610-0235  
Telephone: 352-362-3589

Florida Agricultural & Mechanical University  
School of Allied Health Sciences  
334 W Palmir Ave Lower Bldg Suite 308  
Tallahassee FL 32307  
Telephone: 1-850-899-3818

### Pledge of Respect

**Policies and Procedures Applicable to** (Name of University) \_\_\_\_\_  
**Employees Who Are Not Faculty, Residents or Students.**

Whenever a donated human anatomical specimen is made accessible to a (Name of University) \_\_\_\_\_ employee, as part of their assigned work, the employee will be required to sign the following pledge prior to having access to a donated human anatomical specimen provided by the Anatomical Board:

#### **Pledge of Respect for the Sanctity of Donated Human Anatomical Specimens**

I, the undersigned employee, recognize that the bequest of human remains to the Anatomical Board of the State of Florida represents a direct and important contribution to medical teaching and research. Such donations allow health professional faculty and students the opportunity to closely examine, evaluate, and understand the detailed structure of the human body. Further, the caring and thoughtfulness of such bequests provides physicians and research scientists with the opportunity to gain knowledge that may prolong, improve, or save someone's life. Without such bequests, medical science and health care would suffer devastating setbacks.

In recognition of the generosity of such bequests, I understand that the policy of the Anatomical Board of the State of Florida is to treat donated human anatomical specimens with the utmost respect and gratitude at all times, and I pledge to comply with this policy. I acknowledge HIPAA and other privacy regulations continue to protect individuals' health information after death. I also acknowledge that NO PHOTOGRAPHY of any part of any human specimen is permitted without permission from the Executive Director of the Anatomical Board. I further pledge that the donated human anatomical specimens to which I have access will remain in teaching/research rooms or specific storage space approved for such use by the Anatomical Board, unless a signed authorization for transfer elsewhere has been executed by the Executive Director of the Anatomical Board of the State of Florida or his/her authorized designee. I further pledge to comply with all applicable requirements for timely return of human anatomical specimens to the Anatomical Board of the State of Florida.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

Typed or Printed Name: \_\_\_\_\_

Title: \_\_\_\_\_

Department/College: \_\_\_\_\_

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### 3.6.c. Pledge of Respect for Student



#### ANATOMICAL BOARD OF THE STATE OF FLORIDA

Miami Office:  
University of Miami  
Miller School of Medicine  
Office of Medical Education  
P.O. Box 016060 (R-160)  
Miami, FL 33101  
Telephone: 305-243-8881

Orlando Office:  
University of Central Florida  
College of Medicine  
Health Sciences Campus-Lake Nona  
6850 Lake Nona Blvd.  
Orlando, FL 32827-7408  
Telephone: 407-268-1142

Tallahassee Office:  
Florida State University  
College of Medicine  
1115 West Call Street  
Box30643000  
Tallahassee FL 32306-4300  
Telephone: 850-645-8449

Gainesville Office:  
University of Florida  
College of Medicine  
Health Science Center  
PO Box 100085  
Gainesville, FL 32610-0235  
Telephone: 352-362-3588

Florida Agricultural & Mechanical University  
School of Allied Health Sciences  
334 W Palmer Ave Lewis Beck Suite 306  
Tallahassee FL 32307  
Telephone: 1-850-599-3818

### Pledge of Respect

#### Policies and Procedures Applicable to \_\_\_\_\_ (Name of University) Students and Residents/Fellows.

Once a donated human anatomical specimen is made accessible to a faculty member of the \_\_\_\_\_  
(Name of University) \_\_\_\_\_, the responsibility for the security and proper storage of the human anatomical specimen is that of the faculty member and the faculty member's program. Consonant with this responsibility, every student and resident having access to human anatomical specimens under the supervision of the faculty member will be required to sign the following pledge prior to having access to a donated human anatomical specimen provided by the Anatomical Board:

#### Pledge of Respect for the Sanctity of Donated Human Anatomical Specimens

I, the undersigned student, resident or fellow, recognize that the bequest of human remains to the Anatomical Board of the State of Florida represents a direct and important contribution to medical teaching and research. Such donations allow health professional faculty and students the opportunity to closely examine, evaluate, and understand the detailed structure of the human body. Further, the caring and thoughtfulness of such bequests provides physicians and research scientists with the opportunity to gain knowledge that may prolong, improve, or save someone's life. Without such bequests, medical science and health care would suffer devastating setbacks.

In recognition of the generosity of such bequests, I understand that the policy of the Anatomical Board of the State of Florida is to treat donated human anatomical specimens with the utmost respect and gratitude at all times, and I pledge to comply with this policy. I acknowledge HIPAA and other privacy regulations continue to protect individuals' health information after death. I also acknowledge that NO PHOTOGRAPHY of any part of any human specimen is permitted without permission from the Executive Director of the Anatomical Board. I further pledge that the donated human anatomical specimens to which I have access will remain in specific teaching/research rooms or storage space approved for such use by the Anatomical Board, unless a signed authorization for transfer elsewhere has been executed by the Executive Director of the Anatomical Board of the State of Florida or his/her authorized designee. I further pledge to comply with all applicable requirements for timely return of human anatomical specimens to the Anatomical Board of the State of Florida.

\_\_\_\_\_  
Signature Date

Typed or Printed Name: \_\_\_\_\_

Title: \_\_\_\_\_

Department/College: \_\_\_\_\_

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### 3.6.d. Pledge of Respect for Visitors/ Invited Guests



Florida Agricultural & Mechanical University  
School of Allied Health Sciences  
334 W Palmer Ave Lewis Beck Suite 308  
Tallahassee FL 32307  
Telephone: 1-850-599-3818

#### ANATOMICAL BOARD OF THE STATE OF FLORIDA

Miami Office:  
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Telephone: 305-243-6601

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College of Medicine  
Health Sciences Campus-Lake Nona  
6850 Lake Nona Blvd.  
Orlando, FL 32827-7408  
Telephone: 407-268-1142

Tallahassee Office:  
Florida State University  
College of Medicine  
1115 West Coll Street  
Box 30943000  
Tallahassee FL 32306-4300  
Telephone: 850-645-8449

Gainesville Office:  
University of Florida  
College of Medicine  
Health Science Center  
PO Box 100295  
Gainesville, FL 32610-0295  
Telephone: 352-362-3588

### Pledge of Respect

**Policies and Procedures Applicable to Invited Guests of the** (Name of University) \_\_\_\_\_

Once a donated human anatomical specimen is made accessible to a faculty member of the (Name of University) \_\_\_\_\_, the responsibility for the security and proper storage of the human anatomical specimen is that of the faculty member and the faculty member's program. Consonant with this responsibility, every invited guest having access to human anatomical specimens under the auspices of the faculty member will be required to sign the following pledge prior to having access to a donated human anatomical specimen provided by the Anatomical Board:

#### Pledge of Respect for the Sanctity of Donated Human Anatomical Specimens

I, the undersigned invited guest, recognize that the bequest of human remains to the Anatomical Board of the State of Florida represents a direct and important contribution to medical teaching and research. Such donations allow health professional faculty and students the opportunity to closely examine, evaluate, and understand the detailed structure of the human body. Further, the caring and thoughtfulness of such bequests provides physicians and research scientists with the opportunity to gain knowledge that may prolong, improve, or save someone's life. Without such bequests, medical science and health care would suffer devastating setbacks.

In recognition of the generosity of such bequests, I understand that the policy of the Anatomical Board of the State of Florida is to treat donated human anatomical specimens with the utmost respect and gratitude at all times, and I pledge to comply with this policy. I acknowledge HIPAA and other privacy regulations continue to protect individuals' health information after death. I also acknowledge that NO PHOTOGRAPHY of any part of any human specimen is permitted without permission from the Executive Director of the Anatomical Board. I further pledge that the donated human anatomical specimens to which I have access will remain in specific teaching/research rooms or storage space approved for such use by the Anatomical Board, unless a signed authorization for transfer elsewhere has been executed by the Executive Director of the Anatomical Board of the State of Florida or his/her authorized designee. I further pledge to comply with all applicable requirements for timely return of human anatomical specimens to the Anatomical Board of the State of Florida.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

Typed or Printed Name: \_\_\_\_\_

Title: \_\_\_\_\_

Department/College: \_\_\_\_\_

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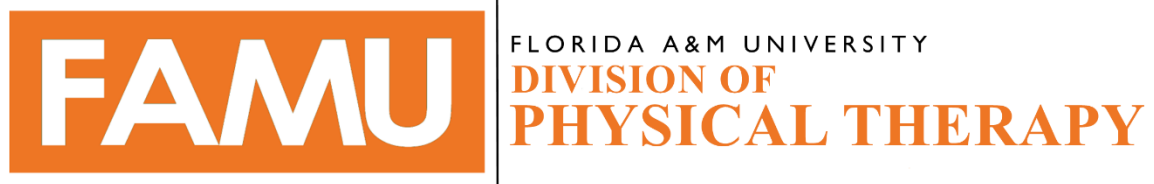
### 3.7. Minimum number of individuals allowed in lab:

**3.7.a.** In Teaching lab while cadavers are in cold storage room the minimum number of people is one if the person is an approved faculty or staff. However, approved students or visitors must have an approved accompanied faculty or staff with them.

**3.7.b.** When cadavers are in teaching lab minimum number of individuals should be no less than two if the approved instructor is one of the two. Otherwise, in order to deal with any emergency that might affect an individual, the room should have minimum of three to allow for one person to stay with injured while the other seeks help.

## 4. Course information: Example Course Syllabus:

**Preface:** Student education is regulated by the syllabus administered to them at the beginning of the course. This syllabus dictates the material covered and timeframe by which the students will cover material over the period of time for the associated course or courses applicable. The Syllabus for Gross Anatomy Lecture and Lab (PHT 5115) and Neuroanatomy (OTH 5245 and PHT 5166) are included in the SOP below.



### PHT 5115 Gross Anatomy Lecture/Lab Syllabus

**Number and Title:** PHT5115C

**Professional Year:** Fall 2023

**Credit hours and Clock Hours:** 4 Credit hours/ 6 Contact Hours.

**Time & Location:** Lecture Tu/Th 9:30 am - 10:45 am (Lewis-Beck room TBA)  
Lab Tu/Th 11:00 am – 12:00 pm

**Modality:**

- Face to Face  
 AD - All Distance (100% Online)

PD - Primarily Distance (80-99% Online)

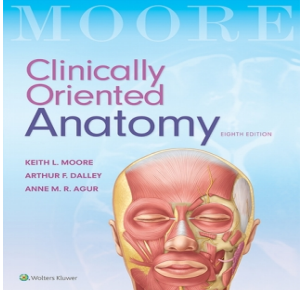
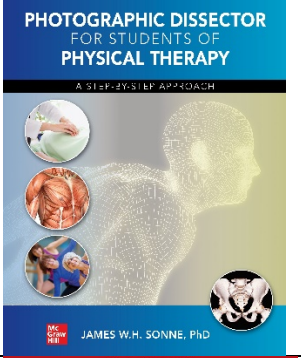
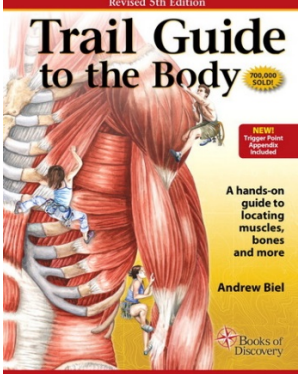
HB - Hybrid (50-79% Online)

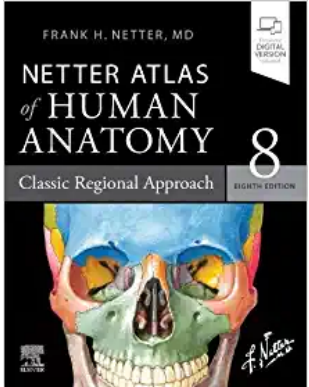
**Instructors:**

<b>Sherif Gendy, MD, Ph.D.</b>	<b>Adrian McCollum, Ph.D.</b>
Lewis-Beck Allied Health Bldg Rm. 308	Jones Hall Rm. 511
<a href="mailto:sherif.gendy@famuc.edu">sherif.gendy@famuc.edu</a>	<a href="mailto:adrian.mccollum@famuc.edu">adrian.mccollum@famuc.edu</a>
Office Hours: T/Th 1:00 pm – 2:30 pm	Mon 9:30 am to 12:30 pm

**Prerequisite:** Successfully completed all the prerequisites for the DPT program admission.

**Required text books and materials:**

Author(s)	Text Name/Edition	Publisher	Picture
Keith L. Moore	<b>Clinically Oriented Anatomy (9th or newest Edition)</b>	Wolters Kluwer	
* James W.H. Sonne	<b>Photographic Dissector for Students of Physical Therapy: A Step-by-Step Approach</b>	McGraw-Hill Education	
Andrew Biel	<b>Trail Guide to the Body</b>	Pearson	

<b>**Frank H. Netter</b>	<b>Netter Atlas of Human Anatomy</b>	<b>Elsevier</b>	
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\*Textbooks may be accessed digitally through <https://accessphysiotherapy.mhmedical.com>

\*\* Recommended book

### **Teaching Methods:**

Teaching methods may include lectures, assigned readings, video presentations, group discussions, writing assignments, and laboratory demonstrations. In addition, the following activities/methods will be performed:

Human cadaver lab dissection

3D Platform Complete Anatomy digital platform

Lab dissection videos

### **Course Description:**

Basic Description of the Musculoskeletal System. Lecture and Laboratory with Emphasis Placed on Locating Muscle, Associated Joints, Ligaments, Tendons, Nerves, And Blood Supply. Human Structures Are Reviewed by Regions and Include Clinical Correlations.

### **Expected Learning Outcomes:**

Upon successful completion of this course, the student will be able to examine and compare relationship to case study presentation:

Understand the structures and purposes of basic components of eukaryotic cells, especially macromolecules, membranes, and organelles, acquire the ability to recognize different types of tissue and able to identify the organ of origin from histological slides, [7A: *BIOLOGICAL MAJOR SYSTEMS AND ORGANS, PHYSICAL, BEHAVIORAL & MOVEMENT SCIENCES CAPTE standard*].

Demonstrate the relationship of anatomical structures of the musculoskeletal system and its peripheral innervations in different body regions, evaluate and interpret current literature related to musculoskeletal and neuromuscular structure and function. [7A: *MAJOR MUSCLE GROUPS/MUSCULOSKELETAL SYSTEM CAPTE standard*] a Initial Assessment (IA), [7A: *NERVOUS SYSTEM CAPTE standard*].

Use appropriate anatomical and other scientific language and terminology to effectively communicate with all individuals when engaged in physical therapy practice. Understand the implications of cultural differences as it relates to anatomical structure, including skeletal and integument, the structure and axes of various joints of the body.

Relate anatomical structure and function to systems review and examination, including but not limited to thorax (respiration) alignment of axial and appendicular skeleton for gait, balance and posture, joint structure and function for stability and mobility, muscle structure and location for movement and strength of contraction. [7A: *SKELETAL - JOINT INTEGRITY AND MOBILITY CAPTE standard*].

Synthesize data obtained through anatomical examination to complete therapy evaluation, process knowledge gained from anatomical examination for purpose of differential diagnosis.

Identify the major organs in the abdominal cavity and pelvic cavities with both male and female orientation. [7A: *BIOLOGICAL MAJOR SYSTEMS AND ORGANS, PHYSICAL, BEHAVIORAL & MOVEMENT SCIENCES CAPTE standard*].

