Beginnings: A Legacy Renewed for the 21st Century

STRATEGIC ACADEMIC VISION
UNIVERSITY OF CALIFORNIA, MERCED

2009
WE WELCOME YOUR COMMENTS

University of California, Merced
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2009
Central Valley resident and UC Merced mascot - *Lynx rufus* - or bobcat.
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Dear Colleagues and Friends of UC Merced:

The University of California, Merced welcomed its founding class of 875 students to the newly opened campus in fall 2005. In four short years, UC Merced has grown to 2,700 students and our faculty has increased from 90 to 145. This academic vision outlines our aspirations as we grow to 15,000 students and 800 faculty during the coming 15 years.

This next phase will be a truly defining period for UC Merced. The campus will create its own distinctive identity as the tenth campus of the nation’s leading public research university. This identity will be shaped by: (1) the University of California’s standards for excellence in teaching and research; (2) creation of world-class research programs by UC Merced faculty; and (3) the unique opportunities presented by our location in California’s Central Valley.

UC Merced will continue building excellence in its academic disciplinary base which forms the foundation for emerging areas of distinction. Additionally, we must think critically about our areas of strategic advantage, where focused investment can result in interdisciplinary research and educational programs of distinction, and where society’s most critical problems can serve as a magnet for faculty working towards their solutions.

The next leg of UC Merced’s journey promises to be a genuinely transformative period for our young campus as we further shape our service to the citizens of California and the world. We are grateful to all who contributed to this vision and look forward to working with our university and community constituents as we continue the journey.

Sincerely,

Sung-Mo “Steve” Kang
Chancellor

Keith Alley
Executive Vice Chancellor and Provost
A Legacy Renewed

When the California State Legislature established the University of California 140 years ago, it did so in the belief that the best way to secure the state’s long-term future was to invest heavily in its greatest asset – its people. Today, California has a vibrant, multi-faceted economy larger than all but a handful of countries. The University of California has been a significant contributor to that development and a key reason the state is recognized around the world as a center of innovation, commerce, cultural expression and entrepreneurial spirit. This legacy was renewed with the opening of the 10th University of California campus in Merced in 2005.

As the newest member of the system, UC Merced has a responsibility to extend and enhance the UC legacy of excellence. It is the first new University of California campus to be built since 1965, significantly expanding system capacity to meet the tenets of the “Master Plan” while also accommodating statewide population growth. UC Merced is the first UC campus located in the San Joaquin Valley, a fast-growing but largely underserved region of the state with vast, unrealized potential, and it is the first new American research university of the 21st century, a time of accelerating social, economic and environmental challenges throughout the region and the world. In order for UC Merced to build programs of excellence that will differentiate us from our sister campuses and also fulfill the promise that is implicit in these “firsts” we must have a navigable reference that will help guide our campus to maturity. In other words, this academic vision is not intended to be a blueprint of our future development but rather to provide a beacon that will guide UC Merced’s maturation through a series of actionable plans that will facilitate the continued growth and distinction of the campus.

Academic planning at the level of the university’s three founding schools has been and will continue to be an integral part of UC Merced’s development. However, the campus recently arrived at a juncture that required campus-wide consultation into the vision that would guide UC Merced’s development in the decades ahead. Each of our sister campuses has identifiable spires of excellence that mark its unique role in the UC system’s “power and promise of ten.” As the newest campus, UC Merced has still to define the characteristics and programs that will ultimately broadcast its excellence and distinguish it from its sister campuses. This will occur as the three founding schools build depth in the foundational programs in engineering, natural science, social science, humanities and the arts.

This plan builds on respected UC traditions in many ways: the primacy of excellence in basic research across the entire array of disciplines, as well as broad-based learning at the undergraduate, graduate and professional levels. However, that alone is not enough. To earn distinction and achieve our long-term mission in today’s rapidly changing environment, UC Merced must create a research presence and educational experience that is uniquely tailored to the needs, aspirations and backgrounds of a student population unlike any other in UC history. Indeed, freedom to innovate or transform the practices of previous generations is UC Merced’s most powerful strategic asset – and a major reason distinguished faculty and administrators from all over the world have come to build the newest UC campus.
UC Merced’s academic vision spans a period through the campus’s 20th anniversary in 2025. In conjunction with our long-range development plan (LRDP), the long-range enrollment plan (LREP) and individual school plans, the academic vision will serve as an ongoing guide to major investment and resource decisions we make throughout the planning timeframe. It will also help the university build the resources it needs to meet the goals outlined in this plan.

As the opening phase of campus physical development nears completion, it is important to ask what the next phase of campus development will be and what will be the mix of undergraduate, graduate and professional educational programs on this campus. In other words, what will UC Merced be as it matures from a campus brimming with potential to one where we will be judged by the impact of our research and our graduates? Even a cursory review of the established UCs indicates a number of viable alternatives for our future journey, but in order for UC Merced to develop a clarity of identity that is unique it must create its own vision of success and not just pick from an array of successful models. This document is intended to begin the conversation that will ultimately help us define the distinguishing characteristics of the 10th campus.

