

ORTH 800A Orthopaedic Biomechanics/Biomaterials Research

Dr. J. Szivek (Cat Lawrence, 626-8839, clawrenc@email.arizona.edu)

6 wks minimum; offered August – May

Directly supervised/Non-patient care

Maximum enrollment of 1

Prerequisites: Completion of third-year clerkships. NOTE: Completion of ORTH 810A (Clinical Orthopaedic Surgery) is a requirement for UA students applying to the University of Arizona Orthopaedic Residency Program.

Goals: Allow students who wish to specialize in orthopaedic surgery or related disciplines to have hands-on exposure to the development of procedures and implants used in orthopaedics. Familiarize students with the research process and the transition of new developments from basic science research to clinical medicine.

Format: Students and faculty will jointly agree on a project the student can complete in the Orthopaedic Research lab at UMC during the course of the study. Students will be required to hand in a final report on the project results. Opportunities to attend weekly biomedical engineering seminars, basic science seminars, and clinical seminars will be made available. Outside reading may be a necessary component of the student's project.

Evaluation Method: The final report will be graded based on accomplishment of the goal(s) outlined at the beginning of the project.

ORTH 810A - Clinical Orthopaedic Surgery

Dr. JT Ruth (Cat Lawrence, 626-8839, clawrenc@email.arizona.edu)

4 wks *only*; offered year round (**EXCEPT DECEMBER**)

Directly supervised/Non-patient/Patient care

Maximum enrollment: 2

Prerequisites: completion of third year clerkships **Note:** Completion of ORTHO 810A(Clinical Orthopaedic Surgery) is a requirement for UA students applying to the University of Arizona Orthopaedic Residency Program.

Special comments: UA students NOT applying for the Residency Program, please contact course coordinator before scheduling.

Goals: Students will have exposure to adult and pediatric musculoskeletal problems in the outpatient and operating room setting. The focus will be on the orthopaedic history and physical examination for common orthopaedic surgical procedures in a number of subspecialty areas. The student will have an opportunity to do basic orthopaedic splinting, casting, and non-operative management of fracture problems, and will participate as a member of the orthopaedic service team with the residents, fellows, and faculty members. The student will take call with the residents during the elective.

Format: Clinical sub-internship

Evaluation Methods: Students will be evaluated by observation of Faculty Attendings of all performance areas covered by elective and will take a written exam upon completion of the elective.

ORTH 815A Orthopaedic Surgery Sports Medicine

Drs. W. Grana & R. Hunter (Cat Lawrence, 626-8839, clawrenc@email.arizona.edu)

4 wks; offered September-May

Directly supervised/Patient care

Maximum enrollment of 1

Prerequisites: Completion of third-year clerkships. NOTE: Completion of ORTH 810A (Clinical Orthopaedic Surgery) is a requirement for UA students applying to the University of Arizona Orthopaedic Residency Program.

Goals: Clinical exposure to acute and chronic sports-related injuries. Familiarity with out-patient and surgical management, including appreciation for various surgical techniques, relevant terminology, injury prevention strategies, rehabilitation regimens, and the function of the athletic trainer and physical therapist in the recovery process.

Format: Students will spend time at UMC, University Physicians Hospital at Kino, and local out-patient clinics. Time spent with each faculty member will be schedule-dependent and will therefore vary throughout the year. The student will be taught and expected to perform the clinical musculoskeletal examination, with particular emphasis on the diagnosis and treatment of the knee and shoulder. Students will also take trauma call at night with the residents, have full access to the rehabilitation and physical therapy department, and participate in emergency and elective operative procedures as either an observer or assistant. There will be opportunities to attend teaching seminars, basic science seminars, clinical conferences, bio skills labs, and a monthly reading club (outside reading will be necessary).

Evaluation Methods:

1. Observation of physical diagnostic skills and questioning during course.
2. A sports medicine topic will be decided upon by the student and faculty early in the elective and a presentation/discussion will be expected at the completion of the course.

ORTH 815B Orthopaedic Surgery of the Hand and Upper Extremity

Dr. J. Sheppard (Cat Lawrence, 626-8839, clawrenc@email.arizona.edu)

2-4 wks; maximum length of 4 wks; offered January - June

Directly supervised/Patient care

Maximum enrollment of 2

Prerequisites: Completion of third-year clerkships and ORTH 810A. NOTE: Completion of ORTH 810A (Clinical Orthopaedic Surgery) is a requirement for UA students applying to the University of Arizona Orthopaedic Residency Program.