Demonstrate the relationship between the cardiovascular, pulmonary systems of the body, and blood supply to various regions of the body. [7A: *BIOLOGICAL MAJOR SYSTEMS AND ORGANS, PHYSICAL, BEHAVIORAL & MOVEMENT SCIENCES CAPTE standard*].

Identify early development of nervous system and malformation, examine and compare normal reflexes versus pathological reflexes. [7A: *NERVOUS SYSTEM CAPTE standard*].

Identify the difference between normal and abnormal imaging finding. [7A: *Radiographic/Imaging Anatomy CAPTE standard*].

## **Course Objectives**

### **Critical Thinking: (Cognitive Domain)**

DPT graduates will show their capacity to evaluate and utilize published literature critically to support critical thinking, problem-solving, and evidence-based practice, which play a significant role in physical therapy practice, Demonstrate the ability to apply anatomical concepts in systems review for clinical judgment and decision-making.

### **Content Knowledge: (Psychological Domain)**

DPT graduates will exhibit the capacity to examine people for physical therapy or references to other health experts; examine the patient/client to create a suitable diagnosis; design and handle a thorough physical therapy treatment plan; monitor and systemically assess care results

### **Professional Behavior: (Affective Domain)**

The DPT graduates will demonstrate private behaviors that reflect their position and accountability as a professional who advocates for the promotion of health and illness prevention in underserved populations, recognizes the impact of social, economic, legislative and demographic variables on healthcare delivery, and demonstrates their respect for these variables.

**D. Cognitive Objectives:** Upon completion of this course, students will be able to:

Understand the structures and purposes of basic components of eukaryotic cells, especially macromolecules, membranes, and organelles, acquire the ability to recognize different types of tissue and

able to identify the organ of origin from histological slides, [7A: *BIOLOGICAL MAJOR SYSTEMS AND ORGANS, PHYSICAL, BEHAVIORAL & MOVEMENT SCIENCES CAPTE standard*].

Demonstrate the relationship of anatomical structures of the musculoskeletal system and its peripheral innervations in different body regions, evaluate and interpret current literature related to musculoskeletal and neuromuscular structure and function. [7A: *MAJOR MUSCLE GROUPS/MUSCULOSKELETAL SYSTEM CAPTE standard*], [7A: *NERVOUS SYSTEM CAPTE standard*].

Use appropriate anatomical and other scientific language and terminology to effectively communicate with all individuals when engaged in physical therapy practice. Understand the implications of cultural differences as it relates to anatomical structure, including skeletal and integument, the structure and axes of various joints of the body.

Relate anatomical structure and function to systems review and examination, including but not limited to thorax (respiration) alignment of axial and appendicular skeleton for gait, balance and posture, joint structure and function for stability and mobility, muscle structure and location for movement and strength of contraction. [7A: *SKELETAL - JOINT INTEGRITY AND MOBILITY CAPTE standard*].

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Demonstrate the relationship between the cardiovascular, pulmonary systems of the body, and blood supply to various regions of the body. [7A: *BIOLOGICAL MAJOR SYSTEMS AND ORGANS, PHYSICAL, BEHAVIORAL & MOVEMENT SCIENCES CAPTE standard*].

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Identify the difference between normal and abnormal imaging finding. [7A: *Radiographic/Imaging Anatomy CAPTE standard*].

### **Course Outline and Schedule**

Subject content will be divided into **four** blocks:

1. Module 1: Back and Shoulder
2. Module 2: Upper Extremity
3. Module 3: Lower Limb and Pelvis and Perineum
4. Module 4: Thorax, Abdomen, TMJ

### **Course schedule**

<b>Week</b>	<b>Chapter and Subject in Lecture Book</b>	<b>Chapter</b>
Aug 29	Course Intro Overview	Ch 1

Aug 31	(Anatomical Terminology, Planes, Axes, Joints, system review)	Ch 1
Sep 12	Back	Ch 4
Sep 19	Exam 1 (Class Examination and Lab Practical)	Ch 1&4
Sep 26	Upper Extremity	Ch 6
Oct 03	Shoulder, Elbow	Ch 6
Oct 05	Wrist and Hand	Ch 6
Oct 07 <sup>th</sup>	Exam 2 (Class Examination and Lab Practical)	Ch 6
Oct 10	Pelvis and Perineum	Ch 3
Oct 17	Lower Extremity ;Hip, Knee,	Ch 5
Oct 24	Lower Extremity; Ankle and Foot	Ch 5
Nov 07	Exam 3 (Class Examination and Lab Practical)	Ch 3 & 5
Nov 14	Thorax	Ch1
Nov 21	Abdomen	Ch 2
Nov 28	Head (Temporomandibular Joint)	Ch 7
Dec 07	Final Exam (Class Examination and Lab Practical)	Cumulative

## Grades:

Your overall grade will be determined by following activities. There are no make-up exams in this course without an excused absence signed by the Dean. You should speak with your instructor before the test or the week of the test if you need to miss or have missed a scheduled test. There are no make-up quizzes at all regardless of the excuse.

Graded Items	% of Final Grade	Points
Class Participation	7.5%	150
Group Case Study Discussion	7.5%	150
Quizzes	10%	(4 @ 50 points) 200
Lecture Examinations	40%	(4 @200 points) 800
End of the semester Comprehensive	10%	200
Lab Participation and ethics	5%	100
Lab Examinations	20%	(4 @100 points) 400
	<b>100%</b>	<b>Total Points: 2000</b>

\* All exams, assignments, and quizzes are required to be taken via **Respondus Lockdown Browser** <http://www.famu.edu/index.cfm?online&Respondus>.

**GRADING SCALE:** Final grades assigned for this course will be based on the number of total points earned and are assigned as follows:

Total Number of Points Earned	Performance Achievement of Objectives	GPA(Grade)
1800 - 1000	90% to 100%	4.0 (A)
1600 - 1794	80% to 89%	3.0 (B)
1400 - 1594	70% to 79%	2.0 (C)
0 - 1394	0% to 69%	F

## Required Technology

Internet connection (DSL, LAN, or cable connection desirable)

Access to Canvas.

Zoom etc

Web Camera

Headset with microphone

## Course Structure.

This course lecture will be delivered face to face and through the course management system Canvas. You

will use your FAMNet username and password to login to the course from the FAMU Canvas login page.

In Canvas, you will access online lessons, course materials, and resources. At designated times throughout the semester, we may participate in a blend of self-paced and group-paced activities using Canvas and alternative Internet-based technologies. Activities may consist of chat, discussion forums, and web conferences.

FAMU Canvas Access to access this course on FAMU Canvas you will need access to the Internet and a supported Web browser (Firefox, Safari, and Google Chrome).

### **Technical Assistance:**

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Contact the Office of Instructional Technology at 850-599-3460 or [oit@famuedu](mailto:oit@famuedu)

View tutorials to learn more about using Canvas

### **COURSE POLICIES/PROCEDURES**

Students are responsible for complying with the School of Allied Health Sciences, DPT Student Handbook's policies on Attendance, Dress Code and Conduct, Academic Honor, and Academic Affairs. Students are expected to prepare reading assignments ahead of each session and to actively participate in class. The following policies will also apply to this course:

*Audio recording and video taping of faculty is allowed during classes at any time and without advance notification. These recordings must be solely for individual use, in support of complaints, as evidence for criminal cases). However, a student may only post or share said recording with written faculty permission. A student cannot record labs, quizzes, exams. -Disciplinary action or additional steps may be taken by the faculty if a student does not comply with these requirements. Unauthorized file-sharing or distribution of all or any portion of a recorded classroom lecture may be deemed a violation of the Student Code of Conduct and other applicable laws. Students who wish to record a classroom lecture as part of an accommodation under the Americans with Disabilities Act shall work with FAMU's Center for Disability Access and Resources (CeDAR) to receive the accommodation.*

**Class attendance** is compulsory for all students. A student will be permitted one unexcused absence per credit hour of the course he or she is attending. A student exceeding the number of unexcused absences may be dropped from the course and assigned a grade of "F". Students may be readmitted to the class with the Director's permission. Refer to the School of Allied Health Sciences' Policy Manual for the excused absence policy.

**Participation** Students are expected to participate in all online activities as listed on the course calendar.

It is recommended that you access this course a minimum of four times a week.

**Assignments** must be submitted by the given deadline per the eastern time zone.



**MAKE UP EXAMS ARE GIVEN ONLY WITH AN AUTHORIZED EXCUSE.** Documentation of signatures on “signature sheets” will serve as evidence of students’ attendance to class. It is the responsibility of the student to secure this signature.

**Dress Code:** Students must remember that this is a professional school and as such the students are to display an appropriate level of judgment with regard to personal hygiene, grooming and wearing of undergarments. Students are required to follow the School’s dress code as an integral part of their professional training. Students must attend class dressed in appropriate clothing or they will be sent home to change clothing. In such cases, students will be considered late or absent.

**Eating and drinking** are not permitted in classroom or laboratory settings.

**FAMU’s Academic Honesty Policy & Procedures:** “All members of, and participants in, the academic life of the University are to be governed by academic honesty in all of their endeavors. Students and faculty are expected to uphold academic integrity and combat academic dishonesty”.

**Academic Dishonesty/Plagiarism:** shall include referring to written information not specifically condoned by the instructor. It shall further include receiving unauthorized written or oral information from a fellow student. In the instance of papers written outside of the class, academic dishonesty shall include plagiarism. Plagiarism may be specifically defined for the purposes of any course by the instructor involved. Unless otherwise defined, plagiarism shall include failure to use quotation marks or other conventional markings around material quoted from any course. shall also include paraphrasing a specific passage from a specific source without indicating accurately its source. Plagiarism shall further include letting another person compose or rewrite a written assignment.

**Disorderly Conduct:** Behavior that disturbs the peace or undermines public safety, such as causing a disturbance or being unruly; failure to comply with the lawful order or reasonable request of an identified University official, any non-University law enforcement official, any non-University emergency responder, or any protective order.

**Disruptive Behavior:** Disruption of a class, curricular, or University activity; obstruction of the free flow of pedestrian or vehicular traffic on University premises; interference with the rights of others to carry out their activities or duties at, or on behalf of the University; interference with the freedom of movement of any member or guest of the University; interference with the academic freedom and freedom of speech of any member or guest of the University; or any other act that impairs, interferes with or obstructs the mission, purposes, academic atmosphere, operations, processes, orderly conduct and/or functions of the University or the rights of other members of the University community.

**Harassment:** Verbal or written abuse (including electronic communications or internet activity), threats, intimidation, coercion and/or other conduct that endangers the health, safety, or welfare of others, or places another individual in reasonable fear of physical harm or creates a hostile environment in which others are unable to reasonably conduct or participate in work, education, research, living or other activities. Harassment also includes actions defined in University Regulation 10.103.

**Noncompliance with a University Official's Directive:** Failure to comply with oral or written instruction from a University official (i.e. faculty, staff, administration, residence hall staff, law enforcement officer) acting within the scope of their job duties.

**Violation of Law:** Violation of federal or state law or rules, local ordinance, or laws of other national jurisdictions; Florida Board of Governors Regulation; any other University regulation rule, or University Board of Trustees Policy.

**Professional Responsibilities:** A student may be dismissed from the program, after due process, by reason of conduct unbecoming a professional student. Furthermore, the Division of Physical Therapy will graduate only those students it deems ready to accept the moral, ethical, and professional responsibilities of the practice of physical therapy. Consequently, the Division reserves the right to withhold recommendation for graduation of any student who does not conform to these standards of readiness.

**Unprofessional Conduct:** is behavior(s) unbecoming of a professional, including but not limited to: violation of rules, inappropriate dress or language, private conversations during lectures and presentations, rudeness to the professor, classmates, or patients. Each violation will be placed in writing in the student's permanent file. Depending on the nature of the violation or in the event of two incidents, a student will be referred for disciplinary action to the appropriate college/university committee and may be reflected on the student's transcript.

\*\*\*CELL PHONES, TEXT MESSAGING, HEADPHONES, OR ANY OTHER TELECOMMUNICATION DEVICES OF THIS NATURE WILL NOT BE USED IN CLASS.

\*\*RECORDERS MUST BE PRESENTED TO THE PROFESSOR PRIOR TO USE.

**University's ADA Policy Statement:** If you have a documented disability and verification from the Center for Disability Access and Resources (CEDAR) and wish to discuss academic accommodations, please contact your instructor as soon as possible. It is the student's responsibility to provide documentation of disability to CEDAR and meet with a CEDAR counselor to request special accommodation before classes start. CEDAR is located at 667 Ardelia Court, Tallahassee, FL 32307 and can be contacted by phone at 850.599-3180

**University's Non-discrimination Policy Statement:** It is the policy of Florida A&M University that each member of the University community is permitted to work or attend class in an environment free from any form of discrimination including race, religion, color, age, disability, sex, sexual harassment, marital status, national origin, and veteran status as prohibited by State and Federal Statues. This commitment applies to all areas affecting students, employees, applicants for admission and applicants for employment. It is also relevant to the University's selection of contractors, suppliers of goods and services and any employment conditions and practices.

**Diversity Statement:** In order to learn, we must be open to the views of people different than ourselves. Each and every voice in the classroom is important and brings with it a wealth of experiences, values, and beliefs. In the time we share together over the semester, please honor the uniqueness of your fellow

classmates and others, and appreciate the opportunity we have to learn from each other. Please respect the opinions of others and refrain from personal attacks or demeaning comments of any kind. Finally, remember to keep confidential all issues of a personal or professional nature that are discussed in class.

### **House Bill 7 (HB7) Conformity:**

Fundamental to the institution's mission is support for an environment where divergent ideas, theories, and philosophies can be openly exchanged and critically evaluated. Consistent with these principles, this course may involve discussion of ideas that you find uncomfortable, disagreeable, or even offensive. These ideas are intended to be presented in an objective manner and not as an endorsement of what you should personally believe. Objective means that the idea presented can be tested by critical peer review and rigorous debate, and that the idea is supported by credible research. Not all ideas can be supported by objective methods or criteria. Regardless, you may decide that certain ideas are worthy of your personal belief. In this course, however, you may be asked to engage with complex ideas and to demonstrate an understanding of the ideas. Understanding an idea does not mean that you are required to believe it or agree with it. (Note: Adapted from suggested language from UCF.)

### **Mental Health Statement:**

Being successful in this course is dependent on many factors, including your personal well-being. As a student you may experience a range of stressors that can cause barriers to learning and impact your overall health. They may include anxiety, high levels of stress, depression, trauma, grief and strained relationships. You are a priority and there are a number of people at FAMU waiting to assist you in your academic journey. Please reach out to me if you are experiencing any type of difficulty that may impact your success in this course. In addition, the Office of Counseling Services (OCS) offers FREE, confidential virtual and in-person counseling for enrolled students. To learn more, visit the OCS' website or call (850) 599-3145.

### **Changes:**

This syllabus provides a general plan for the course. Deviations may be necessary.



FLORIDA A&M UNIVERSITY  
**DIVISION OF  
PHYSICAL THERAPY**

**Title and Number:** PHT 5166 Neuroscience

**Professional Year:** Spring 2024

**Time & Location:** M/W 1:00 pm- 2:15 pm Room 113 Lewis-Beck Building (SOAHS)

- Modality:**
- Face to Face
  - AD - All Distance (100% Online)
  - PD - Primarily Distance (80-99% Online)
  - HB - Hybrid (50-79% Online)

**Description:** Gross features and development of the brain and spinal cord. To include internal organization and structure, pathways, blood supply, and somatosensory systems. Will include neurophysiological concepts, clinical manifestations of the central nervous system, pain pathways, and clinical correlations.

