Thank you for your interest in Loma Linda University School of Medicine. This catalog will provide you with detailed information about our people, programs, and facilities; as well as our requirements and expectations. Commitment to our university’s mission and medical education remains our first priority.

In addition to our medical school program, we offer a broad spectrum of graduate education opportunities, including combined degrees programs and a wide range of postgraduate specialty residencies and fellowships; as well as a program of continuing medical education for physicians beyond their formal academic years.

Our faculty are committed to ensuring that those we educate will develop the skills and intellectual curiosity needed for success as lifelong learners in a changing world.

We welcome your interest.

Roger Hadley, M.D.
Dean, School of Medicine
School foundations

History
The professional curriculum in medicine was first offered at Loma Linda University in 1909. For more than a century, the School of Medicine has kept pace with the rapid growth of knowledge and technology. Over 10,000 students have graduated from the school and have gone on to all corners of the earth, fulfilling the University’s motto—“To make man whole.”

Since 1909
Since the school’s inception, the first two years of the medical school program have always been taught on the Loma Linda campus. From 1913 to the mid-1960s, however, the third and fourth years were taught in Los Angeles at what is now White Memorial Medical Center and at nearby Los Angeles County Hospital (now Los Angeles County/USC Medical Center). Construction of Loma Linda University Medical Center (inclusive of clinical, teaching, and research facilities) allowed the entire four-year curriculum to be concentrated on the Loma Linda campus, beginning with the 1966-1967 school year.

Our mission
The mission of the School of Medicine is to continue the healing and teaching ministry of Jesus Christ, “To make man whole” (Luke 9:6).

Preparing the physician
Our purpose is the formation of Christian physicians, providing whole person care to individuals, families, and communities. Fulfilling this responsibility requires—

Education
Creating an environment in which medical students, graduate students, and residents will acquire the knowledge, skills, values, and attitudes appropriate to Christian health professionals and scholars.

Research
Cultivating an atmosphere of inquiry and discovering new routes to wholeness through basic and clinical research.

Service
Providing timely access to cost-effective, safe, comprehensive, whole person care for all patients, without regard for their circumstances or status.

Developing the whole person
The Christian view of wholeness holds that the needs of patients go beyond the healing of the body, and that the development of students involves more than the training of the mind. We are dedicated to promoting physical, intellectual, social, and spiritual growth in our faculty and our students; and to transforming our daily activities into personal ministries.

Reaching the world
Providing whole person care wherever the opportunity arises, participating with the world community in the provision of local medical education, providing international physicians and scientists the opportunities for professional interaction and enrichment, sharing the good news of a loving God as demonstrated by the life and teachings of Jesus Christ—these are the goals of the students, faculty, and graduates of Loma Linda University School of Medicine.

Doctor of Medicine degree/Oral and Maxillofacial Surgery Program requirements

The Doctor of Medicine degree/Oral and Maxillofacial Surgery Program (M.D./OMS) is designed to provide an opportunity for qualified dentists to obtain the Doctor of Medicine degree in a customized, three-year period. Clinical surgical health-care delivery is emphasized. The content of the program conforms to the standards of the Commission on Accreditation and is designed to prepare the oral surgeon for certification by the American Board of Oral and Maxillofacial Surgery. Oral and maxillofacial surgery residents begin their residency program on the OMS service. They subsequently enter the second year at Loma Linda University School of Medicine with advanced standing. The residents then complete the second, third, and fourth years of medical school. The third year of the M.D./OMS curriculum consists of required clerkships in acute care, emergency medicine, a subinternship in ENT, and whole person care. An additional 30 units of electives, which include anesthesia and oral and maxillofacial surgery, complete the third year of the medical program. The graduate then enters a one-year general surgery internship, followed by two years of oral and maxillofacial surgery residency.

Graduate combined degrees programs

Loma Linda University is committed to fostering the investigative skills of its medical students. Students interested in pursuing careers in academic medicine and medical research may wish to enroll in one of the combined degrees programs.

Combined degrees (M.D./M.S. or M.D./Ph.D.)—SM/GS
The M.D./Ph.D. combined degree program is available through the School of Medicine. It includes many of the features of the Medical Scientist Program. Students in the combined degrees program complete the first two years of the standard medical curriculum. This is followed by three or more years of graduate course work and research to qualify for a Ph.D. degree, or at least one year for an M.S. degree, before commencing the last two years of the medical school curriculum—the clinical training—for the Doctor of Medicine degree. Majors are offered in anatomy, biochemistry, microbiology, and molecular genetics, physiology, and pharmacology.