The faculty and staff who have created this vision recognize that a plan is only as good as its flexibility to accommodate new developments. Accordingly, this plan is a living document, subject to updates and revisions as circumstances warrant. While the individual elements may evolve over time, the long-term objective will not. That objective – to serve the people of the region, the state and the world through an uncommon commitment to excellence in education, research and public service – is the light that guides everything we do.
Mission

UC Merced embodies the distinctive mission of the University of California in its proud claim of being the first American research university of the 21st century. As the 10th campus of the University of California, UC Merced will achieve excellence in carrying out the university’s mission of teaching, research and service, benefiting society through discovering and transmitting new knowledge and functioning as an active repository of organized knowledge. As a key tenet in carrying out this mission, UC Merced will build on the diversity of its academic community to enhance its contributions to society.

Learning, discovery and engagement

A research university is a community bound by learning, discovery and engagement. New knowledge increasingly depends on links among the disciplines, working together on questions that transcend the traditional subject boundaries. UC Merced fosters and encourages cross-disciplinary inquiry and discovery. Interdisciplinary practice in research will nourish undergraduate learning, building a foundation to connect the ways that academic disciplines analyze, understand and engage with society’s problems. Undergraduates will experience education inside and outside the classroom, applying what they learn and create through undergraduate research, service learning and leadership development. As apprentice scholars, graduate students will build their understanding of and ability to do independent research in their chosen field, as the groundwork for entering professional life. Our graduates will be lifelong learners who will continue to hone their knowledge and workplace skills to accommodate and contribute to the rapid changes in the workplace.

A network of scholars

The 21st century has opened with the promise of new ways of connecting people to new knowledge and to one another. UC Merced is a network of scholars, not simply a single place, linking its students, faculty, staff and alumni to the educational resources of the state, nation and world. The idea of network extends to UC Merced’s collaborative relationships with neighboring institutions: educational, cultural and social. Born as a member of the most distinguished educational network, the University of California, Merced seeks strong and mutually supportive relationships with a variety of collaborators in its region: public and private colleges and universities; federal and state organizations that share UC Merced’s educational and research goals; and civic, cultural and social institutions.

A model of sustainability located in California’s San Joaquin Valley

The idea of network will also be realized through the physical and intellectual integration between UC Merced and its surrounding community. The campus is planned as a model of physical sustainability for the 21st century, inviting all members of the campus and surrounding community to think and act as good stewards of the environment that they will convey to future generations.

UC Merced celebrates its location in the San Joaquin Valley, reflecting the poetry of its landscape, history, resources and diverse cultures, while capitalizing on and expanding the region’s connections to the emerging global society. UC Merced recognizes that research that begins with the natural laboratory at home can extend what is known in the state, nation and world.
UC Merced’s educational experiences are designed to prepare people for the 21st century workplace, for advanced education, life-long learning and for a leadership role in their communities. UC Merced graduates will be exceptionally well prepared to navigate and succeed in a complex world. The principles guiding the design and implementation of our academic programs are envisioned within a continuum that ranges from preparatory and advanced curricula in general education and in the majors, through a variety of educational activities inside and outside the classroom.
Vision

The motto of the University of California is Fiat Lux: “Let there be light.” With the opening of the 10th campus of the University of California in Merced, the lens of knowledge creation has been focused on the San Joaquin Valley, an area of California that has had chronically low educational attainment, low college-going rates and a paltry investment in basic research and development that has stymied economic growth and diversification. As UC Merced grows in size and stature it will serve as a catalyst for the increased educational attainment needed to bolster economic and community development, in a region of the state that will have an ever-increasing impact on the future of California and the world.

The 10th UC campus will build on the rich tradition of the world’s leading public university system. Foremost among the elements that have defined the University of California as the world’s preeminent public university system is its unwavering commitment to basic research across the full spectrum of its disciplines. As UC Merced grows and develops, it will fashion its own identity as a cutting-edge institution with a distinct, innovative character forged from the pioneering spirit of UC Merced’s founding faculty, administration and students. It will offer a well-balanced blend of academic and professional disciplines, as well as specialized entrepreneurial programs and capabilities, grounded in the economic, health, environmental, educational and cultural issues that impact the quality of life in California and the world beyond. The San Joaquin Valley presents a microcosm of these problems and can serve as a living laboratory through which our research and educational programs can impact the nation and the world while serving the region.
With these issues rapidly becoming global priorities, UC Merced will emerge as a world-class research and knowledge center of relevance and significance at a time when society is searching for new directions and solutions to the major problems that plague the world. This in turn will attract leading faculty, visiting scholars, top graduate students, a highly capable and motivated undergraduate student body, dedicated staff, visionary administrators and external supporters, providing the strongest possible platform for sustainable development and intellectual growth.

The faculty, staff, administrators and students of UC Merced have been drawn by the challenge of building this type of world-class institution from the ground up. The collective energy, enthusiasm and determination of these spirited pioneers have enabled UC Merced to overcome major obstacles and forge ahead, embracing the opportunity to build the next great campus of the University of California.