Goals: Clinical exposure to in-patient and out-patient care for traumatic, congenital, degenerative, and reconstructive disorders involving the hand and upper extremity. Examples of clinical cases in this area include the following: hand and upper extremity fractures, shoulder arthroplasty, elbow arthroscopy, free tissue transfer, rheumatoid arthritis, congenital deformities, vascular reconstruction, compression neuropathy, and soft tissue coverage.

Format: Students will spend time at UMC and local out-patient clinics. Time spent with each faculty member will be schedule-dependent and will therefore vary throughout the year. While on the service, students will be responsible to both the chief resident and attendings. Students will take histories, perform physical exams, contribute directly to inpatient and outpatient care, and participate in emergency and elective operative procedures as either an observer or assistant. Teaching conferences, basic science seminars, clinical conferences, and resident rounds will also be attended by students. Trauma call at night is an expectation of all course participants. However, call schedules may fluctuate depending on the student's interests. The shoulder, elbow, and hand musculoskeletal teaching modules (provided by the department) should be completed by the end of the first week. Other outside reading may be expected as well.

Evaluation Methods:

Observation of physical diagnostic skills and questioning during course. Additional grading criteria may apply. Please contact faculty before enrolling for current evaluation methods and requirements.

ORTH 815C General Orthopaedic Longitudinal Elective (2010)

William A. Grana MD MPH (Cat Lawrence, 626-8839, clawrenc@email.arizona.edu)

Longitudinal, year round, 2 credits

Directly supervised/ Patient care

Maximum enrollment of 10, minimum enrollment 4

Prerequisites: Students must matriculate in College of Medicine class of 2010. They must have completed the first year of medical school and be a student in good standing.

Objectives:

1. To provide the student with an opportunity to gain a basic understanding of Orthopaedic Surgery while focusing on the musculoskeletal system.
2. The student will be introduced to various methods of diagnosing and managing common orthopaedic pathology.
3. This elective is designed to increase the student's understanding of the pathophysiology and treatment (both medical and surgical) of musculoskeletal disease and trauma.

Format:

This course is a longitudinal elective that will encompass the student's MS II, MS III and MS IV years.

The first year of the course will consist of weekly lectures at the Orthopaedic Department given by Dr. Grana. General Orthopaedic subjects will be covered through weekly assignments from "Essentials of Musculoskeletal Medicine". The weekly meetings will focus on introductory topics in Orthopaedic Surgery during the students MS II year. Assigned outside reading will be a necessary component of the student's participation. In the MS III and MS IV years students will be expected to attend 15 Grand Rounds, 15 Trauma Conferences or 15 Sports Medicine Conferences. The student will also be required each year to attend a mandatory seminar determined by Orthopaedic faculty and Dr. Grana.

Evaluation Methods:

Students will be evaluated by Dr. Grana based on their participation in the class and completion of assignments. A topic in Orthopaedic medicine will be decided upon by the student and Dr. Grana early in the elective and a presentation/discussion will be expected at the completion of the course. The evaluation will be Pass/Fail with Honors possible if the student participates in all of the classes, attends 20 Grand Rounds, 20 Conferences and completes a (3-5 page) paper on their assigned topic.

ORTH 815D - Introduction to Microsurgery**Joseph E. Sheppard M.D.**

Offered year round: 3 wks

Directly supervised/ non-patient care

Min. enrollment 1; max enrollment 2

Prerequisites: Any surgical clerkship including general surgery clerkship or surgery sub-specialty

Objectives/Goals:

At the completion of the microsurgery elective, the student should be able perform the following:

1. Identify all microsurgical instruments and describe their function.
2. Operate the surgical microscope independently.
3. Accommodate to changing the focal depth.
4. Demonstrate competence in handling instruments and objects under the microscope.
5. Refine one's hand-eye coordination by completing a series of technical skill activities of progressive difficulty.
6. Use the skills developed to perform a variety of suture techniques.
7. Acquire the skill to perform complex end-to-end anastomosis with catheter tubes (simulating vessels).
8. OPTIONAL: If desired, the student can obtain their animal certification through the University's Institutional Animal Care and Use Committee (IACUC) to use the above skills on in-vivo rodent and/or swine vessel anastomoses and neuropathies

Course description:

This course is based in the Orthopaedic Surgery Microsurgery Lab and is a combined supervised and independent experience. This elective is designed for students interested in surgical specialties (including but not limited to orthopaedic surgery, plastic surgery, general surgery) to develop their technical skills using a surgical microscope. Students will learn maneuvers under the microscope gaining the ability to move in three dimensions. They will be taught how to operate a surgical microscope and perform a variety of tasks with the goal of improving hand-eye coordination, dexterity, and speed with accuracy. The elective will take place in the Orthopaedic Surgery Microsurgery Lab combining the benefits of a stress free environment with flexibility in times and hours per day. After initial introduction and instruction the student will work independently, and then complete a supervised final evaluation. When possible, the student will attend a microsurgery operation to observe how skills learned in the lab translate to surgery.