For the M.D./M.S. and M.D./Ph.D. combined degrees programs, the prerequisites and Graduate Record Examination requirements are similar to those described for the Medical Scientist Program, except that biochemistry is not required.

Medical Scientist Program (M.D./Ph.D.)
Loma Linda University is committed to fostering the investigative skills of its medical students. Students interested in pursuing careers in academic medicine and medical research may wish to enroll in the Medical Scientist Program.

Tuition assistance for the M.D. portion of the combined degrees program is not given to all students who earn both degrees. Assistance for the M.D. portion will be given only in cases where an applicant has received approval from the School of Medicine M.D./Ph.D. Admissions Committee prior to beginning the M.D. course work. Assistance will be in the form of an institutional loan that will cover M.D. tuition and fees but will not include living expenses. The School of Medicine makes provision for the loan to be forgiven when a recipient meets the terms described below and in the loan agreement.
Loans for the first two years of the M.D. curriculum may be canceled when a student completes an M.S. or Ph.D. degree within the time schedule described below and according to the terms of the loan agreement. Loans for the third and fourth years of the M.D. curriculum may be canceled when a student completes the Ph.D. degree within the time schedule described below and according to the terms described below and according to the terms of the loan agreement.

The Medical Scientist Program is designed to develop a student’s independence and competence as an investigative scientist and clinician. It provides students with a broad educational base for the practice of medicine and medically related research. The program is administered by the School of Medicine in cooperation with the Faculty of Graduate Studies. (See Medical Scientist Program in the Combined Degrees Programs after the general information for the School of Medicine.)

Residency programs
Loma Linda University is affiliated with a variety of accredited residency programs in two sponsoring institutions. The first is Loma Linda University Medical Center, and the second is Loma Linda-Inland Empire Consortium for Healthcare Education. All specialties and a variety of subspecialty programs are offered. Additional nonaccredited fellowships are available.

Graduate physicians wishing to apply for entrance into these programs should contact the director of the program.

Graduate dentists who seek residencies in dental anesthesia, endodontics, oral implantology, orthodontics, pediatric dentistry, periodontics, and prosthodontics should apply directly to the School of Dentistry.

Research centers
Basic science investigation is advanced, and patient treatment is enhanced through the ground-breaking research conducted in several centers housed within the School of Medicine.

Center for Health Disparities and Molecular Medicine
The mission of the Center for Health Disparities and Molecular Medicine (CHDMM) is to eliminate health disparities through research, education, and community engagement. Faculty members at the CHDMM use modern molecular genetics and cell biology approaches, community based participatory research (CBPR), and precision medicine to investigate the causes of health disparities, how they are developed, and promising strategies to address them. Current research efforts at the center examine the influence of the augmented state of cellular oxidative stress (ASCOS) and inflammatory pathways on cell death and survival as it pertains to cancer, diabetes and neurological health disparities. The goal is to define novel molecular determinants and biomarkers associated with these health disparities, leading to the development of innovative clinical and community interventions aimed at eliminating or reducing them. The education mission of the center is to train a diverse group of graduate students, medical students, and postdoctoral scientists to develop an inclusive biomedical workforce. Further, through partnering with community-based organizations, the CHDMM aims to develop healthy and whole communities through the implementation of evidence based prevention initiatives and programs.

Center for Perinatal Biology
The primary research focus of the Center for Perinatal Biology is investigation of molecular and epigenetic mechanisms of fetal development and programming of health and disease later in life. The majority of the funding to support this research is derived from competitive grants awarded by the National Institutes of Health; additional funding is provided by the National Science Foundation and other agencies. The biomedical scientists in this internationally renowned research center also teach basic science courses in the School of Medicine; as well as graduate courses in their disciplines: physiology/pharmacology, gynecology/obstetrics, pathology/human anatomy, biochemistry/microbiology, and pediatrics.

For graduate students, postdoctoral fellows, and beginning investigators—who spend from two-to-four years in research and training in fields related to developmental biology and physiology—the center is an ideal environment. A number of visiting scholars from other universities also work in the center during sabbaticals or other interims.

Neurosurgery Center for Research, Training, and Education
The Neurosurgery Center for Research, Training, and Education has as its primary focus the improvement of patient care by conducting translational research. These goals are met by the research and development of new biologically and technologically advanced diagnostic procedures, minimally invasive surgical techniques, and innovative hemostatic instrumentation. The center functions in collaboration with many well-known institutions, such as George Mason University, UCLA, and North Carolina State University.