From its beginning UC Merced was conceived as a campus that would blend excellent graduate and undergraduate education with basic research, the process of discovery and an entrepreneurial spirit to impact the “common good.” The campus community is committed to achieving excellence in each of these endeavors. A necessary phase of making our vision real is to continue to build top-tier programs in the Schools of Natural Sciences; Engineering; Social Sciences, Humanities and the Arts and then to intertwine these foundational areas with strong professional school programs. Simply put, UC Merced’s ultimate goal is to provide the programmatic breadth and excellence in education and research that will signal our entry into the Association of American Universities. From the arrival of our initial founding faculty members in 2003 the goal of this campus has been to foster innovative programs that focus on the creation of knowledge and impact the world through basic research and scholarship. Development of the disciplinary base continues unabated.
Guiding Principles

Backed by the rich, 140-year heritage of the world’s preeminent public university system, the University of California, Merced will replicate the system’s renowned standards of excellence in research and education to create a student-centered research university that will:

- Provide interdisciplinary solutions to society’s most pressing problems through our research and educational programs.
- Engage in and commit to the success of our students through excellent educational offerings that provide the basis for critical analysis and life-long learning.
- Build on the diversity of our region and the campus community to provide critical linkages to the global community that will provide the workplace for our graduates.
- Develop cutting-edge professional schools that meet the research and educational needs of the region and the state.
- Create and sustain a robust relationship with the region to promote economic development and to engage the university in the community.
- Incorporate environmental, economic and social sustainability throughout our teaching, research and public service programs, and exemplify this principle in the development and ongoing operations of the campus.
The World at Home: The San Joaquin Valley as a Microcosm of the World

Both the United Nations and UNESCO have defined an overlapping set of major issues that impact the world community and present the most serious problems the global community must address. The common issues that have been identified (health, poverty, education, environmental and cultural sustainability) are a clear reflection of the most pressing needs California must address in order to maintain its preeminence in the country and the world. These issues are perhaps most visible and acute in the San Joaquin Valley of California, with its diverse population, narrow economic base, low levels of educational attainment and abundant health issues. All of these were and are enduring factors that catalyzed the placement of the 10th UC campus with the hope that the future would be better than the past.

With its extensive emphasis on the development of advanced technology and continuous innovation, California is dependent on a highly educated citizenry and on the continuous flow of intellectual creativity, scientific research and innovative technological development and entrepreneurship that lead to the formation of prosperous, sustainable communities. The ten campuses of the University of California are perhaps the most visible icons of the state’s continuous pursuit of creativity and innovation throughout the world. The university, through its teaching and research missions, has played a prominent and productive role in supplying both the intellectual and human resources for the state’s cultural and economic development. Regions adjacent to our nine sister campuses have thriving cultural and economic identities while areas remote to a UC campus have been severely disadvantaged by low college-going rates, the lack of a thriving creative enterprise and the absence of innovative technological development. Nowhere is this more problematic than in the San Joaquin Valley — a region with no clear pathway to future prosperity. Campuses of the University of California serve as catalysts of excellence that raise expectations in other institutions throughout their communities. The clear expectation is that in the coming decades UC Merced will provide the same catalyst for regional excellence in the Valley.
UC Merced is located in the heart of California’s San Joaquin Valley, an agriculturally rich region stretching 250 miles north to south from the San Francisco Bay Delta above Stockton to the Tehachapi Mountains below Bakersfield.

UC Merced has the potential to positively impact the region’s environment, economics, educational attainment levels and access to health care.
The problems of the San Joaquin Valley provide a bounty of opportunities that both our faculty and students can impact in a positive way. Four of the most wide-spread issues UC Merced can and must somehow impact through its core academic programs are identical to those identified in the goals of major world bodies. By addressing these issues the university can intimately connect cutting-edge scholarship with the most pressing needs of society and enhance the credibility it has with the population and with their legislative representatives.

First, the San Joaquin Valley is an environment on the edge. Population growth, water, energy and air-pollution issues all provide abundant opportunity for an enduring commitment in our core academic goals that can help build a sustainable environment that is not only livable but can also serve as a model for other areas of the world.

Second, poverty is deeply engrained throughout the region. The San Joaquin Valley’s narrowly focused economic base and a lack of significant research investment are tied to a relatively shallow economic platform of agriculture in the Valley. Current per capita research investment in the counties of the region is more than an order of magnitude less than that in coastal California counties, creating a deep disparity in basic research that can be parlayed into investment in the region’s future.

Third, health-related problems are prevalent throughout the Valley. From asthma to zoonotic infectious disease, this is an area where research, education and service can immensely improve the lives of our diverse citizenry while also providing expanded opportunities for research and education.

Fourth, there are drastically low levels of educational attainment throughout the region. The presence of UC Merced has already started to have an impact on the area. More high school students are taking A-G coursework, more families are expressing an interest in having their children attend college and more Valley high school graduates are applying to college, although at levels far below coastal California. There is still a huge amount to be done. Through community outreach, through programs like Science and Math Initiative, through our research on cognitive and childhood development, through our efforts to understand the diversity of cultural issues in the region and through our Center for Educational Partnerships we can and should make a strong, concerted effort to impact P-16 education throughout the Valley in a way that will help high school graduates transition to college.

These are four critical regional problems crying for solutions – problems where our research, our teaching and our community service can have an enduring positive impact and set a model for other parts of the country and world to follow.
The vision of the California Master Plan is the state and the university will focus their resources to create world-class distinction on all of the UC campuses. Each campus has been able to distinguish itself around a limited number of high-visibility educational and research programs that are recognized throughout the world. UC Merced must begin to think critically about the areas of scholarship and research where we have strategic advantage – areas where, with some focused investment, we can begin to build research programs of distinction that will serve as a magnet for members of our faculty from across the campus to work on the critical problems noted above.