**Credit Hours:** 3

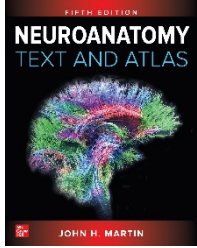
**Instructor:** Sherif Gendy, M.D., Ph.D., ACUE.

**Location:** Rm. 308 Lewis-Beck Allied Health Bldg

**Email:** [sherif.gendy@famu.edu](mailto:sherif.gendy@famu.edu) **Phone:** (850)412-5695

**Office hours:** M/W 02:30 pm – 3:30 pm

**Required Material:**

Author	Text Name/Edition	Publisher	Picture
Martin, JH	Neuroanatomy: Text and Atlas, 5th	McGraw-Hill	

\*\*Textbooks may be accessed digitally through <https://accessphysiotherapy.mhmedical.com>

**Expected Learning Outcomes and Objectives:** Upon successful completion of this course, the student will be able to examine and compare relationship to case study presentation:

### **1. Critical Thinking:**

DPT graduates will show their capacity to evaluate and utilize published literature critically to support critical thinking, problem-solving, and evidence-based practice, which play a significant role in physical therapy practice, Demonstrate the ability to apply anatomical concepts in systems review for clinical judgment and decision-making (cognitive domain).

### **2. Content Knowledge:**

DPT graduates will exhibit the capacity to examine people for physical therapy or references to other health experts; examine the patient/client to create a suitable diagnosis; design and handle a thorough physical therapy treatment plan; monitor and systemically assess care results (psychological domain)

### **3. Professional Behavior:**

The DPT graduates will demonstrate private behaviors that reflect their position and accountability as a professional physician who advocates for the promotion of health and illness prevention in underserved populations, recognizes the impact of social, economic, legislative and demographic variables on healthcare delivery, and demonstrates their respect for these variables, (affective domain).

### **4. Cognitive Objectives:** Upon completion of this course, students will be able to:

1. Describe the brain's gross anatomy, brainstem, and spinal cord and analyze the external and internal features of the central nervous system, including CNS, PNS, ANS, and classify neurons according to histological and functional criteria. [7A: *NERVOUS SYSTEM CAPTE standard*] *c, d, e, f, h, and i Midpoint (MP)*.
2. Explain the embryological development of the nervous system and how developmental alterations can impact neurological functioning. [7A: *NERVOUS SYSTEM CAPTE standard*] *g Midpoint (MP)*.
3. Classify neuronal synapses according to their function and examine the process of neural transmission from peripheral receptors to the CNS. [7A: *NERVOUS SYSTEM CAPTE standard*] *a Initial Assessment (AI)*.
4. Assign Brodmann's numbers and functions to the cerebral cortex, diencephalon, hypothalamus, cerebellum, and basal nuclei to correlate the signs and symptoms associated with their lesions. [7A: *NERVOUS SYSTEM CAPTE standard*] *e Midpoint (MP)*.
5. Explain the function of the meningeal layers, ventricular system, and cerebral circulation and describe hydrocephalus types and their potential cause.
6. Diagram, the anatomical organization of the sensory and motor systems and the interactions of their multiple components associated with the different types of receptors and define the locations of major ascending and descending spinal cord tracts and correlate the neuroanatomy of major ascending and descending tracts to pathologic clinical signs and symptoms. [7A: *NERVOUS SYSTEM CAPTE standard*] *i Midpoint (MP)*, [7A: *PATHOLOGY CAPTE standard*] *c, d, and e Initial Assessment (AI)*.
7. Describe the auditory, vestibular, and visual systems' anatomy and physiology and their central pathways and lesions. [7A: *NERVOUS SYSTEM CAPTE standard*] *j Midpoint (MP)*.
8. Evaluate Nervous System dysfunction as a consequence of (stroke) disruptions in blood supply and compare the theories of neural plasticity and their impact on development, recovery of function and

learning and describe neural plasticity and neurogenesis and factors that influence, including age, socioeconomic status, culture, nutrition, motivation, and co-morbidities. [7A: *NERVOUS SYSTEM CAPTE standard*] k Midpoint (MP).

### Grades:

The following activities will determine your overall grade. There are no make-up exams in this course without an excused absence signed by the Dean. You should speak with your instructor before the test or the week of the test if you need to miss or have missed a scheduled test. There are no make-up quizzes at all, regardless of the excuse.

Graded Items	% of Final Grade	Points
Class Participation	2%	10
Case Study Discussion	8%	(4 @ 10 points) 40
Quizzes	10%	(5 @ 10 points) 50
Lecture Examinations	80%	(4 @100 points) 400
	<b>100%</b>	<b>Total Points: 500</b>

### Grade Scale:

Total Number of Points Earned	Performance Achievement of Objectives	GPA(Grade)
450 - 500	90% to 100%	4.0 (A)
400 - 444	80% to 89%	3.0 (B)
350 - 394	70% to 79%	2.0 (C)
300 - 344	60% to 69%	1.0 (D)

Less than 300	0% to 59%	0.0 (F)
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\* All exams, assignments, and quizzes are required to be taken. Class quizzes will be made up of in-class, attendance, and blackboard quizzes.

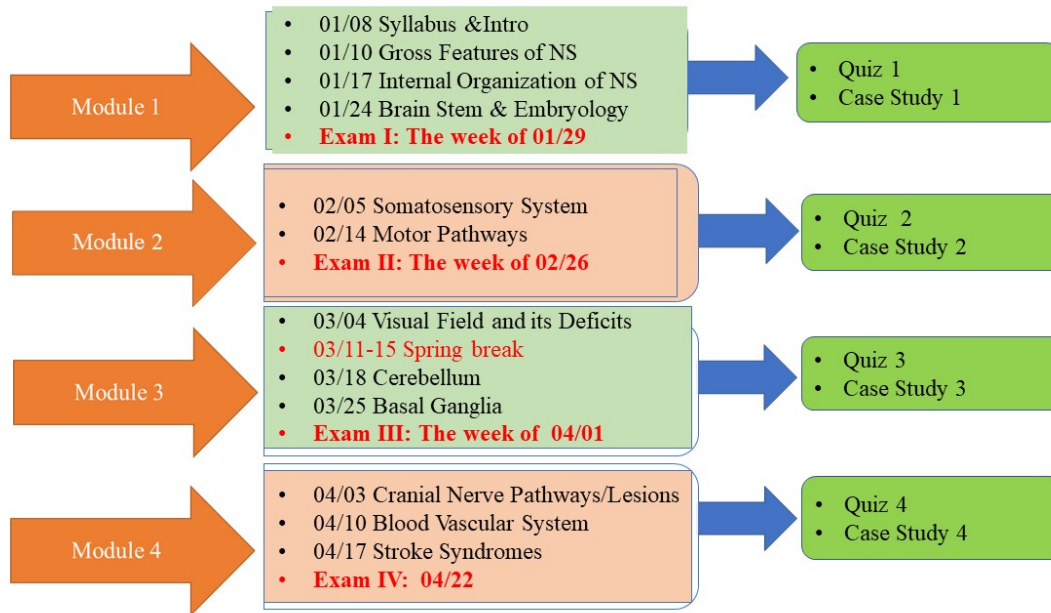
### Required Technology

- Internet connection (DSL, LAN, or cable connection desirable)
- Access to Canvas.
- Zoom etc
- Web Camera
- Headset with microphone

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- FAMU Canvas Access to access this course on FAMU Canvas, you will need access to the Internet and a supported Web browser (Firefox, Safari, and Google Chrome).

### Course Schedule:



\*Course schedule are subjective to change according to circumstances.

### Technical Assistance:

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It is recommended that you access this course a minimum of four times a week.



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**Disruptive Behavior:** Disruption of a class, curricular, or University activity; obstruction of the free flow of pedestrian or vehicular traffic on University premises; interference with the rights of others to carry out their activities or duties at, or on behalf of the University; interference with the freedom of movement of any member or guest of the University; interference with the academic freedom and freedom of speech of any member or guest of the University; or any other act that impairs, interferes with or obstructs the mission, purposes, academic atmosphere, operations, processes, orderly conduct and/or functions of the University or the rights of other members of the University community.

**Harassment:** Verbal or written abuse (including electronic communications or internet activity), threats, intimidation, coercion, and/or other conduct that endangers the health, safety, or welfare of others, or places another individual in reasonable fear of physical harm or creates a hostile environment in which others are unable to conduct or participate in work reasonably, education, research, living or other activities. Harassment also includes actions defined in University Regulation 10.103.

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**\*\*RECORDERS MUST BE PRESENTED TO THE PROFESSOR before USE.**

**University's ADA Policy Statement:** If you have a documented disability and verification from the Center for Disability Access and Resources (CEDAR) and wish to discuss academic accommodations, please contact your instructor as soon as possible. It is the student's responsibility to provide documentation of disability to CEDAR and meet with a CEDAR counselor to request special accommodation before classes start. CEDAR is located at 667 Ardelia Court, Tallahassee, FL 32307 and can be contacted by phone at 850.599-3180

**University's Non-discrimination Policy Statement:** It is the policy of Florida A&M University that each member of the University community is permitted to work or attend class in an environment free from any form of discrimination, including race, religion, color, age, disability, sex, sexual harassment, marital status, national origin, and veteran status as prohibited by State and Federal Statues. This commitment applies to all areas affecting students, employees, applicants for admission, and applicants for employment. It is also relevant to the University's selection of contractors, suppliers of goods and services, and employment conditions and practices.

**Diversity Statement:** To learn, we must be open to the views of people different from ourselves. Each and every classroom voice is important and brings a wealth of experiences, values, and beliefs. In the time we share over the semester, please honor your classmates and others' uniqueness and appreciate the opportunity to learn from each other. Please respect the opinions of others and refrain from personal

attacks or demeaning comments of any kind. Finally, remember to keep confidential all issues of a personal or professional nature discussed in class.

**House Bill 7 (HB7) Conformity:**

Fundamental to the institution's mission is support for an environment where divergent ideas, theories, and philosophies can be openly exchanged and critically evaluated. Consistent with these principles, this course may involve discussion of ideas that you find uncomfortable, disagreeable, or even offensive. These ideas are intended to be presented in an objective manner and not as an endorsement of what you should personally believe. Objective means that the idea presented can be tested by critical peer review and rigorous debate, and that the idea is supported by credible research. Not all ideas can be supported by objective methods or criteria. Regardless, you may decide that certain ideas are worthy of your personal belief. In this course, however, you may be asked to engage with complex ideas and to demonstrate an understanding of the ideas. Understanding an idea does not mean that you are required to believe it or agree with it. (Note: Adapted from suggested language from UCF.)

**Mental Health Statement:**

Being successful in this course is dependent on many factors, including your personal well-being. As a student you may experience a range of stressors that can cause barriers to learning and impact your overall health. They may include anxiety, high levels of stress, depression, trauma, grief and strained relationships. You are a priority and there are a number of people at FAMU waiting to assist you in your academic journey. Please reach out to me if you are experiencing any type of difficulty that may impact your success in this course. In addition, the Office of Counseling Services (OCS) offers FREE, confidential virtual and in-person counseling for enrolled students. To learn more, visit the OCS' website or call (850) 599-3145.

## **Section II: Gross Anatomy Teaching Laboratory Policies and Procedures**

## **1. Cadavers**

**Preface:** The core premise behind the courses administered in association with human specimens is to have a full understanding of the working of the human body. Hence it is necessary that students going into a professional career, especially in the field of health care, have the opportunity to be exposed the intricate dynamics of the human anatomy as best as possible. This currently can only be achieved by the use of human specimen. Thus SOAHS is ensuring the best and most competitively qualified students in their fields by providing a location where students can learn with human specimens. These specimens are provided to SOAHS with the sole understanding that they are to be used for anatomy education.

### **1.1. Information of Facilities Providing Body Donors**

#### **1.1.a. Board Specimens**

- Human anatomical specimens requested for use by teaching and/or research programs on FAMU campus, which have been inspected and approved pursuant to Chapter 406.59, Florida Statutes, will receive bodies from the Anatomical Board. These specimens shall meet the strict stands and guidelines necessary to protect the health and safety of all individuals involved in the handling of said specimen(s). Human specimens will be assigned an identifying number provided by the Anatomical Board which will remain with the human anatomical specimen from the time it is delivered to the time it is returned back to the Anatomical Board for the specimen to be cremated.
- Human anatomical specimens when delivered are kept in body storage bags (zippered disaster pouches) where the bodies will be kept for the duration of their use and returned in the bag upon retrieval by the Anatomical Board technician. The body and any tissues of sufficient mass will be identified as separate specimens removed as part of the study shall be returned in the bag

at the end of the use of the specimen(s). Furthermore, the metal tag with the identifying number must remain on the body at all times.

**1.1.b. Donated bodies from other sources:**

Human Specimens that are to be donated to the depository at FAMU must meet the requirements that are set by the Anatomical Board. For this purpose all human specimens to be stored at the FAMU depository must first be submitted to the Anatomical Board and must follow the strict procedures there in. Any funeral home interested and willing to submit bodies to FAMU must complete information and forms which are to be completed by the funeral home prior to the delivery of a human body to the Anatomical Board. The Funeral Home Information Packets will contain:

- Instructions for Anatomical Donations
- Forms Required for Anatomical Donations
- Vital Statistics Form
- Declaration of Consent Form for Surviving Relatives
- Declaration of Consent Form for Surviving Non-Relatives (i.e., Healthcare Surrogate, Guardian, Court-Appointed Representative Ad Litem, or Personal Friend). The Anatomical Board will not accept the deceased if the surviving relative or legally authorized non-relative objects to the use of the remains for education or research.
- Ashes Requested Form
- Permission to Dispose of Ashes Form

The above forms and information is available on the following websites:

• ***University of Florida:***

<http://anatbd.acb.med.ufl.edu/funeralhome/>

• ***University of Miami:***

<http://sofab.med.miami.edu/printable-forms>

• ***University of Central Florida:***

<https://med.ucf.edu/media/2016/08/funeral-packet-UCFCOM-new-2017-filable.pdf>

### **1.1.c. Letter of Authorization**

If the program and facilities are approved for the receipt of human anatomical specimens, the Anatomical Board will send a letter of authorization and will provide an authorization to transport specimens to approved facilities at time the specimens are received.

## **1.2. Obtaining and Transport of Registered Human Cadavers**

**1.2.a.** Bodies obtained from the Anatomical Board are transported to and from the FAMU depository by a sanctioned and approved transportation provider.

**1.2.b.** Bodies that are donated from a funeral must first be transported to the appropriate facilities for secondary embalming at an approved Anatomical Board site. Delivery of a human body to the Anatomical Board requires the forms discussed in section II part 1.1.b. as well as a photocopy of the death certificate and a burial transit permit with cremation authorization from the medical examiner. Furthermore, the payment of costs incurred in performing the preliminary embalming and in transporting the human body to the Anatomical Board shall be the responsibility of the family of the deceased or the funeral home willing to donate the body. Once delivered to the Board transport of the bodies will be conducted by the above mentioned board approved transportation provider.

## **1.3. Receiving and Storage of Human Anatomical Specimens Prior to Dissection**

**1.3.a.** Approved Faculty associated with the FAMU depository will meet with the technicians of the Anatomical Board delivering the donated human remains to the designated loading dock area.

