From the Chair:

Thank you for your interest in our department and for giving us the opportunity to tell you a few things about it. I feel that the process that we are initiating - your exploring the opportunities for a postgraduate education in anesthesiology, and our exploring the candidates for our next class of residents - is very important for both of us. Indeed, we feel that the residency program is the defining aspect of our department and the recruitment and selection of each class are among the most important aspects of what we do each year. Although a number of residency programs in anesthesiology offer an excellent education, they nonetheless differ in various ways. Your career will be influenced for the rest of your life by the unique features of the program you now choose.

The department is gauged by its residents, who are on the front line of patient care. Their caliber and accomplishments define us throughout the hospitals. You will be first our students, then our colleagues, and eventually our successors and you will, in turn, leave your imprint on us as well. Furthermore, as most of our residents leave the department, their performance and accomplishments continue to reflect on us within the broader arena of anesthesia practice throughout the country. We are educating the future of anesthesiology and we wish to put it in the very best of hands.

My policy is to keep my office door always open to residents and faculty. Please let me know if there is any way we can facilitate your getting to know us.

- Gerard Manecke, M.D., Interim Chairman
From the Chief Residents:

Anesthesia is one of the most demanding specialties of medicine. Indeed, its practice requires an extensive knowledge base and great dexterity. When you complete your residency you should be prepared to act as a consultant regarding almost every aspect of the patient's care. Where you receive your training will have a tremendous impact on how you achieve this goal. The Department of Anesthesia at UCSD has been especially successful in training such consultants. Our graduates are highly sought after nationwide because they graduate ready to practice independently without additional on the job training or supervision. Our anesthesia education starts as intense one-on-one training with senior residents and faculty and progresses rapidly to foster autonomy in patient care. Early on, residents are entrusted with the awesome responsibility of independent patient care. We believe we are fairly unique in this regard. Graduates who return for a visit say that this is the single most important aspect of our program that prepared them to practice.

Our department is moderate in size with approximately thirty-six residents. Many of our faculty are internationally renowned and are great didactic resources. There is a collegial atmosphere amongst us in which faculty and residents are known by their first name. Residents and faculty alike get together frequently outside of work for social occasions, journal clubs, and visiting professor lectures. While the department is dedicated to training great anesthesiologists, there is also a strong emphasis on giving residents enough time off to live a well-rounded lifestyle with two guaranteed weekends off each month and always days off after call.

San Diego is a wonderful city in which to live. The weather is usually a perfect sunny and seventy making it ideal for hitting the beach, surfing, mountain biking, running or whatever outdoor activity you enjoy. There is an exciting downtown music and restaurant scene as well as quiet beach communities. Mexico is only a few miles south, and there is an endless supply of exciting day trips around the Southern California area. The University of California at San Diego provides a great place to learn the practice of anesthesia, both in terms of education and quality of life. We hope you will come for a visit and wish you luck making what will prove to be a most important decision.

- Cheri Conner, M.D., James Hackett, M.D., Bryan Harris, M.D., Christian Lee, M.D.
Background:

About thirty years ago on the beach in front of the Scripps Institution of Oceanography, the foundations of an extraordinary school of medicine were laid. With the idea firmly in mind that a medical school's beginnings were much too important to leave to a bunch of physicians, a group of far-sighted basic science biologists, bare-footed in the sand at La Jolla Shores, planned a boldly innovative curriculum and faculty intimately tied to the just developing general university campus. They predicted this school would become a world-class institution within a decade. With a single-minded commitment to scientific excellence, they recruited a medical school faculty from Boston, New Haven, and so many from Bethesda that the UCSD School of Medicine had the nickname "NIH-West" for a dozen years.

Their proposal was to so deeply root the school of medicine in the general campus that UCSD would "...become the pearl in the necklace of the University of California 's schools of medicine." In the next three decades, the general campus and the school of medicine developed in parallel, and both have prospered. This year, the general campus has 18,000 students, 3,200 academic employees, 835 full-time faculty, an annual budget of $835 million, and ranks fifth in the nation in receipt of federal funding for research and development. The faculty now includes sixty-two fellows of the American Academy of Arts and Sciences, fifty-four members of the National Academy of Sciences, six Nobel laureates, six recipients of the National Medal of Science, and numerous other distinguished members.

The School of Medicine found distinction almost at once. The novel curriculum instituted in the late 1960's, coupled with the charter class' scoring first in the nation on the Part I examination of the National Boards, catapulted the innovative and somewhat upstart school into national attention. Repeated several times in the next several years, it became clear that UCSD had the basic medical sciences hardwired, and grants, laboratories, and publications soon followed abundantly. The School of Medicine receives just over half of the extramural research funds awarded to the campus overall, and these funds constitute about a quarter of the school's annual budget. In terms of extramural research funds per faculty member, the school has ranked among the top half-dozen schools in the nation for many years.

