

Office of the President

TO THE MEMBERS OF THE COMMITTEE ON EDUCATIONAL POLICY:

ACTION ITEM

For Meeting of July 17, 2008

ESTABLISHMENT OF A SCHOOL OF MEDICINE, RIVERSIDE CAMPUS

EXECUTIVE SUMMARY

The UC Riverside campus proposes to establish a four-year School of Medicine at the University of California, Riverside. The School shall not admit or enroll students until the President is satisfied that the resources estimated to be necessary for start-up and to sustain operations are obtained.

The proposed action is responsive to the UC Advisory Council on Future Growth in the Health Professions, which in its January 2007 report recommended that expansion of UC's medical education programs be accomplished by increasing enrollments at existing medical schools and by planning for at least one new UC school of medicine that would graduate its first class by no later than 2020. On June 16, 2008, the Academic Council wrote to UC Provost Wyatt R. Hume: "All Compendium committees praised the merits of the proposal, noting the rigorous and comprehensive way that the proposal was developed and reviewed on the Riverside campus. They also saw the clear need for a Medical School of UC quality and caliber, remarking that California needs to significantly expand the number of seats it has in M.D. programs, and that the Inland Empire region surrounding the Riverside campus is a particularly strategic place to do so. However, Council is seriously concerned about the availability of necessary State fund for the kind of medical school that is envisioned. With that in mind, Council recommends that the School only be approved contingent upon the commitment of new funding sources (funding that would be additional to existing UC funding streams) that would meet the estimated \$100 million start-up cost and \$25 million per year operating cost for the new Medical School. It is this question of appropriate funding for the School – both the one-time setup costs as well as ongoing operating costs – that most deeply concerns the committees. If it is planned that a significant amount of funding should come from a re-direction of existing resources, the School should not be approved."

Clearly, a school of medicine of the excellence planned by UCR requires new resources to both start it and sustain its operation. This approval should be understood as approving those actions necessary to obtain and secure the start-up and operating costs but that the opening of UCR's School of Medicine will not proceed unless and until the new funds estimated to be needed are in

hand to offer the medical programs planned and approved by the Academic Senate through the agency of the Academic Council and its Compendium Committees.

RECOMMENDATION

The President recommends that the Committee on Educational Policy recommend to the Regents that, effective immediately, Section 14 (a) of The Regents' provisions as covered under the Standing Order 110.1 – Academic Units and Functions, Affiliated Institutions, and Related Activities of the University, be amended as follows:

Additions shown by underscoring

14. Professional Schools

- (a) There are established the following schools, with curricula based on two or more years of undergraduate work:

School of Medicine, at Riverside, with curricula leading to the degrees of Doctor of Medicine and Doctor of Philosophy. The School shall not admit or enroll students until the President is satisfied that the resources estimated to be necessary for start-up and to sustain operations are obtained.

BACKGROUND

The University of California, Riverside (UCR) proposes to establish a four-year School of Medicine that would be the first new allopathic medical school to open in California in more than 40 years. The mission of UCR's proposed School of Medicine will be to improve the health of the people of California and to serve Inland Southern California by training a diverse physician workforce, and developing innovative research and health care delivery programs that will both improve the health of the medically underserved throughout the region and serve as models for improving health care access in California and nationally.

The UCR School of Medicine will utilize a distributed clinical system – one which is both consistent with the mission and, at the same time, socially and economically advantageous. Rather than construct its own hospital, UCR will partner with regional hospitals, clinics, and providers for its clinical programs. A distributed model will allow the UCR medical school to train students and residents in a variety of healthcare settings and populations throughout Inland Southern California. Because data show that physicians tend to practice where they do their residencies, over time this approach will result in greater access to health care for the region's diverse and currently underserved population. Further, the distributed model allows for leveraging existing healthcare resources by partnering with regional hospitals and clinics.

For more than 30 years, UCR has provided the first two years of medical education to 24 students per year. Students enrolled in the UCR/UCLA Thomas Haider Program in Biomedical Sciences go on to the David Geffen School of Medicine at UCLA to complete their third and fourth years and to earn their Doctor of Medicine (M.D.) degrees.

In November 2006, the Regents endorsed continuing efforts to plan a four-year School of Medicine at UCR. This approval allowed the campus to move forward with specific activities that now make it possible to seek establishment of the School. These activities included development of the curriculum and a comprehensive business plan, which have been incorporated into the full proposal. As described below, the campus has sought and received approval of the curriculum and endorsement of the final proposal by the Riverside Division of the Academic Senate as well as the Academic Council. In addition, the campus has launched a fundraising initiative, to date generating approximately \$30 million in gifts and pledges.

