
SURGERY

Rainer W. Gruessner, M.D., Head
Diane Poskus, Departmental Contact (626 3972)

SURG 800A - Research Distinction Track

Dr. M.H. Witte (Grace Wagner 626 6360)

Offered year round; 6 credits

Directly supervised.

Prerequisites: none

Goals:

1. To enhance research awareness, skills and productivity in a continuum during medical school.
2. To encourage students to value being at the forefront of medicine by becoming scientific physicians, as well as to help fill the gap in the decreasing numbers of translational physician-scientists.
3. To design and implement a research proposal extensive and complete enough to allow the student to pursue a research topic from beginning to completion.
4. To critically review journal articles and give medical students the opportunity to network and present their research.
5. To demonstrate competence in the scientific method.

Format: In order to earn elective credit, students must complete the following requirements. When all elective course requirements have been met, the student will receive elective credit of 6 units.

1. Submit a personally written research proposal including a projected timeline for review by the Medical Student Research Committee. In general, students are expected to have acquired some background or experience in the research area prior to entering the track.
2. Complete a minimum of 120 hours in the laboratory or otherwise engaged in the conduct of the approved research project. No other academic or stipend should be given for the research period.
3. Participate in at least 8 elective-sponsored meetings or seminars by the end of Year IV. At least two of these 8 meetings must be presentations made by the student at "journal club" sessions.
4. Upon completion of the research project, students also will be required to submit a full-length paper (minimum of 10 pages in length in standard journal format with illustrations, ideally ready for submission to a scientific journal) to the MSRC for approval and submit an abstract to their student colleagues. This will be followed by giving a 30-minute presentation of their research.

Evaluation Methods: Students will be evaluated on the quality of their research methods, journal club presentations, paper, and the presentation of their research.

**Crosslisted with INDR 800A*

SURG 800B - Research (Breast Problems Management)

Drs. H. Villar, J. Lang, E. Ong & J. Warneke (626 3972)

6 wks *only*; offered year round

Directly supervised/Patient care

Maximum enrollment of 1

Prerequisites: Surgery 803 and prior consent of instructor

Goals:

1. To familiarize student with the clinical management of breast problems, specifically malignancies, including in-depth review of the diagnostic modalities and treatment options of a patient with breast carcinoma.
2. Extensive laboratory experience focusing on the newest advances in the cell biology of breast carcinoma, such as cytogenetics of breast cancer.

Format: Clinical-Tuesday and Thursday; Laboratory research-Monday, Wednesday and Friday

Evaluation Methods: College of Medicine's Faculty Assessment of Student Progress will be completed at the end of elective.

SURG 800E - Research

Dr. A. Waer (626 3972)

3, 4 or 6 wks; maximum length of 6 wks; offered year round

Directly supervised/Patient care

Prerequisites: Surgery 803 and prior consent of instructor

Goals: Opportunity to develop and conduct a research project; specific goals will be determined in cooperation with the instructor.

Format: To be determined with the instructor.

Evaluation Methods: As arranged with instructor.

**SURG 810Aa - General Surgery (AHSC, Tucson)Surgical Oncology, Vascular
Drs. J. Warneke, H. Villar, J. Mills, J. Hughes, K. Goshima & D. Ihnat (626 3972)**

4 or 6 wks; maximum length of 8 wks; offered year round

Directly supervised/Patient care

Maximum enrollment of 2

Prerequisites: Completion of clerkships

Goals: To offer an intensive experience in the management and care of surgical patients, giving one an opportunity to ascertain whether one wishes to spend a lifetime in the surgical field.

Format: In this clerkship the senior student serves as an acting intern at AHSC, Tucson. A full-time experience with active participation in patient care and working as part of the surgical team is involved. The student is expected to be on call as an intern would be.

Evaluation Methods: Written appraisal by the faculty as to basic knowledge, skills and ability to relate to individuals.