The center has been the recipient of a five-year National Institutes of Health (NIH) competitive grant to determine the role of iron perturbations in metabolism in the pathogenesis of Alzheimer’s disease, as well as grants for proteomic study of schizophrenia. The center’s multidisciplinary work involves collaborations of faculty within Biochemistry, Radiology, Cell and Molecular Biology, Radiobiology, Psychiatry, Geriatric Medicine, and Biostatistics. The center is also interested in the development of new hemostatic agents that involve the control of hemorrhage. To this end, it has developed new procoagulants and surgical devices in collaboration with industry. The center works in close collaboration with industrial resources for both testing and development of new surgical instrumentation. The director of the center holds numerous international and United States patents on surgical instruments and other devices.

Neuroscience Research Center
The major goal of the Center for Neuroscience Research is to conduct translational studies of major neurological disorders, in particular, the brain hemorrhage seen in neurosurgery and neurology. These instances of brain hemorrhage include subarachnoid hemorrhage, intracerebral hemorrhage, hemorrhage after ischemic stroke, neonatal brain hemorrhage, and traumatic brain injury caused by brain hemorrhage. A longitudinal combined approach is encouraged, which includes animal models, experimental treatment, neuroimaging, neurological functional evaluations, and neural and cerebral vascular biological studies, to explore the mechanisms and potential treatment options. The Center is funded by a National Institutes of Health Program Project Grant, as well as additional federal grant support to individual Center members.

Center for Genomics
The mission of the Center for Genomics is to provide state-of-the-art genomics (e.g., next-generation sequencing), epigenomic, and bioinformatic tools to: 1) better understand the molecular mechanisms of human disease and health disparities from a genome-wide and systems biology approach; 2) identify novel biomarkers of and novel therapeutic
targets for human disease while providing single-nucleotide resolution genomic and epigenomic data for precision medicine; and 3) define the health and lifestyle profile of the Loma Linda Blue Zone population at the genomic and epigenomic levels. The educational mission of the Center is to teach and train graduate students, medical students, and postdoctoral scientists on systems biology involving genomics, epigenomics, transcriptomics, and bioinformatics in the Loma Linda University School of Medicine.

General regulations

Students of the University are responsible for informing themselves of and satisfactorily meeting all regulations pertinent to registration, matriculation, and graduation. Section III gives the general setting for the programs of each school and outlines the subject and unit requirements for admission to individual professional programs. It is important to review specific program requirements in the context of the general requirements applicable to all programs.

Student life

The information on student life contained in this CATALOG is brief. The Loma Linda University Student Handbook more comprehensively addresses University and school expectations, regulations, and policies; and is available on the University Web site as <llu (http://www.llu.edu/assets/central/handbook/documents/Student-Handbook.pdf)> (http://www.llu.edu/ student-handbook> (http://www.llu.edu/assets/central/handbook/ documents/Student-Handbook.pdf). All students are expected to familiarize themselves with the contents of the Student Handbook—including the section that pertains specifically to the School of Medicine—and to abide by its policies. Additional information regarding policies specific to the School of Medicine are provided by the school at the orientation to each academic year. Students who have questions about the Student Handbook should contact the associate dean for student affairs. Students in the School of Medicine’s Integrated Biomedical Graduate Studies Program are expected to familiarize themselves with the document Student Guidelines, Policies and Procedures, Integrated Biomedical Graduate Studies and students in programs associated with the School of Medicine’s Earth and Biological Sciences are expected to familiarize themselves with the document Earth and Biological Sciences Graduate Student Handbook. These documents contain policies and procedures specific to the individual graduate programs and are given to students at orientation. These documents may also be requested from the Office of the Assistant Dean for Student Affairs in the Graduate Student Handbook.

Awards

Bernard D. Briggs Award
The Bernard D. Briggs Award is presented to an outstanding medical student entering the field of anesthesiology who exhibits the dedication, enthusiasm, and commitment of the visionary physician and distinguished mentor for whom it is named.

Robert F. Chinnock Award
The Robert F. Chinnock Award is presented annually to a student who has demonstrated outstanding performance in clinical and academic pediatrics.

Daniel D. Comstock Award
The Daniel D. Comstock Award is given annually to the senior student with the most distinguished performance in internal medicine. Selection is based on scholarship, interest in science, skill, devotion to patient care, and personal attributes of dependability and integrity—as demonstrated by the physician, Daniel D. Comstock, for whom the award is named.