Need for the School

California's 10 existing medical schools annually admit 1,342 first-year students and have a total enrollment of almost 5,500. In fall 2008, UC medical schools will enroll approximately 700 first-year medical students, with a total enrollment of nearly 2,700 students. The majority of UC medical students is Californian and non-Hispanic white or Asian American. Men and women are equally represented. Until the recent launch of a series of new "programs in medical education" (referred to as UC PRIME programs), UC medical schools had seen no growth in state-funded enrollment for more than 30 years. In 2002, California had 15.6 medical school slots per 100,000 population, significantly below the U.S. average of 27.

Because of increasing numbers of applicants and limited enrollment capacity at California's existing medical schools, less than five percent of all applicants to any UC medical school are ultimately able to enroll. As a result, more California students seek educational opportunities out of state than are trained in-state. Of the state's active patient care physicians, 75 percent attended medical school outside of California. Of the 25 percent who attended a California medical school, 62 percent graduated from a UC school.

The UC Advisory Council on Future Growth in the Health Professions recommended to the UC Board of Regents in November 2006 that there be an approximately one-third increase in UC medical student enrollment by 2020, with a comparable increase in medical resident enrollment. In its final report, issued in January 2007, the Council recommended that this growth be accomplished by increasing enrollments at existing schools. This growth has recently begun and will continue over the next five years through UC PRIME programs. The Council further recommended that planning occur for at least one new UC school of medicine that would graduate its first class by no later than 2020. The Council reviewed preliminary proposals for new schools from UC Merced and UC Riverside and agreed that workforce needs are – and will continue to be – substantial in both regions. Of UC Riverside, the report stated, "The Council believes that UCR's fifty-year history as a fully developed undergraduate and graduate campus,

together with its thirty-year history with the joint UCR-UCLA medical program, forms a strong foundation for development of an independent medical school.”

With serious physician shortfalls projected at the national, state, and regional levels, the need for new medical schools is well documented. A January 2006 report of the Association of American Medical Colleges called for a 30 percent expansion of enrollment in medical schools by 2015, through expansion of existing schools and development of new schools of medicine. This projected need is based on population growth, the aging of the population, and the concomitant aging of the physician workforce.

California is one of the states hardest hit. The Center for Health Workforce Studies estimates that by 2015, physician demand will outpace physician supply in the state by 4.7 to 15.9 percent. The report concluded that Riverside and San Bernardino counties share with Merced and its neighboring counties the lowest ratio of active patient care physicians, including both generalists and specialists, in the state. Due to its far greater population density, Inland Southern California will experience a greater shortfall in actual numbers of physicians. Data from the American Medical Association Physician Masterfile show that Inland Southern California currently has 49 generalist physicians (far below the 80 optimum) and 74 specialist physicians per 100,000 people.

Two recent studies utilizing different data, methods, and assumptions reached similar conclusions about physician supply and demand in Inland Southern California. The Center for Health Workforce Studies projected that by 2015 Riverside and San Bernardino counties will experience a physician shortfall of 53 percent, or 1,140 physicians. More recently, RAND produced a report which noted that, if the status quo is maintained through 2020, physician supply in the region will fall short by 32 percent. RAND attributed the shortfall primarily to the incredible regional population growth that is projected to exceed that of all but six states in the nation by 2030.

The UCR School of Medicine will help meet health care needs in the state and region by serving as a locus for expanded medical care; by educating physicians who are likely to enter residencies, and later practices, in the state or region; and by training a culturally competent and diverse physician workforce.

Proposed Educational Programs at UC Riverside

The School of Medicine at UCR will focus on the Doctor of Medicine degree, which prepares students to pursue graduate medical education (specialty-based residencies) and to then enter practice. Because UCR’s undergraduate student population is also ranked third most diverse in the nation among public research universities, the UCR student body will provide a valuable pool of students for achieving much-needed diversity in a new medical school. New and existing pipeline programs will help to attract highly qualified and diverse students.

Student training emphasizes developing physicians who are socially committed and culturally sensitive. Years 1 and 2 of the curriculum for the UCR School of Medicine are essentially the first and second years of the accredited UCR/UCLA Program curriculum that have been adapted to the proposed distributed clinical model. Clinical instruction is an integral portion of Years 1 and 2, in contrast to the more traditional focus on basic sciences. Years 3 and 4 provide the necessary clerkship experiences in medical centers and community-based settings, as well as other opportunities in health sciences.

Postgraduate medical education will include residents and fellows. Residents will be prepared to undertake independent medical practice within a chosen specialty upon the satisfactory completion of a residency. Fellows will complete educational requirements for certification by a specialty board. In addition, UCR will offer the Ph.D. for students interested in medical research.