The clinical enterprise began somewhat more slowly, but the opening of the San Diego
Veterans Administration Hospital adjacent to the School of Medicine Basic Science Building in La Jolla in 1972 augmented the clinical resources of the main teaching hospital located in downtown San Diego such that the medical school class could be expanded to its current size of 122 in the late 1970s. The growth of the clinical arm of the school has been rapid and is accelerating, and the UCSD Medical Center was recently named one of the 100 best hospitals in the nation. Last year's statistics show nearly 300,000 outpatient visits, 21,000 admissions, 16,000 anesthetics, and about 2,000 deliveries. The Medical Center includes a level-1 trauma center with helicopter support, a regional burn center, a regional poison center, extensive radiological imaging facilities (including magnetic resonance imaging), and medical, coronary, surgical, pediatric, and neonatal intensive care units.

The San Diego Veterans Administration Medical Center is an integral part of the teaching, clinical, and research activities of the School of Medicine and has been described as the most modern, best-equipped VA hospital in the country. Each resident spends about three months per year at the VA and all residents appreciate the teaching opportunities afforded by the somewhat older and often more complex VA patient population. It also provides a different and perhaps more relaxed ambiance. Last year about 4,000 anesthetics were administered.

The residency program also includes rotations at the San Diego Children's Hospital and Mary Birch Women's Center, both located near the La Jolla campus. These hospitals are busy and efficient, and offer excellent opportunities for additional exposure in pediatric and obstetrical anesthesia. About 10,000 patients were anesthetized in each hospital last year.

The Medical Center has undergone an extensive remodeling and expansion, including a major enlargement of the Outpatient Center and two additional outpatient operating rooms. Further growth is evident near the La Jolla campus where the Shiley Eye Center opened in 1992 with two outpatient operating rooms. In addition, the Perlman Ambulatory Care Center and the adjacent Thornton Hospital, with 140 beds and seven operating rooms, both opened in July 1993. These are all integral components of the UCSD Medical Center and part of its systematic extension into San Diego's North County, an area of very rapid population growth.
Educational Philosophy:

In 1968 Dr. Henrik Bendixen was recruited from Harvard to be the Chief of Anesthesia in the then embryonic school. A cosmopolitan and highly sophisticated physician, Bendixen's perspective was that full engagement in basic research and teaching within the School of Medicine was essential for the acceptance and growth of the department, but that superior clinical performance was a prerequisite. The foundation of excellence he laid for the department has served us well.

We have identified resident education as the single most important of our activities in a formal rank-ordering of our department goals. This is an unusual priority in a modern teaching hospital, since most are struggling to balance budgets, and it has profound implications.

The faculty believes that medicine is a blend of art and science, a learned profession comprising both skill and knowledge. The goal of the resident education program is to produce anesthesiologists who can practice the specialty with the authority that comes from mastery of both the knowledge base and the artfulness that the specialty requires. The role of the consultant physician in medicine today embodies the practice and the teaching of a specialty, a synthesis of the Greek word physician (healer) and the Roman word doctor (teacher). While the Romans no doubt had it in mind that the doctor would teach the patient, today's consultants teach both the patient and other physicians. For anesthesiologists, the latter often proves more challenging!

A curriculum is the organized teaching efforts of a faculty, both in a formal curriculum and also extemporaneously by example or even inadvertency. We have an extensive didactic program, however, no schedule of didactics can comprehensively cover the increasingly broad field of knowledge in our discipline and every resident is expected to read comprehensively as well. This requires self-motivation and discipline. Most resident education is impromptu and based on the problems presented by a particular patient and proposed operation.

Collegiality in our department is nurtured because of its salutary effect on education. Perhaps the best illustration is the weekly Mortality and Morbidity Conference (M&M), where by design we rigorously avoid personal criticism, focusing instead on what general
lessons can be learned from the presented case. The interviewing day for resident applicants is scheduled on Wednesday so that they can attend “M&M” since the content and style of the conference reveal much about the department.

The faculty, considering the residents to be mature graduate students, affords them considerable latitude in their education. The chief residents are chosen solely by the residents and work with the residency Program Director, the Resident Education Committee, and the faculty to help steer and implement the educational efforts of the department. In the tradition of graduate education, much education also comes from the resident-resident interaction. We are delighted with the caliber and accomplishments of our residents and the camaraderie that they quickly develop. One of Bendixen's many memorable quips is apropos: "If you select your residents with sufficient care, they can teach the faculty anything it needs to know."