Concurrently, for UC Merced to thrive with academic distinction and to address the difficult issues facing the planet, we will need to broaden the palate of educational and research opportunities available to our students while also continuing to build depth in the core disciplines that form the underpinnings for all that we do. This includes additions to the basic disciplinary undergraduate offerings, but it also includes development of selected professional programs keyed to the problems that will impact California’s future. People in California rely on the University of California as the source of the most highly accomplished scientists, engineers, health practitioners, educators, lawyers and business people – people who become the leaders in their professions and in their communities.

**Region of Origin for UC Merced Undergraduates (Fall 2008)**

- San Joaquin Valley: 31%
- San Francisco Bay Area: 30%
- Southern California: 27%
- Central Coast/Monterey Bay: 4%
- Foreign/Out of State: 2%
- Sacramento Valley/North Coast and Sierra: 6%

**Total Campus Enrollment by Ethnicity (Fall 2008)**

- Asian/Pacific Islander: 31%
- Hispanic: 29%
- White: 24%
- African-American: 6%
- Native American: 1%
- Nonresident Alien: 4%
- Decline to State: 5%

*Source: Fall 2008 Undergraduate and Graduate Enrollment, UC Merced Institutional Planning and Analysis*
As UC Merced moves towards completion of the initial phase of its development, it has made gigantic strides when viewed from the perspective of the opening year with all of its challenges. The faculty, undergraduate programs, graduate groups, students and campus have all shown significant developments in a relatively short span. Our faculty includes over 100 ladder-rank FTE and is expected to grow to over 200 in the next five years as the student body continues to expand. With the growth of the faculty, research efforts have continued to expand. This past year showed a substantial increase in extramural awards to over $16 million.

Major programs of study at both the undergraduate and graduate levels have been expanded, with eighteen undergraduate and nine graduate major offerings. In addition, many opportunities for academic minors are also available to the undergraduates. At the graduate student level we are approaching 200 students and will continue to grow the percentage of the student body composed of graduate and professional students with a goal of reaching 20 percent in the next 10-15 years.

In the 1970s David Brower for the Friends of the Earth exhorted people to “Think Globally, Act Locally” in order to change the environment for the better. This popular bumper-sticker motto of the ’70s fits the regional impact that our campus can have, but places the work we do here in the larger global context that is the mission of the University of California’s research, educational and service activities. One need only to look at the legacy of achievement at the other nine UC campuses to note how they have taken on the cloak of global problems in a local context.
UC Merced Full-time Equivalency (FTE) Enrollment Projections
2007-08-Full Development

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UC System Full-time Equivalency Enrollment (FTE) by Campus
2007-08 Budgeted and 2020-21 Target

[Graph showing enrollment numbers for each campus by type of degree.

Research Themes and Graduate and Professional Programs

Of the 2,629 four-year colleges and universities in the United States only a small number are designated as research-intensive, doctoral institutions. The top tier of these universities makes up the membership of the Association of American Universities (AAU). These institutions are generally marked by a core mission that sets them apart from other higher-education institutions. Elements of this mission include: a substantial commitment to the conduct of cutting-edge research, a strong emphasis on graduate and professional education, a commitment to undergraduate success in professional and academic careers, a commitment to a strong international presence as well as commitment to community and country.

A hallmark of the University of California system is the richness, variety and strength of its graduate and professional programs and how they provide value added to the undergraduate students. As the newest member of the system, UC Merced will build on that heritage of excellence with a set of well-considered interdisciplinary, multidisciplinary and disciplinary programs that take advantage of its newness and location, leverage the expertise of its talented faculty and address important societal needs.

The relevance, timeliness, originality and inclusiveness of UC Merced’s graduate and professional programs will attract top-quality students and faculty, increasing the percentage of graduate and professional students at UC Merced to approximately 20 percent of the student body by 2025. The cutting-edge work of these scholarly teams will lead to important new discoveries and earn widespread public and peer recognition, bringing prestige to the university and the UC system and generating strong community and donor support.

The university’s professional schools will begin to make significant contributions to the quality of life in a region long recognized as the most underserved in the state. Many graduates will set up successful practices in the region, and will contribute to steady gains in the quality and quantity of professional services available to its people. UC Merced will be widely perceived as the catalyst for these changes, demonstrating to all the beneficial effects of a world-class research university on the region’s general welfare.
The rapidly growing university will become a highly respected and much sought-after partner in collaborative projects within higher education and with business, industrial and community organizations. Employers will hire UC Merced students for their knowledge and skills, their ability to think critically and broadly about issues, and their ability to work effectively in diverse, multicultural environments. These highly capable young men and women will excel in a wide variety of fields, providing a new and much-needed wave of talent, energy and leadership to the region, state and world.

Government agencies, politicians, news organizations, community leaders and others will look to UC Merced for insights and guidance on emerging issues, knowing the university has focused its attention and resources on the toughest challenges of the 21st century. The university’s influence will be felt as a fresh and effective voice on the national and global stage as well as a catalyst for positive change in the region and state.