At maturity, the UCR School of Medicine will enroll a total of 400 medical students, 160 graduate students, and 160 postgraduate students (i.e., resident physicians). The first class of medical students will matriculate in academic year 2012 with a class size of 50, ramping up to 100 students per class by 2017-18, for a total medical student body of 400 students. To support the research enterprise and to help meet state and national needs for technically trained scientists and engineers, the medical school will incrementally increase graduate student (Ph.D.) enrollment to 160 by 2021-22. Core postgraduate medical education programs (residencies and fellowships) will grow to 160 by 2017-18.

The distributed clinical education model will require careful coordination to ensure that the highest quality, fiscal control and accountability for educational activities is achieved and that rigorous evaluation and assessment throughout the distributed system are performed. The center and organizational locus for these activities will be a clinical medical education unit, with responsibilities to coordinate third- and fourth-year clerkships for medical students, as well as residency programs, with regional medical centers and clinics. This unit will also develop a well-equipped clinical skills training center that incorporates state-of-the-art simulation technology and develop and manage continuing medical education programs

Research Programs

The research mission of the UCR School of Medicine will be to promote innovative and eminent research programs recognized for excellence, to stimulate the development of new scientists, and to provide knowledge that improves the overall health and well-being of the state and region. The campus will build on a base of nearly 100 existing UCR faculty members conducting research on a variety of human diseases, systems, and health-care delivery issues. It will take full advantage of the innovative field of predictive genomics to design health care based on the disease risks of individual patients and populations of patients. Expanded basic science research will be accompanied by robust clinical and health care research that emphasizes population health, preventive medicine, and development of scientific knowledge to spur innovations in health care delivery. Consistent with UCR's longstanding land grant mission of addressing

regional needs, the medical school will also focus on diseases and health issues specific to the region and the ethnic and cultural groups residing in Inland Southern California.

As recommended by an External Advisory Board comprised of leading medical education authorities, the School of Medicine will execute a distinctive academic vision as a national laboratory for innovation. The population health challenges of Inland Southern California – and indeed the State – require a new paradigm for medical schools to better serve their regions. Starting afresh, the UCR School of Medicine will engage its surrounding community in collaborative partnerships to design new healthcare delivery models and processes that seek to measurably improve health outcomes for medically underserved populations, models that can be reproduced across the state and nation. From the beginning, the school will institute continuous monitoring and evaluation systems of its research, education, healthcare and service activities.

Research priorities also will be attentive to the National Institutes of Health roadmap for medical research. Examples of potential priorities include the following:

- **Cardiovascular diseases** – Underrepresented minority populations, a growing demographic in Inland Southern California, are disproportionately affected.
- **Insulin-resistant diabetes and metabolic syndrome** – This rapidly growing health concern also disproportionately affects African-American, Hispanic, and Native American populations.
- **Emerging infectious diseases** – These are becoming increasingly important in developing countries, including nearby Mexico.
- **Neurodegenerative diseases** – Such diseases are already beginning to have significant medical and economic impact on families, which will only increase in the future.
- **Health services research, public health, and health care access** – UCR already has strong programs studying various aspects of delivery of medical services in the community, an increasingly important issue for Inland Southern California.

Long Range Development Plan

The proposed 40-acre West Campus site for UCR's School of Medicine was identified in the 2005 Long Range Development Plan (LRDP) as "Reserve" for then-unidentified program needs. Accommodation of UCR's School of Medicine at this location will require amending the 2005 LRDP, including the associated Environmental Impact Report to support the proposed uses. UCR will undertake amendment of the 2005 LRDP in conjunction with pre-design studies for the initial West Campus School of Medicine facilities.

Academic Plan

A School of Medicine was first proposed by former Chancellor Rosemary Schraer in the late 1980s and again by Chancellor Raymond L. Orbach in the early 1990s. For a variety of reasons, including projected changes related to managed care and inadequate evidence of workforce need, the timing was not considered right and a formal proposal was never developed. In fall 2003, then-Chancellor France A. Córdoba established a Blue Ribbon Panel to explore options for

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enhancing medical education and biomedical research at UCR. In January 2005, a formal planning process was initiated, leading to a preliminary proposal in spring 2006. The final proposal was submitted to Office of the President in March 2008 under the leadership of Acting Chancellor Robert D. Grey.

Academic plans for several existing schools and colleges already call for key faculty positions that will build and enhance ongoing health sciences research at UCR. These hires, along with existing faculty in health-related areas, will create a synergistic cluster of faculty researchers in fundamental biochemistry, structural biology, biophysics, cell biology, neuroscience, developmental biology, mammalian genomics, and computational biology – aimed at both human and model biological systems. Recent hires in the College of Natural and Agricultural Sciences and Bourns College of Engineering will drive campus research in global health, basic biomedical and translational approaches, health care delivery, and health services, and technologies in medically relevant areas.