Resident Curriculum:

The sharp decreases in the number of applicants to anesthesia residency programs in the middle 1990's prompted a substantial revision of our curriculum with the goal of separating the residents' curriculum from the department's workload as much as possible and, in doing so, increasing the amount of elective time. While we still follow the requirements specified by the accrediting bodies, we have departed from the traditional three year format and now organize the didactic and clinical teaching efforts along the lines of a beginning and then an advanced core curriculum, followed by electives. Each resident's progress and readiness to move to the next phase is evaluated at frequent intervals. In addition to the usual clinical evaluations, we conduct an oral examination every year for each resident. We believe that evaluation systems reveal as much about the success of the curriculum as they do about the achievements of the residents. We intend further evolution and improvements, and the following broad descriptions should be taken in that context.

**THE CORE CURRICULUM Year 1 and early Year 2**

The core curriculum consists of the basic skills and knowledge which every anesthesiologist must possess, and which are prerequisite to his or her further development in the electives curriculum.

**INTRODUCTORY**

Much of this period is spent in the main operating rooms at the UCSD Medical Center, the Thornton Hospital, and the Veterans Administration Medical Center. This period consists of a graded introduction to the general field of anesthesiology, and may be thought of as a tutorial in how to separate the "white noise" in the operating suites from the elegance of thoughtfully and
skillfully administered anesthesia. Beginning residents are paired with a team of two seasoned clinicians, a faculty member and a senior resident, during the first month. There are daily lectures on the basics of anesthetic practice. Beginning in August, junior residents are assigned cases in usual fashion and start taking call, although the call team still includes senior residents for several months. Rotations during the first part of the core curriculum include:

1. Neuroanesthesia

The resident on neuroanesthesia provides anesthetic care for patients undergoing surgery for a variety of disorders of the central and peripheral nervous system, including deep-seated aneurysms, arteriovenous malformations, epilepsy amenable to surgical correction, and the surgical management of tic douloureux. The anesthetic management of these patients includes sophisticated electrophysiologic monitoring, such as processed EEG, motor-evoked responses, BAERs, SSEPs, and segmental SSEPs.

2. Airway Management

The Airway Rotation uses the American Society of Anesthesiologists Difficult Airway Algorithm as the conceptual framework for teaching the management of the difficult airway. The concepts and logic in the algorithm are discussed didactically and the techniques required to carry out the concepts and logic are practiced in patients in the operating room as patient material allows (see Benumof, Airway Management: Principles and Practice, Chapter 41 “Teaching Management of the Airway: The UCSD Airway Rotation”, pages 903-910, 1996, published by Mosby). Operating room assignments are deliberately made to enhance the opportunity of practicing airway techniques in the operating room (with special emphasis on the cannot ventilate cannot intubate rescue options). Airway maneuvers in the operating room are always performed in a controlled manner, with faculty present, so that adequate oxygenation and ventilation are ensured.

3. Cardiothoracic anesthesia

The cardiac patient base at UCSD Medical Center includes valve replacement, coronary revascularization, cardiac as well as single- and double-lung transplantation, and pulmonary thromboendarterectomy.

At the Veterans Administration Medical Center, the cardiac rotation consists primarily of anesthetic management of patients for valve replacement and coronary revascularization. The patients are generally elderly, and often have coexisting disease. Many patients are
enrolled in clinical research projects designed to improved anesthetic techniques or patient monitoring.

4. Pain Management

On the pain management rotation, residents treat inpatients at the UCSD Medical Center and outpatients at both the UCSD and VA Medical Centers. The UCSD service deals with postoperative, post-traumatic, and cancer pain, utilizing local anesthetic blocks, intraspinal narcotics, patient-controlled analgesia, neurolytic blocks, and a variety of investigational techniques. The outpatient clinics provide followup for former inpatients as well as a limited entry for patients with chronic pain problems.

ADVANCED

Closely supervised in the beginning, as the residents gain proficiency they too gain autonomy. As basic skills are mastered, residents care for increasingly challenging patients. In addition to assignments in the main operating rooms, the following rotations are undertaken during the last part of the core curriculum. These include:

1. Obstetrical anesthesia

The resident on the obstetrical anesthesia rotation learns to care for parturients in the obstetrical unit at the UCSD Medical Center, a tertiary referral center for patients with complex perinatal problems. In addition, most residents spend a month at the Mary Birch Women’s Center, which is affiliated with Sharp Hospital. The resident gains facility in all areas of obstetric anesthesia including regional analgesic techniques, anesthesia for cesarean section, and care of the critically ill parturient.