SURG 810Ad (sect 3) - General Surgery (SAVAHCS, Tucson)

Drs. R. Guerra, R. Krouse, I. Levine & E. Kendle (626 3972)

4 or 6 wks; maximum length of 8 wks; offered year round

Directly supervised/Patient care

Maximum enrollment of 1

Prerequisites: Completion of clerkships

Goals: To offer an intensive experience in the management and care of surgical patients, giving one an opportunity to ascertain whether one wishes to spend a lifetime in the surgical field.

Format: In this clerkship the senior student serves as an acting intern at VAH. A full-time experience with active participation in patient care and working as part of the surgical team is involved. The student is expected to be on call as an intern would be.

Evaluation Methods: Written appraisal by the faculty as to basic knowledge, skills and ability to relate to individuals.

SURG 815B - Cardiothoracic Surgery

Drs. J. Copeland, S. Meyerson, G. Sethi, C. Smith, B. Rhenman, P. Tsau, O. Amabile, M. Moulton & R. Bose (626 4341)

4 or 6 wks; maximum length of 12 wks; offered year round

Directly supervised/Patient care

Maximum enrollment of 2

Prerequisites: Completion of clinical clerkships

Goals: Learn the basics of:

1. Operations for acquired cardiac disease
2. Operations for congenital cardiac disease
3. Critical care
4. Cardiac/pulmonary transplantation

Format: The student will work as an extern.

Evaluation Methods: Clinical performance and written exam.

SURG 815C - Neurosurgery

Drs. M. Weinand, R. Anton, A. Camacho, & M. Marsella (julies@u.arizona.edu 626 0704)

3, 4 or 6 wks; maximum length of 6 wks; offered year round

Directly supervised/Patient care

Maximum enrollment of 2

Prerequisites: Completion of Neurology clerkships

Goals: To provide the student with an experience in the area of clinical neurosurgery.

Format: Students will participate in the evaluation and treatment of neurosurgical patients. They will assist with diagnostic procedures, pre- and post-operative management and surgery. Intensive review of the details of neurosurgical patient management will be stressed, including topics for self-study.

Evaluation Methods: The standard evaluation form of the College of Medicine, with the student-preceptor defined goals listed, will be used. The student will also be expected to evaluate the elective.

SURG 815D - Surgical & Medical Problems in Fluid & Electrolyte Balance**Dr. M. Witte (Surgery) (626 6118)**3 wks *only*; offered in Period 3W2

Directly supervised/Patient care

Maximum enrollment of 4*, minimum of 2

Prerequisites: Successful completion of third year of medical school including completion of clinical clerkships, except by special arrangement with coordinator

Goals: To develop an approach, collect and organize clinical data, and analyze the pathophysiology, prognosis and treatment of fluid and electrolyte disorders in selected patients.**Format:** Students will act in a consultant role to selected patients on the Surgery or Medicine service. The student will select his/her own patients or the preceptor will assign patients (approximately two/week) representing a variety of acute and chronic fluid and electrolyte disorders. Students will be responsible for preparing fluid and electrolyte balance sheets and for following the course of their patients. In the context of relevant literature and the special setting of their patients' illnesses, they will analyze the basic fluid and electrolyte disturbances as well as alternative approaches to treatment.**Evaluation Methods:** Preceptor's day-to-day close evaluation of student's accomplishment including analysis of metabolic balance: student self-evaluation and course evaluation by student.

*A larger number will be accommodated only by special consent of Dr. Witte

SURG 815Ea/d - Urology (AHSC/SAVAHCS, Tucson)**Drs. N. Nguyen, M. Schiff, M. Sokoloff, C. Twiss, J. Walker & M. Gretzer (626 6895)**

4 or 6 wks; maximum length of 6 wks; offered year round

Directly supervised/Patient care

Maximum enrollment of 1

Prerequisites: Completion of clerkships

Goals: Develop skill in patient evaluation, diagnosis and management of urologic diseases.**Format:** Clerkship-full-time acting internship: evaluate patients in hospital and clinic setting, participate in writing orders, gain operating room experience. Clerk will act as a part of the surgical team at UMC. Participates in on-going studies in urinary infections, prostatic disease and urinary calculi.**Evaluation Methods:** Observations of clinical ability, facile skills. Elective evaluation form will be used.**SURG 815G - Cardiovascular Physiology & Research****Dr. J. Copeland (626 7951)**6 or 12 wks *only*; maximum length of 12 wks; offered year round

Directly supervised/Non-patient care.