The School of Medicine will build and strengthen collaborations with other departments, centers, and institutes at UCR. Further, the School of Medicine research enterprise will build entrepreneurial opportunities and enhance economic growth. Regional economic development will be stimulated by nurturing and growing incubator companies arising from faculty research. Strategic partnerships with biotechnology, pharmaceutical, diagnostic, and medical device companies that are aligned with the research interests of the medical school faculty and the research mission will also be pursued.

Reviews and Approvals

On March 4, 2008, the Riverside Division of the Academic Senate voted unanimously to support the School of Medicine. The School was endorsed by the University of California Academic Council and the Coordinating Committee on Graduate Affairs in June 2008. Throughout the planning process, UCR has also worked closely with the California Postsecondary Education Commission (CPEC), ensuring that the final proposal addresses each of their criteria. Review of the formal proposal was recently completed, and CPEC communicated its concurrence with the proposal to Provost Hume and the UCR Chancellor's office.

Resources

The resources necessary to launch and operate a School of Medicine are substantial and complex. The operating budget and capital plan are presented below (all figures in 2006 dollars), as components of the two major phases of the school's development:

Start-up Phase – 2008-09 through 2011-12

**Initial Operating Budget
(Infrastructure investment in advance of enrollment)**

\$50 million

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This phase represents the period during which UCR will establish the initial framework to launch the School of Medicine, including recruitment of the founding dean, establishment of the basic administrative infrastructure, recruitment of founding clinical faculty, development of the research enterprise, and planning for launch postgraduate (i.e., residency) training programs in summer 2012. During the start-up phase, the UCR School of Medicine will move through a period of upfront investment in preparation for its first class of medical students and residents in 2012-13. Revenues and expenditures for the research enterprise, graduate medical education affiliations, and incremental faculty practice plan compensation will essentially be pursued and developed as break-even operations. A state investment of \$50 million will be needed, however, to fund other essential start-up costs in advance of enrollment-driven revenues.

Capital Facilities**\$48.4 million**

(Health Sciences Surge building on main campus and instructional space renovation; funded from campus reserves, PRIME Telemedicine, plus loan)

During the start-up phase, capital facilities for transitional instruction and research space needs are estimated at \$48.4 million, supported by resources from the campus, Office of the President, and PRIME Telemedicine (through the UCLA PRIME program). These facilities, located on the main campus, will accommodate the early stages of the medical school, up to an annual enrollment of 50 students per class. Upon relocation of the medical school to the West Campus, these new and renovated East Campus facilities will be deployed for general campus instruction and research needs.

Growth Phase – 2012-13 through 2019-20**Operating Budget**

- **Enrollment-driven funding from state** **\$25 million/yr. @ maturity**
- **Student fees** **\$7.5 million/yr. @ maturity**
- **Additional investment required** **\$50 million**
(To launch clinical facilities, faculty recruitment, clinical faculty transition salaries)

During this period, the UCR School of Medicine will achieve almost the entire enrollment plan. The School will be adding faculty, expanding programs, and maturing the clinical and research enterprises while continuing to develop the instructional and program infrastructure. The campus will rely on a combination of state and federal funding, industry partnerships, and fundraising to provide continuing streams of revenue. As the number of students increases, the medical school will receive additional state funding, based on an anticipated formula of \$50,266 per medical student, \$27,008 per resident, and \$8,036 per Ph.D. student. At maturity, the UCR School of Medicine is expected to generate approximately \$25 million in current dollars through state-funded enrollment growth, as well as \$7.5 million through student fees. During the growth phase, however, an additional state investment of \$50 million will be needed to bridge the period before the School achieves enrollment maturity.

Capital Budget

\$507.9 million

West Campus facilities to support enrollment growth

Capital facilities required for medical instruction and research during the second phase are projected to be \$507.9 million, based on today's dollars. UCR will work with the State, Office of the President, and industry partners to secure the necessary funding to begin construction in 2011. These facilities will be located on a 40-acre reserve on West Campus, which will require infrastructure development as well. The initial building is slated for completion by 2014 to support the incoming class of 100 students in that year. In addition, the first increment of research facilities is targeted for completion in 2015. Together these buildings will support projected enrollment and faculty growth through 2021 and beyond.

Maturity

By fiscal year 2020-21, the School of Medicine is expected to reach a self-sustaining level of breakeven operations of \$87 million in today's dollars, not including the incremental faculty practice plan compensation of approximately \$30 million. In the early stages of development, enrollment-driven state funds will comprise approximately one-third of total revenue.

CONCLUSION

The establishment of a UCR School of Medicine is contingent upon a sound strategy to generate the revenues that will be necessary to fund the start-up and growth phases. The Office of the President will work with the campus to develop a financial strategy, without which the School of Medicine can and will not be launched. An investment by the state of \$100 million, over the next 15 years, for operations, above and beyond the enrollment-drive state revenues that have been projected, will help the school to fulfill its mission and thereby provide a valuable and much-needed service to the state of California. **CPEC LETTER ATTACHED**