2. Pediatrics

Experience with pediatric anesthesia is gained in a rotation at the Children’s Hospital of San Diego. This hospital has a high volume of all types of pediatric surgery, with an age range from very premature infants to adolescents, as well as a busy cardiac surgery service for infants and children with congenital heart disease.

The pediatric experience at the UCSD Medical Center is oriented toward learning to provide pediatric anesthetic care in a general hospital setting. The large Level-3 Neonatal ICU at the Medical Center often provides premature infants who require emergency surgery.
3. Critical care

There are two rotations in the surgical intensive care unit at the UCSD Medical Center. Critical care is a joint service, with participation of residents and attending physicians from both the Departments of Anesthesiology and Surgery. Residents follow most patients in the SICU, manage multisystem dysfunction, provide resuscitation, and gain a longer-term perspective on the perioperative experience than the operating room provides.

**ELECTIVES CURRICULUM Late Year 2 through Year 3**

We appreciate that by this final stage in the continuum of their formal education, resident physicians are among the most sophisticated consumers of schooling that the world has ever seen. They are successful, knowledgeable, and discerning. Considerable latitude in educational methods and direction is appropriate to the last part of the residency and each resident, in consultation with a faculty member, can design a curriculum unique to his or her individual needs, interests, and talents. While the Resident Education Committee must agree (thus keeping everybody grounded in the real world), it is clear to us that the advanced level at which the resident and faculty member come to this collegial juncture merits substantial freedom for innovation.

Suggested areas for such development might include (among many others):

1. **Regional Anesthesia Training at UCSD**

The Regional Anesthesia training program at UCSD is committed to excellence in education and clinical research. The Regional Anesthesia Rotation introduces residents to various anesthetic techniques tailored to upper or lower limb surgery. Residents will become familiar with local anesthetic pharmacology, neuroanatomy, physiology of nerve transmission, and the indications / contraindications of regional anesthesia. Initially, resident training focuses on the various approaches to brachial plexus blockade, intravenous regional anesthesia, and peripheral nerve block techniques of the lower limb. Trainees learn nerve localization using electrical stimulation and ultrasound. Finally, residents are introduced to nerve block catheter techniques that provide continuous analgesia for inpatients and outpatients.
2. Cardiothoracic anesthesia
3. Transesophageal echocardiography
4. Neuroanesthesia
5. Obstetrical anesthesia
6. Critical care medicine
7. Pediatric anesthesia, including intensive care
8. Airway management
9. Ambulatory anesthesia
10. Anesthesia in unusual locations
11. Research

At present, we are able to offer about four months of electives taken away from UCSD.

Didactics:

THE DIDACTIC SCHEDULE

1. Daily 6:45 a.m. morning pre-op conference
2. Daily small group seminars in the subspecialty areas
3. Wed. 6:30-7:30 a.m. M&M at UCSD Medical Center
4. Wed. 3:00-4:00 p.m. Resident Seminar Series
5. Thurs. 4:00-5:00 p.m. Pain Medicine Group Conference
6. "Breakfast Club" board preparations are organized each week during the spring, in anticipation of inservice and board examination.
7. Periodic Oral Board practice examinations.

Each year, four to five eminent anesthesiologists spend three days with the department as visiting professors, in conjunction with our journal club. Additionally, guests and faculty occasionally visit the department for variable periods throughout the year.

Resident Research:

The faculty believe that every resident can benefit from a formal educational experience in research and support this concept by allocating time and, if necessary, funds. Although there is no requirement for every resident to engage in such an endeavor, resident applicants should understand that the faculty feel strongly about the merits of the experience. The structured format is supervised by Dr. Yaksh, and includes expert and detailed advice and guidance on how to select, implement, and conclude (and publish) a
project. In addition, a Research Advisory Group provides resources to free a resident from
daytime clinical assignments, as well as to provide for technical assistance, equipment and
supplies, and space. Travel to scientific meetings is provided for those presenting, and to
one meeting during the residency for each resident.

We are unabashedly proud of our residents in this connection: they have taken 4 first
places and 2 second places in the last six years at the Western Anesthesia Residents
Research Conference, including firsts the last three consecutive years.

With these issues in mind, residents are strongly encouraged to consider a research
opportunity and to consult with individual faculty and the Research Advisory Group in a
timely fashion, and to avail themselves of the chance to expand upon their and our
knowledge.