As its reputation grows, the university will emerge as a leadership institution within the UC system. Its breadth and depth of contribution will mark it as the most promising new public research university in the world.

UC Merced’s scholarly work will lead to new discoveries and earn peer recognition.
UC Merced’s current faculty believe it is essential for the following core disciplines to be present and nurtured at UC Merced in 20 years.

**Basic Sciences**
- Biochemistry, Biophysics, and Structural Biology
- Cell and Developmental Biology
- Ecology and Evolutionary Biology
- Public Health
- Genetics and Genomics
- Immunology and Infectious Disease
- Biology/Integrated Biology/Integrated Biomedical Sciences
- Applied Mathematics
- Chemistry
- Computer Sciences
- Earth Sciences
- Mathematics
- Physics

**Engineering**
- Biomedical Engineering and Bioengineering
- Chemical Engineering
- Civil and Environmental Engineering
- Computer Engineering
- Electrical and Computer Engineering
- Materials Science and Engineering
- Mechanical Engineering
- Nanoscience and Nanotechnology

**Social Sciences and Humanities**
- Anthropology
- Economics
- Political Science
- Psychology
- Sociology
- American Studies
- Comparative Literature
- English Language and Literature
- Spanish and Portuguese Language and Literature
- History
- History of Art, Architecture and Archaeology
- Music
- Philosophy
- Religious Studies
Program Development: Collaboration Across Strong Core Disciplines

Cutting-edge discovery takes place in many contexts, from teams of specialists collaborating across disciplines (multidisciplinarity), to individuals working at the intersections of traditional disciplines (interdisciplinarity), to specialists working at the core of traditional disciplines (disciplinarity), to reinterpretations of the disciplines themselves. The UC Merced faculty is committed to nurturing institutions and an academic culture that foster interdisciplinary and multidisciplinary research and education. This commitment recognizes that some of the greatest challenges confronting our civilization, as well as some of the greatest intellectual opportunities of our time, require interdisciplinary or multidisciplinary approaches.

There are also core disciplinary areas that are common to academic inquiry in all major research universities. UC Merced must build strength in these core disciplinary areas and methods, which form the foundation of undergraduate education in the arts and humanities, natural sciences and social sciences. They also support research and graduate education in all fields, including engineering, and provide the technical and conceptual “tool box” that can be adapted readily to societal needs and research themes that we cannot foresee now. Strength in these basic disciplines is essential if UC Merced is to fulfill its mission as an excellent, comprehensive research university.

Program Development: Research Themes for UC Merced’s Future

To realize the university’s vision for graduate and professional education over the next 20 years, programs must be defined today that clearly reflect current and projected societal needs and include a strong rationale for UC Merced’s involvement. The research themes presented below provide context and focus for the university’s research initiatives and establish the foundation upon which its institutes, centers and professional schools can be built. These themes have the breadth and interdisciplinary character to link major segments of the campus, bringing visibility and distinction to the university, its faculty and students while providing benefits to California and the world. The further maturation of these themes in the coming decades will be of great importance to the world community.
1. Environmental Sustainability

The world’s insatiable appetite for energy, food, water, space and other essentials is profoundly altering the natural environment, depleting natural resources and creating social, economic and political problems that demand long-term, multi-faceted solutions. Among the most promising organizing principles is sustainability – the practice of providing for the needs of today without undermining the ability of future generations to provide for their own needs. The field of sustainability focuses attention not only on fundamental interactions between nature and society but also on society’s capacity to guide those interactions along more sustainable trajectories. Thus, as a research theme, sustainability is an exceptionally fertile field, providing a context and focus for dozens of disciplines in natural sciences, social sciences, humanities and arts, management and engineering. Investigation of sustainable solutions to society’s most pressing environmental challenges, including ecological systems, energy, water and other natural resources, climate change and security threats associated with global change, would serve societal needs for generations to come. UC Merced’s location – in a region where the need to achieve sustainability is paramount, and in a state that represents perhaps the world’s best hope for innovation – makes it ideally suited to pursue this theme with vigor and imagination.

Goal: Build an integrated research and educational program on ecological systems, energy, water and other natural resources, climate change and security threats associated with global change that will help build a sustainable environment.

Objective 1: Continue development of the Sierra Nevada Research Institute’s (SNRI) research portfolio and its impact on creating a sustainable environment.

SNRI focuses on the discovery and dissemination of new knowledge that contributes to sustaining the environment, ecosystems and natural resources of California, and related regions worldwide, through integrated research in natural sciences, social science, management and engineering.

Objective 2: Establish the Merced Energy Research Institute (MERI).

MERI would conduct research that leads to new and improved renewable and sustainable alternative energy technologies, educate the energy industry and the next generation of energy scholars and practitioners, and examine domestic and global energy policy.

Objective 3: Evaluate the potential to form of a School of Sustainable Design.