Students will also have selected reading assignments to enhance their learning experience.

Text: "A Laboratory Manual for Microvascular and Microtubal Surgery" by Brian Cooley, PhD (provided).

A student generated problem-specific reference list will be created and maintained by those individuals participating in the elective.

Evaluation Methods:

The student will perform and present a series of exercises completed during the rotation to be evaluated. In addition, the student will demonstrate skills acquired during the rotation in a final exam consisting of a technical skills performance using the operative microscope, observed and graded by an attending surgeon. The course will be graded on a pass/fail/honors system.

Honors Grading Addendum:

If the student wants to be considered for honors eligibility, in addition to the usual criteria to satisfy the requirements for an 'outstanding' assessment, the student will be expected to complete a research paper or prepare a DVD series (i.e. write and star) in a 4-part, one hour total demonstration of at least 4 microsurgical procedures, techniques or relevant contemporary issues in microsurgery as deemed appropriate. Please contact attending physician to discuss grading criteria for honors eligibility

ORTH816A - General Orthopaedic Elective I**William A. Grana MD MPH**

MS II year, 2 credits

Directly supervised/ Patient care

Maximum enrollment of 15, minimum enrollment 4

Prerequisites: They must have completed the first year of medical school and be a student in good standing. Must be approved by Dr. William Grana.

Goals:

1. To provide the student with an opportunity to gain a basic understanding of Orthopaedic Surgery while focusing on the musculoskeletal system.
2. The student will be introduced to various methods of diagnosing and managing common orthopaedic pathology.
3. This elective is designed to increase the student's understanding of the pathophysiology and treatment (both medical and surgical) of musculoskeletal disease and trauma.

Format

This course is an elective that will encompass the student's MS II year.

The MS II year of the course will consist of weekly lectures at the Orthopaedic Department given by Dr. Grana. General Orthopaedic subjects will be covered through weekly assignments from "Essentials of Musculoskeletal Medicine". The

weekly meetings will focus on introductory topics in Orthopaedic Surgery during the students MS II year. Assigned outside reading and written outlines will be a necessary component of the student's participation.

Evaluation: Students will be evaluated by Dr. Grana based on their participation in the class and completion of assignments. A topic in Orthopaedic medicine will be decided upon by the student and Dr. Grana early in the elective and a presentation/discussion will be expected at the completion of the course. The evaluation will be Pass/Fail.

ORTH816B - General Orthopaedic Elective II

William A. Grana MD MPH

MSIII and MSIV year, 2 credits

Maximum enrollment of 24, minimum enrollment 4

Prerequisites: They must have completed the MS I and MS II years of medical school and be a student in good standing. Must have taken ORTH 816A in MS II year. Must be approved by Dr. William Grana.

Goals:

1. To continue understanding of orthopaedic musculoskeletal problems based on day-to-day clinical problems as presented in a conference setting. Appropriate operative and non-operative treatment will be presented and discussed with the evidence-based rationale for specific choices.
2. To be exposed to the key literature and utilization of research resources.

Format : Students will be expected to attend 10 Orthopaedic Surgery Grand Rounds conferences/ or view 10 "Primary Care Lectures" from the series provided on the www.bones.arizona.edu website and provide a 5-6 page PowerPoint presentation of a case study from current literature that includes a case summary, appropriate images with a resolution to the problem present in the study and a discussion of why things were done the way they were, and must be supported by a minimum of two citations. They must also review 15 topics from the OKO website and providing outlines of each topic. The student will also be required to attend a mandatory visiting professor seminar determined by Dr. Grana. If the seminar is attended in the MSIII year, the student will have to attend the Orthopaedic Surgery Research Day, typically in June. If the seminar is attended during the MSIV year, the student will have to attend the Orthopaedic Surgery Ron Johnson Memorial Lecture, typically scheduled in April. Assigned reading and written outlines will be a necessary component of the student's participation. Honors are available by attending 5 additional Orthopaedic Surgery Grand Rounds conferences/ or case summaries from the Primary Care Lecture Series and 1 additional topic on OKO.

Evaluation: Students will be evaluated by Dr. Grana based on their attendance and completion of assignments. A topic in orthopaedic medicine will be decided upon by the student and Dr. Grana early in the elective and a presentation/discussion will be expected prior to the completion of the course. Four dates will be provided, two in the fall semester, two in the spring semester for the students to present their topics to Dr. Grana and their peers.