Maximum enrollment of 2

Prerequisites: Surgery 815B

Goals: This course is flexible with a goal of providing an in-depth experience in the broad area of cardiovascular surgery. The student will be expected to arrange his/her own schedule based upon his/her interests. He/she will have the following to choose from:

1. Literature reviews of one or more topics.
2. Clinical research in the form of #1, plus chart review with publication of the resulting paper.
3. Cardiovascular laboratory research-our lab concentrates on: heart transplantation, myocardial preservation techniques, hypertrophy and new operations for congenital heart disease.
4. In-depth clinical experience in either adult or pediatric cardiovascular surgery.

Format: As above.**Evaluation Methods:** Will be based on the student's intensity, input and productivity.**SURG 815H - Lymphvascular System in Health & Disease****Dr. M. Witte (626-6118)**

6 wks; maximum length of 12 wks; offered year round

Directly supervised/Patient care or non-patient care.

Maximum enrollment of 2

Prerequisites: Interest in lymphology

Goals: To think and apply the scientific method to a laboratory project related to a clinical problem in lymphology.**Format:** As a member of the laboratory research team, to carry out a laboratory project and final report. As a member of the clinical care team to plan and implement the care of patients with lymphologic disturbances referred to the inpatient and outpatient Department of Surgery.**Evaluation Methods:** Preceptor's day-to-day close evaluation of student's accomplishments, student self-evaluation and course evaluation by student. No exam.

SURG 815Ma - Trauma (Care of the Trauma Victim) (AHSC, Tucson)

Drs. P. Rhee & R. Latifi (626-3972)

4 or 6 wks; maximum length of 8 wks; offered year round

Directly supervised/Patient care

Maximum enrollment of 2

Prerequisites: Surgery 803

Goals: To expose the students to the principles of trauma care through participation on the Trauma Team at University Medical Center. There will be exposure to trauma patients in the various phases of their care including resuscitation, operative intervention, critical care, and follow-up. At the conclusion of the rotation the student will have improved understanding of the pathophysiology injury, the priorities of trauma management, and the importance of team work for optimal trauma outcome. Significant experience in surgical critical care will also be obtained.

Format: The student will be integrated into the trauma team and be asked to participate in all of their activities. Students will be assigned to individual patients which will be followed through the entire clinical course. To optimize the experience a modest amount of "night call" will be required. Students will be expected to present at daily rounds and be required to develop a "treatment plan" for their patients. Each student will present a "seminar" on one topic pertaining to trauma surgery during the rotation.

Evaluation Methods: The student will be evaluated by the faculty based on the students demonstration of knowledge of trauma pathophysiology, treatment options, and expected outcome of multiply injured patients.

SURG 815P - Surgical Critical Care

Drs. R. Latifi, R. Friese, T. O'Keeffe, J. Wynne, & P. Rhee (626 3972)

4 wks *only*; offered year round

Directly supervised/Patient care

Maximum of 3

Prerequisites: 3rd Year Surgical Clerkship

Goals: To provide the student with an introduction to the management of the patient with severe multiple system disease in the intensive care unit setting. Major emphasis will be placed on providing an understanding of the diagnosis and management of acute respiratory failure including ventilator management, fluid and electrolyte disorders, and cardiovascular disorders.

Format: This course will provide the student with an in-depth experience in the intensive care unit management of critically ill surgical patients. Students will be actively involved with the day to day management and care of surgical patients in the ICU. Daily patient care rounds and didactic teaching will be provided in a small group setting. Students will receive a direct hands-on experience in cognitive and procedural aspects of care.

Evaluation Methods: Direct observation by faculty members.