The School of Sustainable Design would meld architecture, urban and region planning and environmental sciences to help accommodate the growing population within the bounds of a sustainable environment and sustainable development.
California’s San Joaquin Valley is notoriously underserved in the healthcare field. Residents suffer from chronic illnesses, such as asthma and diabetes, at disproportionately high rates, yet medical services are available for their treatment at disproportionately low rates. Programs to improve the availability of quality healthcare in the region are greatly needed. A major research initiative on human health would complement those programs in important ways and would engage many different core disciplines, including two of the university’s most popular undergraduate majors (biology and psychology). Further, it would provide some of the best undergraduate research experience a university could hope to offer. Basic research in human health could also be expected to have far-reaching applications around the globe.

Goal: Develop a strong health and wellness focus that permeates campus life through our research, education and outreach at the undergraduate, graduate and professional school levels.

Objective 1: Establish the Health Sciences Research Institute (HSRI).

HSRI would support research programs that use advanced analytical methods and modeling to answer questions in both fundamental biology and biomedicine.

Objective 2: Establish a School of Medicine.

California is expected to face a shortage of 17,000 physicians by 2015. The San Joaquin Valley has less than half the state average for local access to physicians. With the highest population growth rate in the state, the Valley needs more physicians to begin to address the high prevalence of chronic and preventable disease in this region. The University of California is the public higher-education institution in the state with the authority to graduate medical doctorates. The University of California Office of the President has recommended development of medical education programs in the Valley.

The UC Merced School of Medicine (SOM) would provide 21st century medical education, leverage resources in the region, increase research opportunities in direct support of the human health research theme, and elevate the stature of the campus, helping it to become a comprehensive research university. The SOM would embrace cutting-edge, interdisciplinary medical education. A signature research program of the SOM would be population health, which together with basic and applied sciences, would bring a highly interdisciplinary research portfolio that integrates across schools.

Objective 3: Evaluate the potential to form a School of Public Health.

Public health, which deals with prevention rather than treatment of disease, is a solution to a major problem for the San Joaquin Valley in the form of epidemics of asthma and diabetes as well as major health disparities because of poverty and illiteracy. A School of Public Health (SPH) or Program in Public Health (PPH) could be established in association with or independent of a School of Medicine. There are five basic disciplines that are usually set up as departments in an SPH: environmental health sciences, epidemiology, biostatistics, health behavior and health policy and economics. A PPH could develop environmental health sciences, health behavior and health policy and economics from UC Merced’s current programs in its three existing schools.
3. Cognitive Science and Intelligent Systems Interdisciplinary Inquiry in Minds, Machines and Management

Computation happens at many levels: in cells, in brains, in machines, and in institutions. The interdisciplinary study of computation is emerging as a coherent and unifying theme for research, spanning the natural sciences, social sciences, engineering and even the humanities and arts. Computation appears at all scales, from small biological processes to large networked systems of interacting humans and software agents. Fields such as cognitive science, neuroscience, computer science and bioengineering are breaking new ground and producing new discoveries with implications for theory as well as application across many scales. The most exciting work is happening at the intersection of one or more of these fields, leading to whole new areas of inquiry, such as “information foraging,” “complexity,” “service science,” “human-robot interaction” and “cognitive engineering.” And this kind of interdisciplinary work at the intersections can readily find business applications, including the design of computer systems and the design of corporate practices, among many others. By closely coupling the interdisciplinary study of computation with studies in business and management, UC Merced is poised to become an international leader in a new area. The university’s young age provides a unique opportunity to establish support for this broad research theme.

Goal: Build internationally renowned, multidisciplinary expertise in cognitive science and intelligent systems that leverages UC Merced’s expertise in the natural and applied sciences, engineering, humanities and arts.

Objective 1: Establish the Cognitive Science and Intelligent Systems Research Institute (CSISRI).

CSISRI would conduct research on many facets of cognitive science and intelligent systems. Success in recruiting outstanding faculty members in cognitive science has produced a strong program that already enjoys international standing. UC Merced also has excellent engineering faculty, particularly within electrical engineering and computer science, with focal research specializations covered by this theme, and cross-campus collaborations already have been established. Merced’s proximity to Silicon Valley and the San Francisco Bay Area will facilitate the establishment of strong industrial relationships, producing further avenues for research support and opportunities for technology transfer.

Objective 2: Establish a School of Management.

Innovation lies at the intersection of invention and application. Business plays a critical role establishing the bounds of relevant and sustainable applications. UC Merced has a unique opportunity to develop a new kind of management school — one that does not stand alone but is intertwined with other schools and institutes on the campus. By aiming at business, management and leadership research that is tied closely to technology and science, such as CSISRI’s focus on cognitive, intelligent and computational systems, the School of Management will fill campus and community needs through entrepreneurial experiments in applying computational science and growing businesses.

The school would fill unmet market needs and student demands. It would leverage basic and applied science programs while also building on the base of social and behavioral sciences. It should be entrepreneurial, bringing researchers from the sciences and engineering together with management faculty and students, venture capital and the commercial marketplace. The management programs would attract students expecting to combine studies in the sciences or engineering with management.
4. Community, Culture and Identity

As the peoples and societies of the world are drawn ever more tightly together by exploding populations and borderless communication, the need to understand, explain and protect the diversity of cultural identities, values and expressions is becoming increasingly important to human co-existence. These issues are studied across a range of disciplines, including history, literature, anthropology, art history, music and the emerging field of world heritage. Many techniques for combining the insights drawn from traditional disciplines have been developed in fields such as Hispanic Studies and African-American Studies, and the more general fields of Ethnic Studies and American Studies. These and other interdisciplinary and cross-disciplinary approaches address social organization and social practice, cultural norms and cultural products in both the past and the present. Key research themes – representation and communication, interpretation and evaluation, meaning and memory, power and identity, space and time, and variation and transformation – bring together a wide range of disciplines in the humanities and interpretive social sciences. UC Merced’s faculty approach these questions in local and international settings across the range of disciplines in the humanities and interpretive social sciences. Together, scholars working in this area help us understand how people have lived, built communities and created art in the past and present.