The Departmental Advising Award
The Departmental Advising Award is given annually by the dean’s office to the clinical department that has provided outstanding career counseling and extraordinary support to help students achieve their career aspirations.

Distinguished Student in Radiology Award
The Distinguished Student in Radiology Award is given to the student who is devoted to the field of radiology as evidenced by their distinguished service, exceptional performance, and commitment to pursuing radiology as a career.

Donald E. Griggs Award
The Donald E. Griggs Award is presented annually to a senior student selected for meritorious scholarship and service—the highest grade in the clinical rotations of medicine—reflecting those qualities demonstrated by the physician and teacher for whom the award is named.

David B. Hinshaw, Sr., Award
The David B. Hinshaw, Sr., Award is presented annually to a senior student who has demonstrated outstanding qualities of leadership and scholarship and who is entering a categorical surgery residency program with the intention of pursuing a career in general surgery.

Guy M. Hunt Award
The Guy M. Hunt Award is presented annually by the Department of Neurology to a senior student who combines outstanding academic achievement and the spirit of gentle caring that was exemplified by Dr. Hunt.

Harold J. Hoxie Award
The Harold J. Hoxie Award is presented by the Department of Medicine to a senior medical student whose meritorious scholarship, exceptional performance in medicine with emphasis in research, and service reflect those qualities demonstrated by the physician and teacher for whom the award is named.

Benjamin Kovitz Award
The Benjamin Kovitz Award is presented to a senior medical student who has demonstrated qualities of leadership and scholarship in the field of psychiatry.

Walter P. Ordelheide Award
The Walter P. Ordelheide Award is given annually by the Department of Family Medicine to a senior student who has demonstrated outstanding scholarship and leadership, and who has fostered the promotion and advancement of family medicine.

President’s Award
The President’s Award, established in 1960, is presented annually in recognition of superior scholastic attainment and active participation in the student community, within the framework of Christian commitment. One recipient is selected from each school of the University.
**Society for Academic Emergency Medicine Award**
The Society for Academic Emergency Medicine Award is presented to the senior medical student who has demonstrated excellence in the specialty of emergency medicine.

**Varner J. Johns, Jr., Award**
The Varner J. Johns, Jr., Award is given to a graduating senior who is recognized as an outstanding student with the potential of becoming a future faculty member in the Department of Medicine.

**Alumni Association--Herber Award**
The School of Medicine Alumni Association Award is given annually to students who demonstrate outstanding leadership in furthering the mission of Loma Linda University School of Medicine.

**Wil Alexander Whole Person Care Award**
The Wil Alexander Whole Person Care Award recognizes a senior medical student who, during the clinical years, has demonstrated to his/her peers and colleagues a growing excellence in the physical, mental, emotional, spiritual, and relational care of his/her patients as part of the art of medical practice.

**Alpha Omega Alpha Honor Society**
Fourth-year students are recommended for membership in the national honor medical society, Alpha Omega Alpha. Membership is determined based on scholastic, professional, and personal performance. The School of Medicine was granted a charter for establishing the Epsilon Chapter on April 1, 1957.

**Roger W. Barnes Award**
The Roger W. Barnes Award is presented to a senior student who has demonstrated to an unusual degree the qualities of compassion, kindness, and humility—as exhibited by the physician and teacher for whom the award is named.

**Harold F. Ziprick Award**
The Harold F. Ziprick Award is presented annually by the Department of Gynecology and Obstetrics to a senior student in recognition of overall academic achievement and clinical performance in gynecology and obstetrics, as demonstrated by the physician and teacher for whom the award is named.

**Distinguished Student in Emergency Medicine Award**
The Distinguished Student in Emergency Medicine Award is given by the department to a senior student who is devoted to emergency medicine and committed to pursuing it as a career.

**Distinguished Student in Preventive Medicine Award**
The Distinguished Student in Preventive Medicine Award is given to a senior student who has demonstrated exceptional performance in preventive medicine and is committed to pursuing it as a career.

**Philip H. Reiswig Award**
The Philip H. Reiswig Award is presented to a senior student entering the field of orthopaedic surgery who exhibits the dedication, enthusiasm, and commitment of the physician-leader for whom it is named.