**Crosslisted with ANES 815P (home) & MEDI 815P*

SURG 815Qa - Plastic Surgery

Faculty (626 3972)

3 wks; maximum length of 6 wks; offered year round

Directly supervised/Patient care

Maximum enrollment of 1

Prerequisites: Surgery 803

Goals: Introduce the student to the practice of plastic surgery in both an academic and private practice setting. Emphasis will be on clinical problems in plastic surgery emphasizing principles of wound healing and treatment choices for trauma, cancer reconstruction and difficult wounds.

Format: The student will be assigned to the Division of Plastic Surgery (UMC) and work with the staff members. Clinical care will alternate at UMC, Tucson VAH and private hospitals in Tucson.

Evaluation Methods: Evaluation will be based on direct observation of student mastery of concepts, work ethic and clinical skills.

SURG 815Qv (sect 2) - Plastic Surgery

Dr. J.D. Stuart (795 8700)

3 wks; maximum length of 6 wks; offered year round

Directly supervised/Patient care

Maximum enrollment of 1

Prerequisites: Surgery 803

Goals: Develop understanding of wound healing principles and plastic surgical techniques applied to a variety of clinical circumstances.

Format: Clinical rotation involving various types of plastic surgery. This will be taught on a one-to-one basis in a private practice setting.

Evaluation Methods: Evaluation by observation of clinical activity. The medical school form will be completed and forwarded upon completion of the rotation.

SURG 815V - Clinics in Medical Ignorance**Dr. M. Witte & Visiting Professors (626 6118)**

3 or 4 wks; maximum length of 4 wks; offered in Periods 4P1 and 3P1

Directly supervised/Patient care

Maximum enrollment of 4*, minimum of 2 (including Surgery 896A)

Prerequisites: Completion of sophomore year; can be taken before, during or after junior clerkship sequence

Goals:

1. To expose the students to the unknown and uncertainty in clinical medicine by focusing on ignorance rather than knowledge in selected areas in a wide variety of selected areas.
2. To refine critical, analytical and decision-making skills and ability to communicate.
3. To learn how to function better in the clinical arena within existing gaps in knowledge and understanding in the clinical arena and perhaps how to fill these gaps.
4. To apply these skills to the diagnosis and management of selected problem patients with disorders currently defying understanding and/or effective treatment.

Format: Two 3-hour participatory seminars weekly led by surgical faculty with extensive faculty-student discussion.

Each seminar will be preceded by advance questions, handouts and background material related to diverse timely topics in clinical medicine, such as shock, heart failure, portal hypertension, cholestasis, sepsis and solid organ cancers. Beginning with illustrative patient case presentations, the seminar group will examine how we know what we know about the particular clinical disorder, what is unknown and how to fill in gaps in understanding so as to approach investigation of underlying pathophysiology and treatment of patients. Assignment of two problem patients/week in the chosen seminar subject areas for the student to act as consultant, gather information, and propose management and treatment.

Evaluation Methods: Faculty's close observation of the quality of student's prepared assignments, active participation and discussion; mastery of concepts and selected topics, clinical, analytical and decision-making skills; student self-evaluation and course evaluation.

*A larger number will be accommodated only by special consent of Dr. Witte

SURG 816A (sect 1) - Pediatric Surgery**Drs. C. Cosentino, A. O'Connor & J. Greenfeld (626 3972)**3 wks *only*; offered year round

Directly supervised/Patient care

Maximum enrollment of 1

Prerequisites: Surgery 803 or Pediatrics 803

Goals: To familiarize the student with common pediatric surgical problems and their management.

Format: The student accompanies and assists three pediatric surgical attendings and a fourth year surgical resident as infants and children are evaluated and cared for in the clinic, hospital, emergency departments and wards.

Evaluation Methods: Observation by the attendings and resident plus critiques of written hospital charts and a 10-15 minute oral presentation on a subject of the student's choice.

*Crosslisted with PED 816A

SURG 816K - Urologic Oncology**Dr. J. Walker**4wks *only*; offered year round

Directly supervised/Patient care

Maximum enrollment of 1

Prerequisites: SURG 803

Goals: To obtain an in-depth understanding of disease states and clinical patient care as it relates to urologic oncology, and have fun in the process.