Goal: Develop a comprehensive inter- and cross-disciplinary program that places humanities in dialogue with the social contexts which shape history and culture.

Objective 1: Continue development of the UC Merced Center for Research in the Humanities and Arts.

The UC Merced Center for Research in the Humanities and Arts fosters interdisciplinary conversation and research. In the years ahead we plan to provide the center with an endowment, and to sponsor research that engages the humanities and arts in a broad and critical context. The center fosters collaboration and dialogue to encourage true interdisciplinary interchange that encourages transformative and divergent thinking. The center will also sponsor collaborative research projects that engage the communities of the Central Valley as part of its program. The themes addressed by the center are:

1. Identities and Diasporas: the examination of ethnicity, race, nationality, religion, gender and sexuality in space and time
2. Culture
   i. Cultural production in its political and social context
   ii. The reception of culture
   iii. Cultural encounters and exchanges, and the dynamics of cultural change
3. Conflict and its resolution
4. Space, Place and the Environment
5. Virtual Heritage: the production, analysis and dissemination of digital information about the human experience derived from sources including written texts, born-digital archives, social statistics, visual materials, performances, ethnography and physical sites ranging in scale from objects to landscapes
6. Medical humanities
Objective 2: Evaluate the potential to establish a School of Arts.

As an integrative vehicle blending creative applied arts training with rapidly developing digital technologies, a School of Arts at UC Merced would bridge the gap between arts and sciences and demonstrate the lasting pragmatic values of a well-rounded, cross-disciplinary education. As a center for cultural research and innovation, it would stimulate artistic expression and create new art forms that help establish UC Merced as a cutting-edge institution. As a home for the study, expression and celebration of the San Joaquin Valley’s rich cultural heritage, it would forge vital connections to the Valley community and serve as an inviting, highly visible public face for the campus. As a 21st century institution with global perspective, it would showcase artistic and cultural expression from around the world, demonstrating the growing interconnectedness of the planet and promoting understanding and respect for cultural differences. Graduates of the School of Arts would be well prepared for leadership opportunities in a wide variety of fields, such as architecture and urban planning, where cultural awareness and technical knowledge go hand-in-hand. They would also emerge as the cultural leaders of tomorrow, helping to create a future based on cooperation and collaboration among the world’s cultures while remaining sensitive to local concerns and traditions.
5. Dynamics of Social and Economic Progress

As illustrated by the current economic crisis at home and recurrent social and political crises abroad, human social progress is nonlinear and cannot be taken for granted. In order to improve economic, political and social well-being for individuals and society, it is critical that we better understand the causes and dynamics of social progress. Spanning all social science disciplines, research on social progress explores the effect of institutional structures on, for instance, economic outcomes, the efficiency of markets, the connection between citizen preferences and governmental actions, and numerous forms of social inequality. Given the importance of institutions in shaping social outcomes and thus accelerating or reversing progress, the dynamics of institutional selection and change is another topic ripe for academic exploration and research. With its unique, multidisciplinary research environment and existing strength in core social science fields, UC Merced is well-positioned to foster creative, cutting-edge research on this vitally important issue of regional, national and global significance.

Goal: Build a world-class research and educational program that utilizes cutting-edge social science to better understand the dynamics of social and economic progress.

Objective 1: Establish the Institute on Democracy, Markets and Societies.

IDMS would support research on the dynamics of social progress, with much of the work focusing on the causes and contributions of various social institutions. IDMS would help integrate the work of scholars from diverse disciplines including economics, political science, anthropology and sociology.

Objective 2: Explore the potential to establish a School of Education.

The need to improve education at the secondary and university levels has become one of the most crucial issues both at the national and state levels. The problem is particularly acute in Central California, where the population has a lower level of educational achievement, higher unemployment rate and higher poverty rate than in the rest of the state. An integrated solution is needed, one that promotes interdisciplinary research on effective learning in and out of the classroom. This includes the role of technology in learning, development of programs that adequately prepare teachers for challenges such as a high percentage of multiracial and multilingual groups, vertical integration of P-16 education and other interventions. A School of Education at UC Merced could serve as an incubator, hub and advocate of such projects and would play a central role in UC Merced’s mission of raising the level of education in the San Joaquin Valley. Research conducted by UC Merced faculty in cognitive and information sciences would underpin programs in this school, providing an interdisciplinary and rigorously scientific foundation for educational theory and practice. Studies in concept learning, skill acquisition, problem solving and deliberative reasoning, as well as in cognitive abilities traditionally shaped by educational practice (such as language proficiency and acquisition), would provide insights into the healthy functioning (or dysfunction) of learning mechanisms in student populations.
Objective 3: Assess the potential to establish a School of Law.