**1.3.b.** The Anatomical Board technician will place the human body onto dissecting tables which will then be placed into the refrigeration unit of the SOAHS FAMU Human Specimen Depository. Associated paperwork pertaining to the delivery of the specimen(s) will be signed and filed with SOAHS as needed.

**1.3.c.** The Anatomical Board assigns a number to the donated human body and thus the receiving party must ensure that each cadaver has an assigned number attached. This number will be used to identify the donated body throughout the time that the donated body is in the possession of SOAHS and upon return of said specimen(s) back to the Anatomical Board. The number will be engraved on a metal tag with a notation that the human anatomical specimen belongs to the Anatomical Board of the State of Florida and that the tag is not to be removed from the body.

**1.3.d.** The faculty assigned with the responsibility of the bodies while in the possession by SOAHS will ensure that the cold room is secure and only accessible by approved faculty, staff, students, and visitors. The cold room/refrigeration unit will be unlocked while human specimens need to be accessed but doors connecting to the lab will remain locked and only opened by approved authorized individuals.

**1.3.e.** SOAHS will ensure that donated bodies, or any parts from said bodies are not used for any other purpose outside of learning or training and will not be used for “Body Farms” or similar entities that use cadavers for forensic purposes, or allow bodies, or any parts to be displayed by the general public for educational, entertainment, or artistic purposes.

#### **1.4. Handling of Human Remains after the Completion of Use**

**1.4.a.** As per required by the Anatomical Board, the faculty are responsible for the return of the specimens after use in a timely fashion. If the specimens are required



beyond the time request then a written extension should be submitted and filed with the Anatomical Board. Material that may be retained for other teaching or training purposes, such as brains used in Neuroscience, will be turned over to the department requesting the material or if done with said material it can be sent to the Health Science Center Teaching Laboratories. The department receiving the material is then held responsible for the security, storage, and timely return of the material.

**1.4.b.** All material extracted from the human anatomical specimen that will not be kept for teaching purposes must be returned with the appropriate matching specimen. Tissue must be included in the cadaver bag and specimen must have ID tag attached.

**1.4.c.** Upon completion of the use of the human anatomical specimen(s), the cadavers will be returned to the Anatomical Board for cremation. To ensure the appropriate returned body specimen correlates with the specimen that was originally dropped off, the technicians will log into his/her logbook the return date and the specimen number and the submit that information back to the office of the Anatomical Board. Once the specimen(s) is/are removed from the depository and in the custody of the Anatomical Board technician it is no longer the responsibility of the SOAHS.

## **2. Student Responsibility**

### **2.1. Student Access to Human Cadavers**

Students cannot have access to human cadavers until the student signs either the Anatomical Board “Pledge of respect form” or the SOAHS modified “Pledge of respect which includes the standard expectations and SOP that the SOAHS has for each student. SOAHS “Pledge of respect” can be found in the SOP below. In addition, students must also complete the training on the FAMU blackboard system. Students must meet during appropriate class times and be responsible for preparatory and clean up procedures before and after each Laboratory Session.

### 2.1.a. SOAHS required “Pledge of Respect”

## GROSS ANATOMY LABORATORY PLEDGE OF RESPECT

The bodies available for dissection were donated by individuals who wanted their remains to be used for education and research. As a health care practitioner, you are *privileged* to have the opportunity to use this anatomical donation. The rules of the anatomy laboratory are based upon PATIENT PRIVACY, RESPECT, SECURITY, SAFETY, and MAINTENANCE. These rules will be observed in the laboratory **AT ALL TIMES:**

### Respect

1. **The anatomical donors are to be treated with the utmost respect at all times.** Inappropriate or improper behavior and/or comments within and outside the laboratory is/are unacceptable.
2. The articulated skeletons, skulls and isolated bones are to be afforded the same respect as the cadavers.
3. **Do not remove the numbered tag from your cadaver.**
4. The cadavers are to be properly maintained. Any suspicion of mold or rot should be reported to the facility director immediately, since it can rapidly spread throughout the body and to other donors in the room. The plastic body bag should be closed after each dissection. **Take good care of your cadaver – it is the best teacher you have in this course.**
5. All cadaver waste tissues are to be properly disposed of. No other waste is to be disposed of in the cadaver waste bins (see below for the disposal of other waste).
6. Dissection tables should be kept clean and free of excessive tissue.
7. **The right of privacy and confidentiality due to all medical patients is extended to our anatomical donors at all times.**
8. Cadavers will be appropriately draped at all times. All regions not being studied should be draped. Entirely cover the cadaver when leaving it for any period of time.
9. Use of cameras, cell phones or other photographic or video equipment is not permitted in the laboratory at any time unless specifically authorized by the course administration.
10. Only students, faculty and other authorized personnel are allowed in the gross anatomy lab. Under no circumstances may a student bring an unauthorized visitor into the lab. Permission to bring a visitor into the lab can be granted but is restricted to healthcare professionals or individuals with an approved academic purpose.
11. **NOTHING leaves the lab without the permission of the facility administrator or the course director.**
12. Food and/or drinks are not allowed in the laboratory.

### Security

1. Keep the doors of the laboratory closed **AT ALL TIMES**.
2. Do not share your bone box with anyone except your partners to prevent loss of bones.

### **Safety**

The following safety procedures are in place to prevent injuries and limit exposure to chemicals:

1. Students must wear long pants and closed shoes whenever they are in the laboratory. Open-toed or perforated shoes (e.g., sandals), shorts and skirts are not to be worn in the anatomy lab. You will be asked to leave the laboratory if you are in violation of this dress code.
2. Students must wear a lab coat when in the lab. It is your responsibility to maintain your lab coat in a reasonably clean condition. The faculty will insist you wear your lab coat regardless of how dirty it is.
3. Gloves must be worn throughout the dissection period.
4. Eye protection must be worn whenever you are within five (5) feet of an open cadaver. Regular eyeglasses are sufficient eye protection. Students must wear safety goggles when using hammers, chisels, bone pliers and Stryker saws.
5. All used scalpel blades must be disposed of in the provided “sharps” containers. Never dispose of “sharps” in wastebaskets or garbage cans (see below for the disposal of other waste).
6. All injuries incurred in the gross anatomy laboratory, no matter how insignificant they may appear, must be reported immediately to an instructor. The instructor will administer first aid and determine whether the student should be directed to a facility for further treatment.
7. In case of an EMERGENCY, use the lab phone to call the police (9-911).
8. Students who are pregnant, or believe they may be pregnant, are responsible for discussing attendance in the gross anatomy lab with their physician.

### **Maintenance**

1. The laboratory must be kept neat at all times and you are expected to clean your area after each day’s dissection. This includes emptying the specimen tissue bucket at the end of your table and wiping up any large spills from the floor as needed. You are provided space for storing your atlases and dissection tools – please use it! Atlases and tools that are left on the counters will be placed in the lost and found box.

Note that proper trash disposal is as follows:

- cadaver (tissue) waste – cadaver waste container
- gloves and cadaver-soaked paper towels, paper towels, paper, etc. – regular gray containers
- blades – red sharps disposal boxes located on counter tops

Anatomy Laboratory Policy

-----  
I have read the rules and regulations of the gross anatomy laboratory and understand that any violation thereof is a breach of professional conduct.

Printed Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

### **2.1.b. Scheduled Class Days and times:**

**Preface:** Student and faculty exposure to hazardous chemicals will be limited to the times that the students or the faculty come into the lab and the duration in which they stay. This can indirectly be determined by their scheduled class days and times.

- ***Gross Anatomy Lab (PHT 5115 L)*** is scheduled for 3 hours a day for three days a week, (Tuesday and Thursday) every week within the fall schedule of 4 months not including holidays and breaks.

- ***Gross Anatomy Lab (OTH 5241 L)*** is scheduled for 3 hours a day for three days a week, (Monday, Wednesday, and Sunday) every week within the fall schedule of 4 months not including holidays and breaks.

- ***Neuroanatomy (PHT 5166)*** has a lab activity that will occur for one day per month for no more than 1 hour per class session during the spring semester.

- ***Neuroanatomy (OTH 5245)*** has a lab activity that will occur for one day for no more than 1 hour during the spring semester.

## **2.2. Student Responsibility before and after each Laboratory Session**

### **2.2.a. Student Responsibility before each laboratory Session**

- Students shall ensure that no food and open drink containers enter the lab or locker room

- First person in must make sure that all lights are turned on in the refrigeration unit, the teaching lab, the locker room, and the bathroom.

- Before entering the teaching lab, students shall ensure that they are appropriately dressed for the lab. This includes scrubs or a lab coat covering the clothing of the student prior to entering the teaching lab space.

- Student shall place all non-essential materials in the lockers prior to entering the teaching lab. This is to ensure that preservatives do not contaminate materials that may leave the class.

- During days of dissection students shall put on gloves immediately prior to removal of human specimens from the refrigeration unit. Additionally, students shall have their dissection kits and appropriate dissection tools prepared prior to the removal of the cadavers.
- Cadaver tables will be carefully removed and positioned into the teaching lab with an appropriate amount of space between cadaver tables so as to ensure no accidents or crowding occurs during the dissection. Furthermore, the tissue reservoir (specimen bucket) for the cadaver shall also be removed from the refrigeration unit and placed near the cadaver table.

### **2.2.b. Student Responsibility after each Laboratory Session**

- Reposition cadaver onto dissection table so that the body and limbs can fit inside cadaver bag. Ensure that the body its associated parts are put back in a correct anatomical position. Clean dissection table and place any tissue removed from the cadaver in the appropriate receptacle (specimen tissue bucket). If skin has been removed from cadaver then spray the cadaver with Carosafe fluid to preserve specimen. Cover specimen with cadaver sheet and close the cadaver bag. Return cadaver table back into the refrigeration unit.
- Remove any dull blades from the scalpels used and clean all instruments that were used on the cadaver. Place any classroom tools back to their appropriate location.
- Clean the area where the dissection table was located, especially the counters and floor area to prevent accidents or accidental exposure to preservatives.
- Remove soiled gloves and dispose of them in the appropriate containers. Wash hands after removing gloves and before exiting the laboratory.
- Last person to leave laboratory shall ensure all doors are secured, the lights are turned off in the refrigeration unit, teaching lab, locker room, and the bathroom.

### **2.3. Cadaver Dissection Instructions**

**2.3.a.** A high degree of precaution shall always be taken with any contaminated sharp items, including needles and scalpels.

**2.3.b.** Do not wave or point with scalpels or other sharp objects. Always keep scalpels in plain view.

**2.3.c.** If a blade becomes detached from the scalpel handle during a dissection, notify all members of dissection team immediately, stop and attempt to retrieve the blade using forceps. If this is unsuccessful, close the body bag / dissection table, alert faculty and place a warning notice on the specimen.

**2.3.d.** Never remove body tissues from the laboratory.

**2.3.e.** Never remove the State of Florida Anatomical Board ID tags from the specimen.

**2.3.f.** Place disposable materials in the appropriate containers.

**2.3.g.** All dissection procedures are to be performed carefully to minimize the creation of splashes or aerosols.

**2.3.h.** Broken glassware shall not be handled directly by hand, but shall be removed by mechanical means such as a brush and dustpan, tongs or forceps. Place in sharps waste containers for disposal.

**2.3.i.** Spills and accidents that result in overt exposures to infectious materials (body fluids) are to be reported immediately to the laboratory director.

**2.3.j.** All wastes are to be placed in the appropriate containers for proper disposal.

**2.3.k.** If mold is detected on the specimen, notify faculty, disinfect instruments and post a **DO NOT USE** sign on the closed body container until lab personnel can address the issue.

#### **2.4. Other Uses for the Anatomical Labs**

The Anatomical Board allows approved facilities the use of non-living animal material in the anatomical labs. However, living animals or materials that are from living organisms are not

approved to be stored or maintained in the depository. Furthermore, any samples stored in the FAMU depository are the responsibility of the Department or College requesting storage. Thus maintenance or upkeep of these material are not the responsibility of SOAHS.

### **3. Safety Precautions and Environment Protection Procedures.**

**Preface:** Faculty, staff, students, and visitors upon entering the lab run the risk of injury or exposure to hazardous materials. To ensure that health and safety of any and all participants SOAHS, in following the Anatomical Board guidance on safety precautions and environmental protection, has assimilated a series of precautions that will assist in reducing risks as well as procedures that can be undertaken in case injury or accidental exposure to hazardous chemicals does occur. These procedures and precautions have been incorporated in the SOP and are shown below.

#### **3.1. Universal Precautions**

**3.1.a. Attire:** At a minimum, the following attire must be worn at all times while work is going on in the laboratory.

- Lab coats (three-quarter length) with long pants or Scrubs
- Disposable gloves
- Closed toed shoes (no sandals or open-toed shoes)
- Additional attire that may be used but not required includes barrier equipment such as safety glasses, masks, or face shields. These items can be worn by those who feel it necessary or when appropriate for use against anticipated splashes or splatters to the face.

**3.1.b. Dealing with attire after lab use:** Attire can be exposed to human specimen and preservative chemicals that may be biohazardous and should be dealt with appropriately.



- **Soiled lab coats:** These garments are not to be worn outside the laboratory area. Furthermore, all disposable protective clothing is disposed of within the laboratory; it shall never be taken home.

- **Used Gloves:** Disposable gloves shall be worn when handling potentially infectious materials, contaminated surfaces or equipment. Gloves shall be disposed of when overtly contaminated, when work with cadaveric materials is completed, or when the integrity of the glove is compromised. Disposable gloves are not to be washed, reused, or used for touching "clean" surfaces, and should not be worn outside the lab. Hands will be washed thoroughly with soap and water following removal of gloves.

**3.1.c. Activities not permitted in the laboratory:** eating, drinking, applying cosmetics including lip balm, handling contact lenses, gum chewing or smoking.

- Food or drink shall not be stored within the Teaching lab but can be housed in the locker room. Eating, drinking, or chewing gum is not allowed in any space including the locker room or bathroom.

- Students, faculty, and staff shall not wear contact lenses in the laboratory due to the potential hazards that can become entrapped under the contact or interact with the contact and affect the vision of the individual. These precautions shall be made clear prior to entrance to the lab.

- Cosmetics have been shown to adhere to preservatives used in the lab and thus students, faculty, and staff are encouraged not wear it while participating in dissection within the lab.

- Smoking is prohibited.

### **3.2. Injuries in the Laboratory:**

**3.2.a.** If serious illness or injury occurs call 911. Give building and location where aid is needed, specific location within the building, type of problem, individual's condition, sequence of events, and medical history if known. Have somebody stay with the patient until

help arrives. Do not move the patient; keep the patient still and comfortable. Once help arrives, stay out of the way unless assistance is requested.

**3.2.b.** All injuries in the laboratory shall be reported immediately to the faculty, staff or lab directors. In all cases, a written report, documenting the injury shall be made to the University Environmental Health and Safety Department.

**3.2.c.** Laboratory protocol in the event of injuries is displayed in clear view on the east wall of the teaching lab near the emergency eye wash station.

**3.3. Facility Emergency Exit Locations, Safety Signage positions, and Location of safety equipment:** All signage in the laboratories, location of emergency equipment and procedures for fire or other emergency are listed below:

- **First aid kit** – Located in upper far right cabinet on the north wall nearest the emergency exit in the teaching lab.
- **Eye wash and emergency shower** – Located on the east wall closest to the sink in the south-east corner of the teaching lab.
- **Emergency Exit** – Located on the north-east corner and south-west corner of the teaching lab.
- **Fire Extinguisher** – Located on the east wall closest phone on the east wall and the emergency exit on the north-east corner of the teaching lab.
- **Telephone** – Located on the east wall on the bookcase between the emergency exit at the north-east corner and the fire-extinguisher on the east wall.
- **Fire instructions and Laboratory protocol in the event of injuries** - Posted on the east wall near the emergency eye wash and shower in the teaching lab.