Format: Course will be a one-on-one immersion experience in clinical education related to urologic oncology by a clinical faculty member with a proven track record of teaching excellence. The student will participate/assist Dr. Dalkin in all his clinical patient care endeavors for a four week period. A basic reading assignment will be required in the first week to obtain a reasonable fund of knowledge to maximize the clinical educational experience.

Evaluation Methods: Students will be required to do one complete history and physical each week which will be reviewed with Dr. Dalkin. Students will be assessed on their history taking and physical exam skills by being provided primary patient care experiences mentored by Dr. Dalkin. Students will be continuously queried on their urologic oncologic knowledge to ascertain improvement over the rotation. Students will be given sub-intern type responsibilities and evaluated on their thorough and compassionate approach to patient care.

SURG816Ma- Vascular/Podiatric Medicine & Surgery (S.A.L.S.A) (University of Arizona- Tucson)

David Armstrong, DPM, PhD; (Sandra Perry 520-626-1349 sperry@surgery.arizona.edu)

3 or 4 weeks only; offered year round

Directly supervised/patient-care

Maximum enrollment: 2

Prerequisites: Completion of clinical clerkships

Goals: This elective is designed to offer a comprehensive introduction to vascular and podiatric medicine and surgery of the lower extremities and foot. The student will be able to: improve fundamental surgical skills (e.g., suturing, injections, minor surgery); perform a complete diabetic foot exam; properly debride lower extremity ulcers and formulate a wound care regimen which includes a robust exposure to wound healing and tissue repair; interpret foot and ankle x-rays; assist in the preoperative assessment, intraoperative treatment, and post operative care of reconstructive patients.

Format: Students will participate in hands-on clinical training, both outpatient and inpatient. Students will examine and treat patients under the supervision of podiatric residents and attending. They will assist in surgery and participate in rounds and consults. Students are required to attend lectures and participate in workshops.

Evaluation Methods: A summative written evaluation of students will be completed by attendings and residents. An oral presentation by the student will be evaluated and feedback is given throughout rotation.

SURG 891Ai/891Au - Surgery & Sub-specialties

Dr. A. Waer (626 3972)

4 wks; maximum length of 12 wks; offered year round

Directly supervised/Patient care

Maximum enrollment of 1

Prerequisites: Completion of clinical clerkships

Goals: To provide the student with an opportunity to participate in a preceptorship program at an approved hospital in this country or abroad. Students seeking unique preceptorships in any aspect of Surgery must first consult with a member of the Department of Surgery. This faculty member, preferably, would be familiar with the student's area of interest and with the particular hospital in which the student desires the preceptorship. The student is responsible for furnishing the Student Records Office with the name and address of the preceptor at the outside institution.

Format: As determined by the preceptor.

Evaluation Methods: The form issued by the College of Medicine may be used; however, if the preceptor prefers to use the evaluation form of his/her school, this will be acceptable.

SURG 891I - Rural Health Professions Program

C. Galper, Ed. D., CHES (626 2351)

3, 4 or 6 wks; maximum length 12 wks; offered year round

Directly supervised/Patient care

Maximum enrollment of 15, minimum of 1

Prerequisites: Open only to students formally admitted in the Rural Health Professions Program

Goals: The Rural Health Professions Program (RHPP) was designed to provide medical students with quality educational experiences in selected rural settings. The goals of this course are as follows:

1. Continue development of clinical patient care skills
2. Understand the public health and medical care issues in a rural community
3. Investigate the range of factors that influence individual, family health and community-oriented care
4. Develop a working knowledge of community-based health and social support services and resources, and learn how to draw upon these resources in caring for patients

Format: Students will participate in patient care providing service in the practices of their preceptors. In addition, students will investigate social service and other health care agencies to gain a more complete knowledge of services available as well as health and social issues in their communities. Students will work with their assigned physician preceptors in their practices located in rural Arizona.