**Financial information**
The Office of the Dean is the final authority in all financial matters and is charged with the interpretation of all financial policies. Any exceptions to published policy regarding reduction or reimbursement of tuition must be approved by the dean. Any statement by individual faculty members, program directors, or department chairs regarding these matters is not binding on the school or the University unless approved by the dean.

Registration is not complete until tuition and fees on the required installment are paid; therefore, the student should be prepared to make these payments during scheduled registration for each academic year. There may be adjustments in tuition and fees as economic conditions warrant.

**General financial practices**
The student is expected to arrange for financial resources to cover all expenses before the beginning of each school year. Previous accounts with other schools or this University must have been settled.

**Veteran’s benefits**
A student eligible to receive veteran’s benefits under the current enactment should contact the Office of University Records within the first week following registration.

Under Title 38 of the U.S. Code, Loma Linda University is approved for the training of veterans and other eligible persons. Information regarding eligibility for any of these programs may be obtained by calling 1-888/GIBILL1.

Application for benefits must be made directly to the VA and may be done via the Web. The Office of University Records serves as the certifying official for Loma Linda University. Students should contact the certifying official prior to their first enrollment certification. For more information, open links to the VA Web site at <llu.edu/central/students/veterans.page>.

**Schedule of charges**

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tuition</strong></td>
<td>$54,412</td>
</tr>
<tr>
<td><strong>Fees</strong></td>
<td></td>
</tr>
<tr>
<td>AMCAS fee</td>
<td>$100</td>
</tr>
<tr>
<td>Acceptance deposit</td>
<td>$100</td>
</tr>
<tr>
<td>Late payment fee</td>
<td>$100</td>
</tr>
<tr>
<td>Health-care items not covered by health fee or insurance</td>
<td>$75</td>
</tr>
<tr>
<td>Library fine or loss, parking fine, property breakage or loss</td>
<td>$100</td>
</tr>
<tr>
<td>Health coverage for spouse and family</td>
<td>$75</td>
</tr>
</tbody>
</table>

**Applications and instruments (estimated)**

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Per school calendar year</td>
<td>$3,200*</td>
</tr>
<tr>
<td>First-year medical equipment</td>
<td>$1,000*</td>
</tr>
</tbody>
</table>

**Supplies and instruments (estimated)**

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Library fine or loss, parking fine, property breakage or loss</td>
<td>$100</td>
</tr>
</tbody>
</table>

**Living expenses (estimated)**

Students should contact the Office of Financial Aid for current living allowance information (<finaid@llu.edu> or 909/558-4509).

**On- and off-campus student housing**

Students may go to <llu.edu/central/housing> for housing information and a housing application form.

**Special charges 2018-2019**

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supplemental application (nonrefundable), in addition to AMCAS fee</td>
<td>$75</td>
</tr>
<tr>
<td>Acceptance deposit</td>
<td>$100</td>
</tr>
<tr>
<td>Late payment fee</td>
<td>$100</td>
</tr>
</tbody>
</table>
Late registration (beginning first day after published term begin date)

Returned check fee

Programs

- Anatomy—M.S., Ph.D (http://llucatalog.llu.edu/medicine/pathology).
- Biology — M.S. (http://llucatalog.llu.edu/medicine/biology), Ph.D. (http://llucatalog.llu.edu/medicine/biology)
- Biomedical Sciences - M.M.S. (http://llucatalog.llu.edu/medicine/biomedical-sci-mms)
- Earth Science - Ph.D. (http://llucatalog.llu.edu/medicine/earth-science)
- Environmental Sciences - B.S. (http://llucatalog.llu.edu/medicine/environmental-sciences)
- Geology - B.S. (http://llucatalog.llu.edu/medicine/geology/bs), M.S. (http://llucatalog.llu.edu/medicine/geology/ms)
- Infection, Immunity, and Inflammation — M.S., PhD. (http://llucatalog.llu.edu/medicine/infection-immunity-and-inflammation)
- Medical Scientist—M.D. and Ph.D. (http://llucatalog.llu.edu/medicine/medical-scientist)
- Medicine—M.D. (http://llucatalog.llu.edu/medicine/medicine)
- Natural Sciences - M.S. (http://llucatalog.llu.edu/medicine/natural-sciences)
- Neuroscience, Systems Biology, and Bioengineering — M.S. Ph.D. (http://llucatalog.llu.edu/medicine/neurosci-syst-biol-bioeng)
- Pathologists' Assistant — M.H.S. (http://llucatalog.llu.edu/medicine/pathology/path-assistant-mhs)