#### **3.4. Safety Data Sheet (SDS)**

**Preface:** Faculty, staff, students, and visitors can be exposed to various levels of chemicals used within the lab. To ensure the health and safety associated with said chemicals an SDS for each potential hazardous chemical will be provided and kept to make everyone aware hazards and PPE Required. SDS sheets are incorporated in the SOP and shown below.



Department of Environmental Health and Safety

### **Working with Formaldehyde**

Formaldehyde is well known as a preservative in research laboratories, as an embalming fluid, and as a sterilizer. Urea-formaldehyde (UF) and phenol formaldehyde (PF) resins are also used in foam insulations, as adhesives in the production of particle board and plywood, and in the treating of textiles.

Although the term formaldehyde describes various mixtures of formaldehyde, water, and alcohol, the term "formalin" is used to describe a saturated solution of formaldehyde dissolved in water with another agent, most commonly methanol which is added to stabilize the solution. Formalin is typically 37% formaldehyde by weight (40% by volume) and 6-13% methanol by volume in water. A typical laboratory formulation is called 10% buffered formalin solution. It contains about 3.7% formaldehyde, 1.5% methanol, 2 % buffers, and about 93% water. The formaldehyde component provides the disinfectant and preservative effects of formalin.

The *National Toxicological Program's (NTP) 12th Report on Carcinogens* classifies formaldehyde as "known to be a human carcinogen". It has been reported to cause nasal tumors. Formaldehyde is a sensitizing agent that can cause an immune system response upon initial exposure. Acute exposure is highly irritating to the eyes, nose, and throat and can make anyone exposed cough and wheeze. Subsequent exposure may cause severe allergic reactions of the skin, eyes and respiratory tract and can lead to olfactory fatigue, defined as the inability to discern the odor of formaldehyde. Ingestion of formaldehyde can be fatal, and long-term exposure to low levels in the air or on the skin can cause asthma-like respiratory problems and skin irritation such as dermatitis and itching. The National Institute for Occupational Safety and Health (NIOSH) considers 20 ppm of formaldehyde to be immediately dangerous to life and health (IDLH). When present in the air at a concentration above 0.1 part per million, formaldehyde can cause watery eyes, nausea, coughing, chest tightness, wheezing, skin rashes, allergic reactions, and burning sensations in the eyes, nose, and throat. Exposure to airborne concentrations of formaldehyde must be limited to an average of 0.75 ppm over an 8-hour workday.

### **Safe Handling Procedures:**

- All laboratories that work with formaldehyde must have a written Standard Operating Procedure (SOP).
- All work with formaldehyde should be conducted in a well ventilate space such as a fume hood or under a properly designed and installed exhaust system to prevent exposure by inhalation
- Splash goggles and impermeable gloves (nitrile, PVC, butyl rubber, Viton) should be worn to prevent eye and skin contact.
- Formaldehyde should be used only in areas free of ignition sources. Store formaldehyde in labeled, chemically compatible containers, away from heat and flame. Always place large-volume containers on a low, protected shelf or in another location where they will not be accidentally spilled or knocked over. Containers larger than 4L (1 gallon) should be stored inside a deep pan or other secondary containment. Do not store formaldehyde bottles in any area where a leak would flow to a drain.
- Containers of formaldehyde should be stored in secondary containers in areas separate from oxidizers and bases.
- An eyewash and safety shower shall be available if splashing of formaldehyde is likely.
- Be sure that formaldehyde solutions are clearly labeled with the chemical's name and hazards. As with any laboratory chemical, do not mouth pipette formaldehyde solutions. Do not eat, drink, or smoke where formaldehyde is handled, processed, or stored, since the chemical can be swallowed. Always wash hands thoroughly after using formaldehyde, even if gloves are worn.
- All procedures using formaldehyde are to be performed in designated areas. There is a space on the laboratory hazard communication door sign to designate the formaldehyde. All designated areas should be posted with a sign that contains the following information:

**WARNING**  
**DESIGNATED AREA FOR HANDLING THE FOLLOWING**  
**SUBSTANCES WITH HIGH ACUTE OR CHRONIC TOXICITY:**  
**Formaldehyde – Carcinogen**  
**AUTHORIZED PERSONNEL ONLY**

### **Emergency Procedures:**

#### **Formaldehyde Spills**

If formaldehyde is spilled outside a chemical fume hood, evacuate the area, close the laboratory doors, and post the area to prevent others from entering. If the incident occurs during regular work hours (Monday to Friday, 8 a.m. to 5 p.m.), call EH&S (599-3442 or 3443) for assistance in cleaning up the spill. After hours, call FAMUPD (599-3256); they will contact EH&S responders. Provide information or other assistance to emergency responders as requested.

#### **Inhalation of Formaldehyde Vapor**

If someone inhales a high concentration of formaldehyde vapor, immediately move the person to fresh air and call Student Health Services (599-3777). When Student Health Services is closed, go to emergency room

at Tallahassee Memorial or Capital Regional Medical Center. If the person is having trouble breathing, call 911 for immediate medical attention.

### **Splash of Formaldehyde to Eyes or Skin**

For eye or skin exposure, immediately flush with plenty of water for at least 15 minutes. Remove contaminated clothing and contact Student Health Services. In case of ingestion, call 911 for immediate medical attention. As with all accidents, report any exposure as soon as possible to your supervisor.

### **Exposure Limits**

The Permissible Exposure Limit (PEL) for formaldehyde in the workplace is 0.75 parts per million (PPM) of air measured as an 8-hour time-weighted average (TWA). The standard includes a second PEL in the form of a short-term exposure limit (STEL) of 2 ppm which is the maximum exposure allowed during a 15-minute period.

### **3.4.a. Formaldehyde**

## SAFETY DATA SHEET

Creation Date 08-Feb-2010

Revision Date 17-Jan-2018

Revision Number 4

### 1. Identification

**Product Name** Formaldehyde solution 37%

**Cat No. :** F75F-1GAL; F75P-1GAL; F75P-4; F75P-20

**Synonyms** Formalin; Methanal; Methylene oxide; Oxymethane; Formic aldehyde; Methyl aldehyde

**Recommended Use** Laboratory chemicals.

**Uses advised against** Not for food, drug, pesticide or biocidal product use

#### Details of the supplier of the safety data sheet

##### Company

Fisher Scientific  
One Reagent Lane  
Fair Lawn, NJ 07410  
Tel: (201) 796-7100

##### **Emergency Telephone Number**

CHEMTREC®, Inside the USA: 800-424-9300  
CHEMTREC®, Outside the USA: 001-703-527-3887

### 2. Hazard(s) identification

#### Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids	Category 3
Acute oral toxicity	Category 3
Acute dermal toxicity	Category 3
Acute Inhalation Toxicity - Vapors	Category 3
Skin Corrosion/Irritation	Category 1 B
Serious Eye Damage/Eye Irritation	Category 1
Skin Sensitization	Category 1
Germ Cell Mutagenicity	Category 2
Carcinogenicity	Category 1A
Specific target organ toxicity (single exposure)	Category 1
Target Organs - Respiratory system, Central nervous system (CNS), Optic nerve.	
Specific target organ toxicity - (repeated exposure)	Category 1
Target Organs - Kidney, Liver, Heart, spleen, Blood.	

#### Label Elements

##### **Signal Word**

Danger

##### **Hazard Statements**

Flammable liquid and vapor  
Toxic if swallowed  
Toxic in contact with skin





Causes severe skin burns and eye damage  
May cause an allergic skin reaction  
Toxic if inhaled  
May cause respiratory irritation  
May cause drowsiness or dizziness  
Suspected of causing genetic defects  
May cause cancer  
Causes damage to organs  
Causes damage to organs through prolonged or repeated exposure



### Precautionary Statements

#### Prevention

Obtain special instructions before use  
Do not handle until all safety precautions have been read and understood  
Use personal protective equipment as required  
Wash face, hands and any exposed skin thoroughly after handling  
Do not eat, drink or smoke when using this product  
Use only outdoors or in a well-ventilated area  
Do not breathe dust/fume/gas/mist/vapors/spray  
Contaminated work clothing should not be allowed out of the workplace  
Wear protective gloves  
Keep away from heat/sparks/open flames/hot surfaces. - No smoking  
Keep container tightly closed  
Ground/bond container and receiving equipment  
Use explosion-proof electrical/ventilating/lighting/equipment  
Use only non-sparking tools  
Take precautionary measures against static discharge  
Keep cool

#### Response

Immediately call a POISON CENTER or doctor/physician

#### Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

#### Skin

Wash contaminated clothing before reuse  
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower  
If skin irritation or rash occurs: Get medical advice/attention

#### Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

#### Ingestion

Rinse mouth  
Do NOT induce vomiting

#### Fire

In case of fire: Use CO<sub>2</sub>, dry chemical, or foam for extinction

#### Storage

Store locked up  
Store in a well-ventilated place. Keep container tightly closed

#### Disposal

Dispose of contents/container to an approved waste disposal plant

#### Hazards not otherwise classified (HNOC)

None identified

#### Other hazards

Poison, may be fatal or cause blindness if swallowed. Vapor harmful. Cannot be made non-poisonous.

**WARNING.** Reproductive Harm - <https://www.p65warnings.ca.gov/>.

### 3. Composition/Information on Ingredients

Component	CAS-No	Weight %
Water	7732-18-5	45 - 48
Formaldehyde	50-00-0	37 - 40
Methyl alcohol	67-56-1	15

### 4. First-aid measures

<b>General Advice</b>	Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.
<b>Eye Contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
<b>Skin Contact</b>	Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.
<b>Inhalation</b>	If breathing is difficult, give oxygen. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Move to fresh air. Immediate medical attention is required.
<b>Ingestion</b>	Do not induce vomiting. Call a physician or Poison Control Center immediately.
<b>Most important symptoms and effects</b>	Breathing difficulties. Causes burns by all exposure routes. May cause allergic skin reaction. . Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting: Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation: Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing
<b>Notes to Physician</b>	Treat symptomatically

### 5. Fire-fighting measures

<b>Suitable Extinguishing Media</b>	Cool closed containers exposed to fire with water spray.
<b>Unsuitable Extinguishing Media</b>	No information available
<b>Flash Point</b>	50 °C / 122 °F
<b>Method -</b>	No information available
<b>Autoignition Temperature</b>	No information available
<b>Explosion Limits</b>	
<b>Upper</b>	No data available
<b>Lower</b>	No data available
<b>Sensitivity to Mechanical Impact</b>	No information available
<b>Sensitivity to Static Discharge</b>	No information available

#### Specific Hazards Arising from the Chemical

Flammable. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to

release of irritating gases and vapors.

**Hazardous Combustion Products**

Hydrogen Formaldehyde

**Protective Equipment and Precautions for Firefighters**

Thermal decomposition can lead to release of irritating gases and vapors. As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**NFPA**

<b>Health</b> 3	<b>Flammability</b> 2	<b>Instability</b> 0	<b>Physical hazards</b> N/A
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**6. Accidental release measures**

<b>Personal Precautions</b>	Use personal protective equipment. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges.
<b>Environmental Precautions</b>	Should not be released into the environment. Do not flush into surface water or sanitary sewer system. See Section 12 for additional ecological information.
<b>Methods for Containment and Clean Up</b>	Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

**7. Handling and storage**

<b>Handling</b>	Use only under a chemical fume hood. Do not breathe vapors or spray mist. Do not get in eyes, on skin, or on clothing. Wear personal protective equipment. Do not ingest. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. Take precautionary measures against static discharges.
<b>Storage</b>	Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area. Keep away from heat and sources of ignition.

**8. Exposure controls / personal protection**

**Exposure Guidelines**

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH	Mexico OEL (TWA)
Formaldehyde	TWA: 0.1 ppm STEL: 0.3 ppm	(Vacated) TWA: 3 ppm (Vacated) STEL: 10 ppm (Vacated) Ceiling: 5 ppm TWA: 0.75 ppm STEL: 2 ppm	IDLH: 20 ppm TWA: 0.016 ppm Ceiling: 0.1 ppm	Ceiling: 2 ppm Ceiling: 3 mg/m <sup>3</sup>
Methyl alcohol	TWA: 200 ppm STEL: 250 ppm Skin	(Vacated) TWA: 200 ppm (Vacated) TWA: 260 mg/m <sup>3</sup> (Vacated) STEL: 250 ppm (Vacated) STEL: 325 mg/m <sup>3</sup> Skin TWA: 200 ppm TWA: 260 mg/m <sup>3</sup>	IDLH: 6000 ppm TWA: 200 ppm TWA: 260 mg/m <sup>3</sup> STEL: 250 ppm STEL: 325 mg/m <sup>3</sup>	TWA: 200 ppm TWA: 260 mg/m <sup>3</sup> STEL: 250 ppm STEL: 310 mg/m <sup>3</sup>

**Legend**

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

<b>Engineering Measures</b>	Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location. Use explosion-proof electrical/ventilating/lighting/equipment. Ensure adequate ventilation, especially in confined areas.
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**Personal Protective Equipment**

<b>Eye/face Protection</b>	Tightly fitting safety goggles. Face-shield.
<b>Skin and body protection</b>	Wear appropriate protective gloves and clothing to prevent skin exposure.
<b>Respiratory Protection</b>	Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
<b>Hygiene Measures</b>	Handle in accordance with good industrial hygiene and safety practice.

**9. Physical and chemical properties**

<b>Physical State</b>	Liquid
<b>Appearance</b>	Colorless
<b>Odor</b>	pungent
<b>Odor Threshold</b>	No information available
<b>pH</b>	No information available
<b>Melting Point/Range</b>	0 °C / 32 °F
<b>Boiling Point/Range</b>	101 °C / 213.8 °F
<b>Flash Point</b>	50 °C / 122 °F
<b>Evaporation Rate</b>	No information available
<b>Flammability (solid,gas)</b>	Not applicable
<b>Flammability or explosive limits</b>	
Upper	No data available
Lower	No data available
<b>Vapor Pressure</b>	No information available
<b>Vapor Density</b>	> 1.0
<b>Specific Gravity</b>	No information available
<b>Solubility</b>	miscible
<b>Partition coefficient; n-octanol/water</b>	No data available
<b>Autoignition Temperature</b>	No information available
<b>Decomposition Temperature</b>	No information available
<b>Viscosity</b>	No information available

**10. Stability and reactivity**

<b>Reactive Hazard</b>	None known, based on information available
<b>Stability</b>	Stable under normal conditions.
<b>Conditions to Avoid</b>	Incompatible products. Excess heat. Keep away from open flames, hot surfaces and sources of ignition.
<b>Incompatible Materials</b>	Strong oxidizing agents, Strong bases, nitriles, Acids, Isocyanates, Acid anhydrides, Metals, Acid chlorides
<b>Hazardous Decomposition Products</b>	Hydrogen, Formaldehyde
<b>Hazardous Polymerization</b>	Hazardous polymerization does not occur.
<b>Hazardous Reactions</b>	None under normal processing.

**11. Toxicological information****Acute Toxicity**

<b>Product Information</b>	
<b>Oral LD50</b>	Category 3. ATE = 50 - 300 mg/kg.
<b>Dermal LD50</b>	Category 3. ATE = 200 - 1000 mg/kg.