Evaluation Methods: Assist in the provision of patient care at a level congruent with training. Maintain the Memorable Patient Contact Book. Complete and return the provided RHPP evaluation form to the RHPP administration. Physician preceptors will complete an evaluation of students' performance and submit to the RHPP administration.

**Crosslisted with INDR 891I, which is home; MED1 891I, OB G 891I, PED 891I & FCM 891A1*

SURG 896A - Medical Ignorance

Dr. M. Witte (626 6118)

Offered April-May; TTh, 2-4:15 PM; 2 credits

Directly supervised/Non-patient care.

Maximum enrollment of 10, minimum of 2 (including Surgery 815V)

Prerequisites: Completion of sophomore year of medical school (or special consent)

Goals:

1. To expose the students to the unknown and uncertainty in clinical medicine by focusing on ignorance rather than knowledge in a wide variety of selected surgical and medical disorders.
2. To refine critical, analytical and decision-making skills and ability to communicate.
3. To learn how to function better in the clinical arena within existing gaps in knowledge and understanding and perhaps how to fill these gaps.

Format: Two 2-hour participatory seminars weekly led by surgical faculty with extensive faculty-student discussion. Each seminar will be preceded by advance questions, handouts and background material related to diverse timely topics in clinical medicine, such as shock, heart failure, portal hypertension, cholestasis, sepsis and solid organ cancers. Beginning with illustrative patient case presentations, the seminar group will examine how we know what we know about the particular clinical disorder, what is unknown and how to fill in gaps in understanding so as to approach investigation of underlying pathophysiology and treatment of patients.

Evaluation Methods: Faculty's close observation of the quality of student's prepared assignments, active participation and discussion; mastery of concepts and selected topics; student self-evaluation and course evaluation.

SURG 696U/896U - Cardiovascular Pathophysiology

Dr. P. McDonagh and Faculty from the Department of Surgery and Medicine.

Offered April-May; TTh, 1-3 PM; 2 credits

Directly supervised/Non-patient care.

Maximum enrollment of 20, Minimum of 6

Prerequisites: Open to Third and Fourth Year Medical Students, **Registration Deadline - December 17**

Goals: This six week seminar course is designed to help medical students form a solid foundation of knowledge of diseases of the heart and circulation.

Format: The course will consist of lectures, readings, case presentations and demonstrations. The students will utilize *Pathophysiology of Heart Disease* by Leonard Lilly, M.D. as a primary source as well as selected readings from the instructors. Each two-hour seminar period will cover a specific topic. Included in each period will be a review of the underlying pathobiology and pathophysiology, signs and symptoms, special diagnostic techniques, pharmacologic and, when appropriate, surgical management of the cardiovascular disorder under discussion.

The topics will be:

1. Review of Cardiovascular Structure and Function
2. Heart Sounds, Murmurs and Physical Diagnosis
3. Diagnostic Cardiovascular Imaging
4. Atherosclerosis
5. Hypertension
6. Ischemic Heart Disease
7. Myocardial Infarction
8. Heart Failure
9. Peripheral Arterial Disease
10. Peripheral Venous Disease
11. Cardiovascular Pharmaceuticals
12. Cardiothoracic Surgery and Transplantation

Evaluation Methods: Students will be evaluated weekly by their demonstrated preparation for each seminar and by active participation in discussions. Students will also be required to select a specific topic, review recent literature in that area and write a report on "Current Concepts in the Etiology and Management of"

**Crosslisted with MED 696U/896U, MEDI 696U/896U and PSIO 696U/896U*

SURG 599/699/899 - Independent Study

Dr. A. Waer (626 3972)

3 or 6 wks; maximum length of 18 wks; offered year round

Directly supervised/Patient care or non-patient care.

Maximum enrollment varies

Prerequisites: Medical students only

Goals: The goal of this elective is to allow the student to work with a particular faculty member in pursuit of a particular field of study in surgery.

Format: As arranged between student and instructor.

Evaluation Methods: As arranged.