Resident Benefits

Salary:

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<th>Monthly</th>
<th>Yearly</th>
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<tr>
<td>Resident Physician I</td>
<td>$3,187.33</td>
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<tr>
<td>Resident Physician II</td>
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<tr>
<td>Chief (Supplement)</td>
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Benefits

1. We monitor work week hours per ACGME protocol and compliance includes
   maintaining hours well below 80 hours per week.
2. Night call should not be more frequent than 6 per month on average
3. Residents should not do cases the day after call.
4. Most call days should be less than 24 hours.
5. There are two full weekends free per month.
6. Vacation 4 weeks per year.
7. Lunch is provided by the department daily.
8. Meal stipends are supplied for each evening on call.
9. A book fund of $1,500 is provided to each resident over the 3 year residency.
10. Arrangements are often made for residents presenting at local and national
    conferences (WARC, etc.)
There are many benefits consequent to working for the University of California, San Diego. Not the least of them is the satisfaction of being part of the University of California itself, about which former President Gardner recently said, on the occasion of his retirement: "The University of California is our state's crowning jewel, the principle point of access for people of talent and ambition, the quiet force from which much of California's economic power and strength derives, one of the world's great intellectual treasure houses, the repository of much of our cultural heritage, a cauldron of discovery, a marketplace of ideas-in short, one of the greatest centers of learning the world has ever known."

More tangible benefits include a wonderful health care package. This involves coverage for you and your dependents inclusive of domestic partners. Health care including dental and optometric care are covered within the package. Additional UC system benefits include inexpensive access to UCSD recreational facilities (sailing lessons, jet ski rentals, and other delights), reduced tuition for numerous UCSD courses, and substantial discounts on computer hardware and software at the UCSD Bookstore.

Nondiscrimination Statement

The University of California, in compliance with Title VI of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, and the Age Discrimination Act of 1975, and the Americans with Disabilities Act of 1990, does not discriminate on the basis of race, color, national origin, religion, sex, disability, or age in any of its policies, procedures, or practices; nor does the university discriminate on the basis of sexual orientation. This nondiscrimination policy covers admission and access to, and treatment and employment in, university programs and activities, including but not limited to, academic admission, financial aid, educational services, and student employment.

Inquiries regarding the university’s equal opportunity policies may be directed to the campus compliance coordinator, 858/534-0195.
Volunteer Opportunities :

Anesthesia for Underserved Populations in the Philippines

Through PAGES (Philippine American Group of Educators and Surgeons), Drs. Ed Mariano and Gloria Cheng had the opportunity to provide anesthesia for the indigent people of Philippines. The majority of surgeries were cleft lip and palate repairs, however, other procedures included orthopedic and general surgeries. Dr. Mariano looks forward to continuing this near yearly volunteer mission with PAGES and UCSD residents.

Anesthesia for Underserved Children in Mexico

Many residents and attendings have enjoyed the opportunity to participate in Interface, a volunteer group designed to offer reconstructive surgery to children in Mexico. Surgeries include cleft lip and palate repair, correction of hand deformities, burn reconstruction, and other congenital and acquired deformities. Trips often involve weekend dates to various Mexican cities, including Mexicali, which is a short drive southeast from San Diego. These opportunities are offered several times a year.
Application Selection Process:

Our residency program begins with the first clinical anesthesia year (CA-1 year). The department does not offer a first postgraduate year (variously called PGY-1, PMD-1, Clinical Base [CB] or the "internship"), which must be secured independently by applicants. Medical student applicants often ask what kind of first postgraduate year we prefer. Since the practice of anesthesia is increasingly concerned with dealing with the patient's medical disease in the context of surgery and anesthesia, a medical internship is probably the most rewarding. However, residents who have done transitional internships or one or more years of pediatrics, reproductive medicine, family practice, or surgery have also been well prepared for our residency program.

We participate in the Electronic Residency Application Service (ERAS). The application materials we require are: a completed application form, a dean's letter and medical school transcript, three letters of reference, the USMLE Part I score, and a personal statement. The majority of applications are received by ERAS and reviewed by us between August 15 and November 1, one and one-half years prior to the anticipated July 1 starting date.

Once the application file is complete, it is reviewed by the Resident Recruitment and Selection Committee. On this basis, a number of applicants are interviewed. Much preparation goes into our Wednesday "interview day" and although we can make exceptions, we prefer not to feeling that both the applicants and the committee members are best served if we meet one another on the regularly scheduled day.

We do not have geographic preferences, or other preconceptions as to the "type" of applicant we are looking for besides evidence of excellence in goals and achievements. We oppose the concept of "audition" clerkships, and do not consider information about the performance in the medical student clerkship in anesthesia of visiting fourth-year students who subsequently become applicants to the residency program.