Vapor LC50 Category 3. ATE = 2 - 10 mg/l.

**Component Information**

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Water	-	Not listed	Not listed
Formaldehyde	500 mg/kg ( Rat )	LD50 = 270 mg/kg ( Rabbit )	0.578 mg/L ( Rat ) 4 h
Methyl alcohol	Calc. ATE 60 mg/kg LD50 > 1187 – 2769 mg/kg ( Rat )	Calc. ATE 60 mg/kg LD50 = 17100 mg/kg ( Rabbit )	Calc. ATE 0.6 mg/L (vapours) or 0.5 mg/L (mists) LC50 = 128.2 mg/L ( Rat ) 4 h

Toxicologically Synergistic Products No information available

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

Irritation Causes burns by all exposure routes

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Water	7732-18-5	Not listed	Not listed	Not listed	Not listed	Not listed
Formaldehyde	50-00-0	Group 1	Known	A1	X	A2
Methyl alcohol	67-56-1	Not listed	Not listed	Not listed	Not listed	Not listed

**IARC: (International Agency for Research on Cancer)**  
 IARC: (International Agency for Research on Cancer)  
 Group 1 - Carcinogenic to Humans  
 Group 2A - Probably Carcinogenic to Humans  
 Group 2B - Possibly Carcinogenic to Humans  
**NTP: (National Toxicity Program)**  
 NTP: (National Toxicity Program)  
 Known - Known Carcinogen  
 Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen  
**ACGIH: (American Conference of Governmental Industrial Hygienists)**  
 A1 - Known Human Carcinogen  
 A2 - Suspected Human Carcinogen  
 A3 - Animal Carcinogen  
**Mexico - Occupational Exposure Limits - Carcinogens**  
 ACGIH: (American Conference of Governmental Industrial Hygienists)  
 Mexico - Occupational Exposure Limits - Carcinogens  
 A1 - Confirmed Human Carcinogen  
 A2 - Suspected Human Carcinogen  
 A3 - Confirmed Animal Carcinogen  
 A4 - Not Classifiable as a Human Carcinogen  
 A5 - Not Suspected as a Human Carcinogen

Mutagenic Effects Mutagenic effects have occurred in humans.

Reproductive Effects Experiments have shown reproductive toxicity effects on laboratory animals.

Developmental Effects Developmental effects have occurred in experimental animals. Component substance is listed on California Proposition 65 as a developmental hazard.

Teratogenicity Teratogenic effects have occurred in experimental animals.

STOT - single exposure Respiratory system Central nervous system (CNS) Optic nerve  
 STOT - repeated exposure Kidney Liver Heart spleen Blood

Aspiration hazard No information available

Symptoms / effects, both acute and delayed Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting: Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation: Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing

Endocrine Disruptor Information No information available

**Other Adverse Effects** Tumorigenic effects have been reported in experimental animals. See actual entry in RTECS for complete information.

**12. Ecological information**

**Ecotoxicity**

Do not empty into drains. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment. Contains a substance which is: Toxic to aquatic organisms.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Formaldehyde	Not listed	Leuciscus idus: LC50 = 15 mg/L 96h	Not listed	EC50 = 20 mg/L 96h EC50 = 2 mg/L 48h
Methyl alcohol	Not listed	Pimephales promelas: LC50 > 10000 mg/L 96h	EC50 = 39000 mg/L 25 min EC50 = 40000 mg/L 15 min EC50 = 43000 mg/L 5 min	EC50 > 10000 mg/L 24h

**Persistence and Degradability** Miscible with water Persistence is unlikely based on information available.

**Bioaccumulation/ Accumulation** No information available.

**Mobility** . Will likely be mobile in the environment due to its water solubility.

Component	log Pow
Formaldehyde	-0.35
Methyl alcohol	-0.74

**13. Disposal considerations**

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

Component	RCRA - U Series Wastes	RCRA - P Series Wastes
Formaldehyde - 50-00-0	U122	-
Methyl alcohol - 67-56-1	U154	-

**14. Transport information**

**DOT**

UN-No UN1198  
 Proper Shipping Name FORMALDEHYDE SOLUTIONS, FLAMMABLE  
 Hazard Class 3  
 Subsidiary Hazard Class 8  
 Packing Group III

**TDG**

UN-No UN1198  
 Proper Shipping Name FORMALDEHYDE SOLUTION, FLAMMABLE  
 Hazard Class 3  
 Subsidiary Hazard Class 8  
 Packing Group III

**IATA**

UN-No UN1198  
 Proper Shipping Name FORMALDEHYDE SOLUTION, FLAMMABLE  
 Hazard Class 3  
 Subsidiary Hazard Class 8  
 Packing Group III

**IMDG/IMO**

UN-No UN1198  
 Proper Shipping Name FORMALDEHYDE SOLUTION, FLAMMABLE  
 Hazard Class 3  
 Subsidiary Hazard Class 8

Packing Group

III

**15. Regulatory information**

All of the components in the product are on the following Inventory lists: X = listed

## International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Water	X	X	-	231-791-2	-		X	-	X	X	X
Formaldehyde	X	X	-	200-001-8	-		X	X	X	X	X
Methyl alcohol	X	X	-	200-659-6	-		X	X	X	X	X

## Legend:

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

## U.S. Federal Regulations

## TSCA 12(b)

Not applicable

## SARA 313

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Formaldehyde	50-00-0	37 - 40	0.1
Methyl alcohol	67-56-1	15	1.0

SARA 311/312 Hazard Categories See section 2 for more information

## CWA (Clean Water Act)

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Formaldehyde	X	100 lb	-	-

## Clean Air Act

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Formaldehyde	X		-
Methyl alcohol	X		-

## OSHA Occupational Safety and Health Administration

Component	Specifically Regulated Chemicals	Highly Hazardous Chemicals
Formaldehyde	2 ppm STEL 0.5 ppm Action Level 0.75 ppm TWA	TQ: 1000 lb

## CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs

Formaldehyde	100 lb	100 lb
Methyl alcohol	5000 lb	-

**California Proposition 65** This product contains the following proposition 65 chemicals

Component	CAS-No	California Prop. 65	Prop 65 NSRL	Category
Formaldehyde	50-00-0	Carc. (Gaseous only)	40 µg/day	Carcinogen
Methyl alcohol	67-56-1	Developmental	-	Developmental

#### U.S. State Right-to-Know

##### Regulations

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Water	-	-	X	-	-
Formaldehyde	X	X	X	X	X
Methyl alcohol	X	X	X	X	X

#### U.S. Department of Transportation

Reportable Quantity (RQ): Y  
 DOT Marine Pollutant N  
 DOT Severe Marine Pollutant N

#### U.S. Department of Homeland Security

This product contains the following DHS chemicals:

Component	DHS Chemical Facility Anti-Terrorism Standard
Formaldehyde	11250 lb STQ (solution)

#### Other International Regulations

Mexico - Grade Moderate risk, Grade 2

## 16. Other information

**Prepared By** Regulatory Affairs  
 Thermo Fisher Scientific  
 Email: EMSDS.RA@thermofisher.com

**Creation Date** 08-Feb-2010  
**Revision Date** 17-Jan-2018  
**Print Date** 17-Jan-2018  
**Revision Summary** This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

#### Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of SDS**



### 3.4.b. Formalin

## SAFETY DATA SHEET

Creation Date 12-May-2011

Revision Date 13-Apr-2018

Revision Number 1

### 1. Identification

**Product Name** Formalin, Buffered, 10% (Phosphate Buffer/Certified)  
**Cat No. :** SF100-4, SF100-20, SF100-200  
**Synonyms** No information available  
**Recommended Use** Laboratory chemicals.  
**Uses advised against** Food, drug, pesticide or biocidal product use

#### Details of the supplier of the safety data sheet.

##### Company

Fisher Scientific  
One Reagent Lane  
Fair Lawn, NJ 07410  
Tel: (201) 796-7100

##### **Emergency Telephone Number**

CHEMTREC®, Inside the USA: 800-424-9300  
CHEMTREC®, Outside the USA: 001-703-527-3887

### 2. Hazard(s) identification

#### Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids	Category 4
Skin Corrosion/Irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 1
Skin Sensitization	Category 1
Germ Cell Mutagenicity	Category 2
Carcinogenicity	Category 1A
Specific target organ toxicity (single exposure)	Category 1
Target Organs - Respiratory system, Central nervous system (CNS).	

#### Label Elements

##### **Signal Word**

Danger

##### **Hazard Statements**

Combustible liquid  
Causes skin irritation  
May cause an allergic skin reaction  
Causes serious eye damage  
Suspected of causing genetic defects  
May cause cancer  
Causes damage to organs

**Precautionary Statements****Prevention**

Obtain special instructions before use  
 Do not handle until all safety precautions have been read and understood  
 Use personal protective equipment as required  
 Wash face, hands and any exposed skin thoroughly after handling  
 Contaminated work clothing should not be allowed out of the workplace  
 Wear protective gloves  
 Do not breathe dust/fume/gas/mist/vapors/spray  
 Do not eat, drink or smoke when using this product  
 Keep away from heat/sparks/open flames/hot surfaces. - No smoking

**Response**

IF exposed: Call a POISON CENTER or doctor/physician

**Skin**

IF ON SKIN: Wash with plenty of soap and water  
 Take off contaminated clothing and wash before reuse  
 If skin irritation or rash occurs: Get medical advice/attention

**Eyes**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
 Immediately call a POISON CENTER or doctor/physician

**Fire**

In case of fire: Use CO2, dry chemical, or foam for extinction

**Storage**

Store locked up  
 Store in a well-ventilated place. Keep cool

**Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

None identified

WARNING: Reproductive Harm - <https://www.p65warnings.ca.gov/>.

### 3. Composition/Information on Ingredients

Component	CAS-No	Weight %
Water	7732-18-5	92-94
Formaldehyde	50-00-0	4.0
Methyl alcohol	67-56-1	1.0 - 2.0
Sodium phosphate dibasic	7558-79-4	0.7
Phosphoric acid, monosodium salt, monohydrate	10049-21-5	0.4

### 4. First-aid measures

**General Advice**

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

**Eye Contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

**Skin Contact**

Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.

<b>Inhalation</b>	Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.
<b>Ingestion</b>	Do not induce vomiting. Call a physician or Poison Control Center immediately.
<b>Most important symptoms and effects</b>	May cause allergic skin reaction. Breathing difficulties. Causes eye burns. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing: Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting
<b>Notes to Physician</b>	Treat symptomatically

### 5. Fire-fighting measures

<b>Suitable Extinguishing Media</b>	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Cool closed containers exposed to fire with water spray.
<b>Unsuitable Extinguishing Media</b>	No information available
<b>Flash Point</b>	81 °C / 177.8 °F
<b>Method -</b>	No information available
<b>Autoignition Temperature</b>	No information available
<b>Explosion Limits</b>	
<b>Upper</b>	No data available
<b>Lower</b>	No data available
<b>Sensitivity to Mechanical Impact</b>	No information available
<b>Sensitivity to Static Discharge</b>	No information available

#### Specific Hazards Arising from the Chemical

Combustible material. Risk of ignition. Containers may explode when heated. Thermal decomposition can lead to release of irritating gases and vapors. Keep product and empty container away from heat and sources of ignition.

#### Hazardous Combustion Products

Carbon monoxide (CO) Carbon dioxide (CO<sub>2</sub>)

#### Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

#### NFPA

<b>Health</b>	<b>Flammability</b>	<b>Instability</b>	<b>Physical hazards</b>
2	2	0	N/A

### 6. Accidental release measures

<b>Personal Precautions</b>	Use personal protective equipment. Evacuate personnel to safe areas. Remove all sources of ignition. Take precautionary measures against static discharges. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing.
<b>Environmental Precautions</b>	Should not be released into the environment. See Section 12 for additional ecological information.
<b>Methods for Containment and Clean Up</b>	Remove all sources of ignition. Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

### 7. Handling and storage

<b>Handling</b>	Use only under a chemical fume hood. Wear personal protective equipment. Do not get in eyes, on skin, or on clothing. Do not breathe vapors or spray mist. Do not ingest. Keep away from open flames, hot surfaces and sources of ignition.
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**Storage** Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat and sources of ignition.

## 8. Exposure controls / personal protection

### Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH	Mexico OEL (TWA)
Formaldehyde	TWA: 0.1 ppm STEL: 0.3 ppm	(Vacated) TWA: 3 ppm (Vacated) STEL: 10 ppm (Vacated) Ceiling: 5 ppm TWA: 0.75 ppm STEL: 2 ppm	IDLH: 20 ppm TWA: 0.016 ppm Ceiling: 0.1 ppm	Ceiling: 2 ppm Ceiling: 3 mg/m <sup>3</sup>
Methyl alcohol	TWA: 200 ppm STEL: 250 ppm Skin	(Vacated) TWA: 200 ppm (Vacated) TWA: 260 mg/m <sup>3</sup> (Vacated) STEL: 250 ppm (Vacated) STEL: 325 mg/m <sup>3</sup> Skin TWA: 200 ppm TWA: 260 mg/m <sup>3</sup>	IDLH: 6000 ppm TWA: 200 ppm TWA: 260 mg/m <sup>3</sup> STEL: 250 ppm STEL: 325 mg/m <sup>3</sup>	TWA: 200 ppm TWA: 260 mg/m <sup>3</sup> STEL: 250 ppm STEL: 310 mg/m <sup>3</sup>

### Legend

**ACGIH** - American Conference of Governmental Industrial Hygienists

**OSHA** - Occupational Safety and Health Administration

**NIOSH IDLH**: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

**Engineering Measures** Use only under a chemical fume hood. Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

### Personal Protective Equipment

<b>Eyeface Protection</b>	Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
<b>Skin and body protection</b>	Wear appropriate protective gloves and clothing to prevent skin exposure.
<b>Respiratory Protection</b>	Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
<b>Hygiene Measures</b>	Handle in accordance with good industrial hygiene and safety practice.

## 9. Physical and chemical properties

<b>Physical State</b>	Liquid
<b>Appearance</b>	Clear
<b>Odor</b>	pungent
<b>Odor Threshold</b>	No information available
<b>pH</b>	6.9 - 7.1
<b>Melting Point/Range</b>	0 °C / 32 °F
<b>Boiling Point/Range</b>	93.9 - 100 °C / 201 - 212 °F
<b>Flash Point</b>	81 °C / 177.8 °F
<b>Evaporation Rate</b>	> 1.0
<b>Flammability (solid,gas)</b>	Not applicable
<b>Flammability or explosive limits</b>	
<b>Upper</b>	No data available
<b>Lower</b>	No data available

Vapor Pressure	No information available
Vapor Density	1.0
Specific Gravity	1.10
Solubility	miscible
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	No information available
Decomposition Temperature	No information available
Viscosity	No information available

## 10. Stability and reactivity

Reactive Hazard	None known, based on information available
Stability	Stable under normal conditions.
Conditions to Avoid	Incompatible products. Excess heat. Keep away from open flames, hot surfaces and sources of ignition.
Incompatible Materials	Strong oxidizing agents
Hazardous Decomposition Products	Carbon monoxide (CO), Carbon dioxide (CO <sub>2</sub> )
Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	None under normal processing.

## 11. Toxicological information

### Acute Toxicity

#### Product Information

##### Oral LD50

Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

##### Dermal LD50

Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

##### Vapor LC50

Based on ATE data, the classification criteria are not met. ATE > 20 mg/l.

#### Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Water	-	Not listed	Not listed
Formaldehyde	500 mg/kg ( Rat )	LD50 = 270 mg/kg ( Rabbit )	0.578 mg/L ( Rat ) 4 h
Methyl alcohol	Calc. ATE 60 mg/kg LD50 > 1187 – 2769 mg/kg ( Rat )	Calc. ATE 60 mg/kg LD50 = 17100 mg/kg ( Rabbit )	Calc. ATE 0.6 mg/L (vapours) or 0.5 mg/L (mists) LC50 = 128.2 mg/L ( Rat ) 4 h
Sodium phosphate dibasic	LD50 = 17 g/kg ( Rat )	Not listed	Not listed

**Toxicologically Synergistic Products** No information available

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation	Severe eye irritant; Irritating to skin
Sensitization	May cause sensitization by skin contact
Carcinogenicity	The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Water	7732-18-5	Not listed	Not listed	Not listed	Not listed	Not listed
Formaldehyde	50-00-0	Group 1	Known	A1	X	A2
Methyl alcohol	67-56-1	Not listed	Not listed	Not listed	Not listed	Not listed
Sodium phosphate dibasic	7558-79-4	Not listed	Not listed	Not listed	Not listed	Not listed
Phosphoric acid,	10049-21-5	Not listed	Not listed	Not listed	Not listed	Not listed



monosodium salt, monohydrate					
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<p><b>IARC: (International Agency for Research on Cancer)</b></p> <p><b>NTP: (National Toxicity Program)</b></p> <p><b>ACGIH: (American Conference of Governmental Industrial Hygienists)</b></p> <p><b>Mexico - Occupational Exposure Limits - Carcinogens</b></p>	<p><b>IARC: (International Agency for Research on Cancer)</b>                  Group 1 - Carcinogenic to Humans                  Group 2A - Probably Carcinogenic to Humans                  Group 2B - Possibly Carcinogenic to Humans                  NTP: (National Toxicity Program)                  Known - Known Carcinogen                  Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen                  A1 - Known Human Carcinogen                  A2 - Suspected Human Carcinogen                  A3 - Animal Carcinogen                  ACGIH: (American Conference of Governmental Industrial Hygienists)                  Mexico - Occupational Exposure Limits - Carcinogens                  A1 - Confirmed Human Carcinogen                  A2 - Suspected Human Carcinogen                  A3 - Confirmed Animal Carcinogen                  A4 - Not Classifiable as a Human Carcinogen                  A5 - Not Suspected as a Human Carcinogen</p>
<b>Mutagenic Effects</b>	No information available
<b>Reproductive Effects</b>	No information available.
<b>Developmental Effects</b>	No information available.
<b>Teratogenicity</b>	No information available.
<b>STOT - single exposure</b>	Respiratory system Central nervous system (CNS)
<b>STOT - repeated exposure</b>	None known
<b>Aspiration hazard</b>	No information available
<b>Symptoms / effects, both acute and delayed</b>	Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing: Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting
<b>Endocrine Disruptor Information</b>	No information available
<b>Other Adverse Effects</b>	The toxicological properties have not been fully investigated.

**12. Ecological information**

**Ecotoxicity**

The product contains following substances which are hazardous for the environment.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Formaldehyde	Not listed	Leuciscus idus: LC50 = 15 mg/L 96h	Not listed	EC50 = 20 mg/L 96h EC50 = 2 mg/L 48h
Methyl alcohol	Not listed	Pimephales promelas: LC50 > 10000 mg/L 96h	EC50 = 39000 mg/L 25 min EC50 = 40000 mg/L 15 min EC50 = 43000 mg/L 5 min	EC50 > 10000 mg/L 24h

**Persistence and Degradability** Miscible with water Persistence is unlikely based on information available.

**Bioaccumulation/ Accumulation** No information available.

**Mobility** . Will likely be mobile in the environment due to its water solubility.

Component	log Pow
Formaldehyde	-0.35
Methyl alcohol	-0.74

**13. Disposal considerations**

**Waste Disposal Methods**

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

Component	RCRA - U Series Wastes	RCRA - P Series Wastes
Formaldehyde - 50-00-0	U122	-
Methyl alcohol - 67-56-1	U154	-

### 14. Transport information

<b>DOT</b>	Not regulated
<b>TDG</b>	Not regulated
<b>IATA</b>	Not regulated
<b>IMDG/IMO</b>	Not regulated

### 15. Regulatory information

**All of the components in the product are on the following inventory lists:** The product is classified and labeled according to EC directives or corresponding national laws. The product is classified and labeled in accordance with Directive 1999/45/EC. See Component SDS's. China X = listed Australia U.S.A. (TSCA) Canada (DSL/NDSL) Europe (EINECS/ELINCS/NLP) Australia (AICS) Korea (ECL) China (IECSC) Japan (ENCS) Philippines (PICCS) Philippines Complete Regulatory Information contained in following SDS's

**International Inventories**

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Water	X	X	-	231-791-2	-	-	X	-	X	X	X
Formaldehyde	X	X	-	200-001-8	-	-	X	X	X	X	X
Methyl alcohol	X	X	-	200-659-6	-	-	X	X	X	X	X
Sodium phosphate dibasic	X	X	-	231-448-7	-	-	X	X	X	X	X
Phosphoric acid, monosodium salt, monohydrate	-	-	-	-	-	-	X	-	X	X	-

**Legend:**

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

**U.S. Federal Regulations**

TSCA 12(b) Not applicable

**SARA 313**

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Formaldehyde	50-00-0	4.0	0.1
Methyl alcohol	67-56-1	1.0 - 2.0	1.0

SARA 311/312 Hazard Categories See section 2 for more information

**CWA (Clean Water Act)**

**Formalin, Buffered, 10% (Phosphate Buffer/Certified)**

Revision Date 13-Apr-2018

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Formaldehyde	X	100 lb	-	-
Sodium phosphate dibasic	X	5000 lb	-	-

**Clean Air Act**

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Formaldehyde	X		-
Methyl alcohol	X		-

**OSHA Occupational Safety and Health Administration**

Component	Specifically Regulated Chemicals	Highly Hazardous Chemicals
Formaldehyde	2 ppm STEL 0.5 ppm Action Level 0.75 ppm TWA	TQ: 1000 lb

**CERCLA** This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Formaldehyde	100 lb	100 lb
Methyl alcohol	5000 lb	-
Sodium phosphate dibasic	5000 lb	-

**California Proposition 65** This product contains the following proposition 65 chemicals

Component	CAS-No	California Prop. 65	Prop 65 NSRL	Category
Formaldehyde	50-00-0	Carc. (Gaseous only)	40 µg/day	Carcinogen
Methyl alcohol	67-56-1	Developmental	-	Developmental

**U.S. State Right-to-Know Regulations**

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Water	-	-	X	-	-
Formaldehyde	X	X	X	X	X
Methyl alcohol	X	X	X	X	X
Sodium phosphate dibasic	X	X	X	-	-

**U.S. Department of Transportation**

Reportable Quantity (RQ): Y  
 DOT Marine Pollutant N  
 DOT Severe Marine Pollutant N

**U.S. Department of Homeland Security**

This product contains the following DHS chemicals:

Component	DHS Chemical Facility Anti-Terrorism Standard
Formaldehyde	11250 lb STQ (solution)

**Other International Regulations**

**Mexico - Grade** Moderate risk, Grade 2

**16. Other information**

**Prepared By** Regulatory Affairs  
 Thermo Fisher Scientific  
 Email: EMSDS.RA@thermofisher.com



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<b>Creation Date</b>	12-May-2011
<b>Revision Date</b>	13-Apr-2018
<b>Print Date</b>	13-Apr-2018
<b>Revision Summary</b>	This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of SDS**

### 3.4.c. Carosafe

## Safety Data Sheet

Carosafe®

**CAROLINA**  
www.carolina.com

### Section 1 Product Description

**Product Name:** Carosafe®  
**Recommended Use:** Science education applications  
**Synonyms:** None  
**Distributor:** Carolina Biological Supply Company  
2700 York Road, Burlington, NC 27215  
1-800-227-1150  
**Chemical Information:** 800-227-1150 (8am-5pm (ET) M-F)  
**Chemtrec:** 800-424-9300 (Transportation Spill Response 24 hours)

### Section 2 Hazard Identification

Classification of the chemical in accordance with paragraph (d) of §1910.1200;

**WARNING**



Harmful if swallowed.

**GHS Classification:**  
Acute Toxicity - Oral Category 4

**Other Safety Precautions:** May cause eye irritation.  
May cause gastrointestinal discomfort.  
May cause irritation to respiratory tract.  
May cause irritation to skin.

### Section 3 Composition / Information on Ingredients

<u>Chemical Name</u>	<u>CAS #</u>	<u>%</u>
Water	7732-18-5	89
Propylene Glycol	57-55-6	10.01
2-Amino-2-Ethyl-1,3-Propanediol	115-70-8	0.66
2-Phenoxyethanol	122-99-6	0.33

### Section 4 First Aid Measures

#### Emergency and First Aid Procedures

**Inhalation:** In case of accident by inhalation: remove casualty to fresh air and keep at rest.  
**Eyes:** In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
**Skin Contact:** After contact with skin, wash immediately with plenty of water.  
**Ingestion:** IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

### Section 5 Firefighting Procedures

**Extinguishing Media:** Use dry chemical, CO<sub>2</sub> or appropriate foam.  
**Fire Fighting Methods and Protection:** Firefighters should wear full protective equipment and NIOSH approved self-contained breathing apparatus.  
**Fire and/or Explosion Hazards:** Fire or excessive heat may produce hazardous decomposition products.  
**Hazardous Combustion Products:** Carbon oxides, Nitrogen oxides

# Safety Data Sheet

## Section 6 Spill or Leak Procedures

### Steps to Take in Case Material Is Released or Spilled:

Exposure to the spilled material may be irritating or harmful. Follow personal protective equipment recommendations found in Section 8 of this SDS. Additional precautions may be necessary based on special circumstances created by the spill including: the material spilled, the quantity of the spill, the area in which the spill occurred. Also consider the expertise of employees in the area responding to the spill. Ventilate the contaminated area. Isolate area. Keep unnecessary personnel away. Prevent the spread of any spill to minimize harm to human health and the environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section 8 at a minimum. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal evaluation. Contain the discharged material. Use an inert absorbent such as sand or vermiculite. Place in properly labeled closed container. Do not flush spill to drain.

## Section 7 Handling and Storage

**Handling:** Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Avoid contact with skin and eyes. Avoid contact with clothing. Keep container tightly closed in a cool, well-ventilated place. Avoid creating and inhaling spray or mist.

**Storage:** Suitable for any general chemical storage. Keep container tightly closed in a cool, well-ventilated place. Material is hygroscopic (absorbs moisture).

**Storage Code:** Green - general chemical storage

## Section 8 Protection Information

Chemical Name	ACGIH		OSHA PEL	
	(TWA)	(STEL)	(TWA)	(STEL)
Propylene Glycol	N/A	N/A	N/A	N/A
2-Amino-2-Ethyl-1,3-Propanediol	N/A	N/A	N/A	N/A
2-Phenoxyethanol	N/A	N/A	N/A	N/A

### Control Parameters

**Engineering Measures:** No exposure limits exist for the constituents of this product. General room ventilation might be required to maintain operator comfort under normal conditions of use.

**Personal Protective Equipment (PPE):** Lab coat, apron, eye wash, safety shower.

**Respiratory Protection:** No respiratory protection required under normal conditions of use.

**Eye Protection:** Wear appropriate eye protection when handling this product.

**Skin Protection:** Avoid skin contact by wearing chemically resistant gloves, an apron and other protective equipment depending upon conditions of use. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work.

**Gloves:** Natural rubber, Neoprene, PVC or equivalent.

## Section 9 Physical Data

<b>Formula:</b> See Section 3	<b>Vapor Pressure:</b> N/A
<b>Molecular Weight:</b> N/A	<b>Evaporation Rate (BuAc=1):</b> N/A
<b>Appearance:</b> Colorless Liquid	<b>Vapor Density (Air=1):</b> N/A
<b>Odor:</b> Mild Sweet	<b>Specific Gravity:</b> >1
<b>Odor Threshold:</b> No data available	<b>Solubility in Water:</b> Soluble
<b>pH:</b> No data available	<b>Log Pow (calculated):</b> 1.13 at 25 °C
<b>Melting Point:</b> -60 C	<b>Autoignition Temperature:</b> No data available
<b>Boiling Point:</b> 100 C	<b>Decomposition Temperature:</b> No data available
<b>Flash Point:</b> 99 C	<b>Viscosity:</b> No data available
<b>Flammable Limits in Air:</b> (Propylene Glycol) LEL: 2.6% UEL: 12.6%	<b>Percent Volatile by Volume:</b> N/A

## Section 10 Reactivity Data

**Reactivity:** No data available

**Chemical Stability:** Stable under normal conditions.

## Safety Data Sheet

**Conditions to Avoid:** Sparks, open flame, other ignition sources, and elevated temperatures.  
**Incompatible Materials:** Caustics (bases), Metals, Strong oxidizing agents  
**Hazardous Decomposition Products:** Nitrogen oxides, Carbon oxides  
**Hazardous Polymerization:** Will not occur

### Section 11 Toxicity Data

**Routes of Entry:** Inhalation, ingestion, eye or skin contact.  
**Symptoms (Acute):** N/A  
**Delayed Effects:** No data available

**Acute Toxicity:**

Chemical Name	CAS Number	Oral LD50	Dermal LD50	Inhalation LC50
Water	7732-18-5	Oral LD50 Rat 90000 mg/kg		
Propylene Glycol	57-55-6	Oral LD50 Dog 22000 mg/kg	Dermal LD50 Rabbit 20800 mg/kg	
2-Amino-2-Ethyl-1,3-Propanediol	115-70-8			
2-Phenoxyethanol	122-99-6	Oral LD50 Rat 1260 mg/kg Oral LD50 Mouse 933 mg/kg	Dermal LD50 Rat 14422 mg/kg Dermal LD50 Rabbit 5 ml/kg	

**Carcinogenicity:**

Chemical Name	CAS Number	IARC	NTP	OSHA
Propylene Glycol	57-55-6	Not listed	Not listed	Not listed
2-Amino-2-Ethyl-1,3-Propanediol	115-70-8	Not listed	Not listed	Not listed
2-Phenoxyethanol	122-99-6	Not listed	Not listed	Not listed

**Chronic Effects:**

**Mutagenicity:** No evidence of a mutagenic effect.  
**Teratogenicity:** No evidence of a teratogenic effect (birth defect).  
**Sensitization:** No evidence of a sensitization effect.  
**Reproductive:** No evidence of negative reproductive effects.  
**Target Organ Effects:**  
**Acute:** See Section 2  
**Chronic:** Not listed as a carcinogen by IARC, NTP or OSHA.

### Section 12 Ecological Data

**Overview:** Slight ecological hazard. In high concentrations, this product may be dangerous to plants and/or wildlife. Keep out of waterways.  
**Mobility:** No data  
**Persistence:** Biodegradation, Dissolved into water  
**Bioaccumulation:** No data  
**Degradability:** No data  
**Other Adverse Effects:** No data

Chemical Name	CAS Number	Eco Toxicity
Water	7732-18-5	No data available
Propylene Glycol	57-55-6	96 HR LC50 PIMEPHALES PROMELAS 710 MG/L 96 HR LC50 PIMEPHALES PROMELAS 51400 MG/L [STATIC] 96 HR LC50 ONCORHYNCHUS MYKISS 51600 MG/L [STATIC] 48 HR EC50 DAPHNIA MAGNA > 1000 MG/L [STATIC] 24 HR EC50 DAPHNIA MAGNA > 10000 MG/L 96 HR EC50 PSEUDOKIRCHNERIELLA SUBCAPITATA 19000 MG/L
2-Amino-2-Ethyl-1,3-Propanediol	115-70-8	Not available

# Safety Data Sheet

2-Phenoxyethanol

122-99-6

96 HR LC50 PIMEPHALES PROMELAS 366 MG/L [STATIC]  
48 HR EC50 DAPHNIA MAGNA > 500 MG/L  
72 HR EC50 DESMODESMUS SUBSPICATUS > 500 MG/L

## Section 13

## Disposal Information

**Disposal Methods:** Dispose in accordance with all applicable Federal, State and Local regulations. Always contact a permitted waste disposer (TSD) to assure compliance.  
**Waste Disposal Code(s):** Not Determined

## Section 14

## Transport Information

**Ground - DOT Proper Shipping Name:** Not regulated for ground transport by US DOT.  
**Air - IATA Proper Shipping Name:** Not regulated for air transport by IATA.

## Section 15

## Regulatory Information

**TSCA Status:** All components in this product are on the TSCA Inventory.

Chemical Name	CAS Number	§ 313 Name	§ 304 RQ	CERCLA RQ	§ 302 TPQ	CAA 112(2) TQ
Propylene Glycol	57-55-6	No	No	No	No	No
2-Amino-2-Ethyl-1,3-Propanediol	115-70-8	No	No	No	No	No
2-Phenoxyethanol	122-99-6	No	No	No	No	No

**California Prop 65:** No California Proposition 65 ingredients

## Section 16

## Additional Information

**Revised:** 08/21/2018

**Replaces:** 06/15/2018

**Printed:** 08-25-2018

The information provided in this (Material) Safety Data Sheet represents a compilation of data drawn directly from various sources available to us. Carolina Biological Supply makes no representation or guarantee as to the suitability of this information to a particular application of the substance covered in the (Material) Safety Data Sheet.

### Glossary

ACGIH	American Conference of Governmental Industrial Hygienists	NTP	National Toxicology Program
CAS	Chemical Abstract Service Number	OSHA	Occupational Safety and Health Administration
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	PEL	Permissible Exposure Limit
DOT	U.S. Department of Transportation	ppm	Parts per million
IARC	International Agency for Research on Cancer	RCRA	Resource Conservation and Recovery Act
N/A	Not Available	SARA	Superfund Amendments and Reauthorization Act
		TLV	Threshold Limit Value
		TSCA	Toxic Substances Control Act
		IDLH	Immediately dangerous to life and health

### **3.5. Independent Inspection of Facilities and student exposure to potential toxins**

**Preface:** Faculty, staff, students, and visitors upon entering the FAMU depository of human specimen run the risk of injury or exposure to hazardous materials. To ensure that the health and safety of any and all participants in the space is properly maintained, SOAHS, their SOP, and the health of the faculty and students are evaluated and monitored. All environmental protection and safety procedures shall be checked and evaluated by independent entities that will return their evaluations to the SOAHS in order to inform whether or not the SOP is in fact meeting standards and to allow for better improvement of the SOP in situations where the standards are not being met.

#### **3.5.a. Fire safety**

Fire alarms, extinguishers, exits and allowable space for proper fire safety within the lab space and depository is monitored by the FAMU Environmental Health and Safety Department, phone number 850-599-3442. All violations that might place individuals at risk are to be immediately reported to the SOAHS and the University. Appropriate individuals responsible for maintaining the equipment or fire safety standards will be informed and proper actions will be taken to correct the problem.

#### **3.5.b. Facility Security**

Security doors, swipe card entrance device, and alarms are monitored and maintained. Any and all issues that might place individuals at risk are to be immediately reported to the main office of SOAHS by the faculty and staff and an applicable associate to the FAMU Police Department at phone number 850-599-3256.

#### **3.5.c. Environmental Health and Safety**

##### **Safety Equipment**

Eye wash stations, first aid kits, Biohazard Sharpe waste containers, and proper signage within the lab space and depository is monitored by the FAMU Environmental Health and Safety department, all violations that might place

individuals at risk are immediately reported to the SOAHS and the University. Appropriate individuals responsible for maintaining the equipment or fire safety standards will be informed and proper actions will be taken to correct the problem.

### **Personnel Formaldehyde Exposure**

Individual Faculty or student formaldehyde exposure is monitored by the FAMU Environmental Health and Safety located in POMA division of Health Safety. Individuals may be required to wear a Formaldehyde ChromAir Badge (380007-10) to determine the parts per million to formaldehyde. Standard personnel exposure should meet OSHA requirement for formaldehyde. Results from measuring individual exposure will be reported to the SOAHS and the University in order to ensure that the SOP is appropriate. If any violations are detected that might place individuals at risk then SOAHS is immediately contacted so that any non-compliance items will be corrected.

**3.5.c. i. Environmental Health and Safety Air  
Quality and Proper Ventilation Report**



**3.5.c. ii. Environmental Health and Personnel  
Formaldehyde Exposure Report**

### **3.5.d. Anatomical Board Independent Inspection of Facilities and Verification of Specimen Inventory Information**

Every facility which receives specimens from the Anatomical Board will be independently inspected by an Anatomical Board appointed representative from a different facility. This inspection will include verification of security measures, specimen storage, safety procedures, Pledge of Respect compliance and verification of the location of every specimen on the specimen inventory sheet for that facility. Such inspections will occur at FAMU depository for Human specimen and teaching lab once every three calendar years. The site visit inspection form is displayed below in the SOP and is also available at <http://anatbd.acb.med.ufl.edu/forms>

### **3.5.d. Site Inspection Form**



Florida Agricultural & Mechanical University  
 School of Allied Health Sciences  
 334 W Palmer Ave Lewis Beck Suite 308  
 Tallahassee FL 32307  
 Telephone: 1-850-569-3818

**ANATOMICAL BOARD OF THE  
 STATE OF FLORIDA**

Miami Office:  
 University of Miami Miller  
 School of Medicine  
 Office of Medical Education  
 P.O. Box 018960 (R-180)  
 Miami, FL 33101  
 Telephone: 305-245-8691

Orlando Office:  
 University of Central Florida  
 College of Medicine  
 Health Sciences Campus-Lake  
 Nona 8850 Lake Nona Blvd.  
 Orlando, FL 32827-7408  
 Telephone: 407-266-1142

Tallahassee Office:  
 Florida State University  
 College of Medicine  
 1115 West Coll Street  
 Box 30843000  
 Tallahassee FL 32306-4300  
 Telephone: 850-645-8449

Gainesville Office:  
 University of Florida  
 College of Medicine  
 Health Sciences Center  
 PO Box 100285  
 Gainesville, FL 32610-0235  
 Telephone: 352-392-3588

**Inspection of Facilities Housing, and Inventory of, Anatomical Specimens Provided by  
 the Anatomical Board of the State of Florida**

NAME OF FACILITY: \_\_\_\_\_

DATE OF INSPECTION: \_\_\_\_\_

NAME OF INSPECTOR: \_\_\_\_\_

AFFILIATION OF INSPECTOR: \_\_\_\_\_

**(i) INSPECTION OF FACILITIES**

- a) PLEASE PROVIDE A BRIEF DESCRIPTION OF THIS FACILITY (include type of building, number of doors, windows, work stations, flooring, AV equipment. If there are windows, are they adequately covered?)

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

- b) AIR FLOW

It is required that laboratories in which specimens fixed with formaldehyde are used be inspected annually by Environmental Health and Safety personnel (or equivalent authority) to ensure adequate air flow and levels of formaldehyde not exceeding 0.75 parts per million for an eight-hour period, in compliance with OSHA regulation 1910.1048c.

Report Attached

**(ii) SECURITY**

- a) Which courses utilize these facilities?

\_\_\_\_\_  
 \_\_\_\_\_

- b) What type of security is in place at this facility? (key card, code, video surveillance?)

\_\_\_\_\_  
 \_\_\_\_\_



- c) Who monitors security measures in place? Is the list of those who have access to these facilities updated (within 30 days of the end of each course) and are security access procedures similarly updated?

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- d) What records pertaining to security are kept? (e.g. are video surveillance tapes kept? If so, for how long?)

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- e) Where are specimens not in use stored? (different rooms, buildings, under refrigeration?)

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- f) How are specimens no longer in use disposed of? (returned to Anatomical Board, cremated)

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**(iii) SAFETY**

- a) Is there a copy of the rules and regulations which must be followed when working in the laboratory clearly visible and available for consultation by all individuals handling human specimens?

YES  NO

- b) It is recommended that the following safety materials be available for those handling anatomical specimens provided by the Anatomical Board at this facility:

Gloves  Lab Coats

Eye protection  Face masks

Eye wash  First Aid Kit

Emergency plan for stick injury

Security / Emergency telephone numbers clearly posted

**(iv) RESPECT**

- a) PLEDGE OF RESPECT FORMS

Pledge of Respect forms are  / are not  completed and filed for ALL personnel with access to rooms where specimens are housed at this facility.



- b) Are the No Visitors Policy, no photography of any kind without permission from the Anatomical Board and no posting of any information pertaining to courses at this facility utilizing specimens provided by the Anatomical board on any social media verbally stated at the beginning of each course offered at this facility?

YES  NO

**(v) VERIFICATION OF SPECIMEN INVENTORY**

- a) Individuals responsible for specimens at this facility are:

1. \_\_\_\_\_  
\_\_\_\_\_  
2. \_\_\_\_\_  
\_\_\_\_\_  
3. \_\_\_\_\_  
\_\_\_\_\_

- b) The inspector should attach a copy of the specimen inventory for this facility, verifying that they have accounted for all specimens and that the specimens are appropriately housed and secured.
- c) Please comment or list any concerns you may have pertaining to the housing or use of anatomical specimens at this facility.

I verify that the information contained within this report is correct and that Anatomical Board policies have been made clear to those responsible for anatomical specimens supplied by the Anatomical Board to this facility.

\_\_\_\_\_  
Signature of Inspector

\_\_\_\_\_  
Date

\_\_\_\_\_  
Telephone number of Inspector

#### **4. Review and updating Standard Operating Procedure**

To ensure the health and safety of any and all participants in the FAMU Depository of Human Specimens and teaching lab, SOAHS continues to maintain and appropriately updated their SOP as new requirements, new techniques, new safety procedures, and/or new classes are added. These procedures, precautions, and potential new courses will be updated into the existing SOP as needed and the SOP will be reviewed by the SOAHS faculty once a year.

#### **5. Succession Plan**

The Anatomical Board requires that each facility receiving human specimens should submit the names and contact information of three staff members (one should be the Chair/Director or Head of Department/Division) who will be responsible for the appropriate handling, storage and security of the human specimens. This should ensure that, if one staff member leaves that facility, other personnel are already familiar with the location of all specimens, procedures in place for their use and can immediately assume responsibility for the said specimens. Thus to be in compliance the following individuals should be listed.

##### **5.1. School of Allied Health – Division of Physical Therapy**

**5.1.a.** Dr. Brown-Cross – SOAHS - Director of the Division of Physical Therapy

**5.1.b.** Dr. Sherif Gendy – SOAHS - Assistant Professor of the Division of Physical Therapy

##### **5.2. School of Allied Health – Division of Occupational Therapy**

**5.2.a.** Dr. Debora Olivera – SOAHS - Director of the Division of Occupational Therapy

**5.2.b.** Dr. Adrian T. McCollum – CST- Assistant Professor Department of Biological Sciences and Adjunct Professor for the Division of Occupational Therapy

### **5.3. Succession Plan Form**





Florida Agricultural & Mechanical University  
 School of Allied Health Sciences  
 334 W Palmer Ave Lewis Beck Suite 306  
 Tallahassee FL 32307  
 Telephone: 1-850-569-3818

**ANATOMICAL BOARD OF THE  
 STATE OF FLORIDA**

**Miami Office:**  
 University of Miami  
 Miller School of Medicine  
 Office of Medical Education  
 P.O. Box 016980 (R-160)  
 Miami, FL 33101  
 Telephone: 305-243-8891

**Orlando Office:**  
 University of Central Florida  
 College of Medicine  
 Health Sciences Campus-Lake  
 Nona  
 6850 Lake Nona Blvd.  
 Orlando, FL 32827-7408  
 Telephone: 407-285-1142

**Tallahassee Office:**  
 Florida State University  
 College of Medicine  
 1115 West Call Street  
 Box 30843000  
 Tallahassee FL 32306-4300  
 Telephone: 850-845-9449

**Gainesville Office:**  
 University of Florida  
 College of Medicine  
 Health Science Center  
 PO Box 100285  
 Gainesville, FL 32610-0235  
 Telephone: 352-392-3585

**Succession Plan**

**Individuals Responsible for the Security and Appropriate Handling of Anatomical Specimens Provided by the  
 Anatomical Board of the State of Florida**

\_\_\_\_\_ Institution

**Primary Individuals Responsible for Specimens:**

_____	_____	_____
Name (please type)	Signature	Date
_____		
Address		
_____		
(____)	_____	
Telephone Number	Email Address	

**Additional Individual Responsible for Specimens:**

_____	_____	_____
Name (please type)	Signature	Date
_____		
Address		
_____		
(____)	_____	
Telephone Number	Email Address	

**Head of Department:**

_____	_____	_____
Name (please type)	Signature	Date
_____		
Address		
_____		
(____)	_____	
Email	Signature	

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## 6. Exemptions to Policies and Procedures

Any and all potential exemptions to the current policies and procedures must be first approved by FAMU Environmental Health and Safety, the Anatomical Board, and the School of Allied Health. Such exemptions once approved must then be incorporated into a revised SOP prior to the initiation or use of the exemption.

## 7. How Non-Compliance of Standard Operating Procedure is Handled

**7.1. Standard Operating Procedures must be followed;** no significant departures, outside of approved exceptions, from the Standard Operating Procedures are allowed.

**7.2. Reporting Non-Compliance:** The SOP is expected to be followed and maintained however when there is non-compliance this must be reported to the appropriate authority.

**7.2.a Student non-compliance:** student non-compliance either observed by faculty or other students must first be reported to or addressed by the faculty in charge.

**7.2.b Faculty non-compliance:** faculty non-compliance observed by other faculty, students, visitors, or staff must first be brought to the attention of the faculty member in charge and then reported to the appropriate administrative head in SOAHS. The non-compliance should be dealt as soon as it is possible.

**7.2.c. Non-faculty/Staff non-compliance:** non-faculty/staff non-compliance observed by faculty or other students must first be brought to the attention of the faculty member in charge and then reported to the appropriate administrative head in SOAHS. The non-compliance should be dealt with by the most suitable maintenance administration officer and taken care of as soon as it is possible to address the issue.

**7.2.d. Visitor non-compliance:** visitor non-compliance either observed by faculty, students, or non-faculty staff must first be reported to or addressed by the faculty interacting with said visitor(s) and then reported to the appropriate director and/or Supervisor of the Program within 24 hours of the occurrence.

**7.2.e. Facility non-compliance:** Facility non-compliance with the Standard Operating Procedure must be reported in writing to the director and/or Supervisor of the Program within 24 hours of the occurrence.

**7.3. Anatomical Board reporting of non-compliance:** the Anatomical Board will report any detected violations during inspection, during drop off or pick up of human specimen(s)

to the appropriate administration and the proper authorities if deemed necessary by a majority of the Board Membership.