Law schools are one of the hallmark professional schools of top research universities. The vast majority of research universities in Carnegie’s “Very High Research Activity” category have a school of law. In California and on the West Coast more generally, there would almost certainly be substantial student demand for an additional UC-caliber law school. Perhaps more important is the potential research payoff for creating a truly modern law school at UC Merced. Many of the best law schools are moving towards a greater emphasis on research and interdisciplinarity. For example, the “Empirical Legal Studies” movement percolating in many top law schools calls for scholars to take a much more rigorous approach to law-related research with the tools and skills being developed by economists, cognitive scientists, sociologists and political scientists. While established law schools may be slow in responding to this shift, a newly formed law school situated in a particularly interdisciplinary research university could quickly become a leader in the field of legal research. With law representing a key institution affecting social progress, a School of Law at UC Merced would have a great deal of synergy with IDMS and the Dynamics of Social and Economic Progress Research Theme.
Undergraduate Education Program

“The function of the university is not simply to teach breadwinning, or to furnish teachers for the public schools, or to be a centre of polite society; it is, above all, to be the organ of that fine adjustment between real life and the growing knowledge of life, an adjustment which forms the secret of civilization.”

- W. E. B. DuBois

As the first new University of California campus in 40 years, UC Merced has an opportunity to redefine the path to educational excellence within the UC system. Meeting this challenge must begin with a clear understanding of the contemporary student world.

Students today little resemble the students who attended universities when the idea of a single course of study (i.e., a curriculum) was established centuries ago. Many in education lament this change as a problem. UC Merced must see it as an opportunity with its students bringing talents, experiences and perspectives the world needs to capture and utilize.

The state of knowledge today little resembles the state of knowledge when the practices of universities were formed, in part because universities themselves have been so successful at transforming the base of human knowledge and in part because university graduates are asked to undertake much more than they once were. The half-life of technical knowledge is rapidly decreasing at the same time the amount of cultural knowledge available is rapidly increasing.

UC Merced still needs to prepare all of its students by teaching them cutting-edge knowledge and connecting them to as much of the human heritage as possible in the time available. But the university must do more than transmit current knowledge. The university must also prepare students by helping them develop intellectual structures and attitudes that open them to new learning as they go out into the world.

The tools of learning for today’s students are dramatically more advanced, varied and pervasive than for any previous generation. UC Merced is the first university in the world to be established during the era of ubiquitous technology. Its students not only embrace technology but fully expect their educational experience to be enriched and enabled by technology solutions at every turn.

UC Merced is uniquely positioned to capitalize on these trends. While other institutions struggle to adapt legacy practices and structures to today’s needs, UC Merced can design a 21st century model from the start. Freedom to innovate is UC Merced’s most powerful strategic advantage and a fundamental element of its vision for undergraduate education.

The foundation of UC Merced’s educational environment will be a learner-centered undergraduate education structured less around the idea of a course of study and more around the model of a web or a network. Students will be encouraged to link different modes of thought and different bodies of knowledge through multidisciplinary “communities of inquiry,” which will bring students together to explore topics of vital interest to the region and the world. In the process, they will learn to interact with students from outside their major
Undergraduate education will be developed around UC Merced’s core research themes.
fields, integrating ideas and skill sets and developing a deeper appreciation for the varied abilities and perspectives of others.

The undergraduate environment will blend general education, electives, majors and the co-curriculum into a coherent, multi-dimensional experience. Students will focus on building skills and knowledge through traditional classroom, laboratory and studio instruction as well as in work as scholarly apprentices and in community-based service-learning activities. Leadership opportunities, cultural programs, internships and other co-curricular activities will complement and reinforce the learning that takes place in the classroom and lab.

Students’ experiences in such an environment will prepare them for success in everyday life, where their ability to understand and address complex issues will be highly valued. Their intellectual fitness will give them the strength and courage to seek challenges and strive for greatness in their chosen fields. A deep-seated love of learning will allow them to remain vital and contribute at a high level throughout their adult lives. They will prove adaptable and resilient, secure in their ability to evaluate new information and change course as necessary while continuously growing and moving ahead.

Faculty members and administrators will cultivate an environment across campus that reinforces this multidisciplinary, integrative approach to learning. The university’s highly diverse student body, reflecting the broad mix of cultures and ethnicities within the state and society as whole, will provide the perfect backdrop to reinforce the concept of the global community. Recognizing that students arrive on campus with varying levels of preparedness, the university will provide the necessary support structure to ensure every student has a chance to succeed.

The academic organizational structure will support and optimize this innovative educational environment. Faculty will be recruited, evaluated and rewarded for their ability to work effectively in collaborative networks that make student success a top priority. They will actively seek to improve their pedagogical skills and develop or refine techniques that ensure students are learning to the best of their abilities.

At the core of each University of California campus is a fundamental commitment to research and scholarship -- and the integration of these elements into every educational program. Innovative research is the foundation on which high-quality graduate and professional educational offerings are based, but it is less often considered as the linchpin for cutting-edge undergraduate education. Research universities offer an exceptional advantage to undergraduates by providing access, both in and outside of the classroom, to the researchers and scholars who generate the new knowledge that forms the basis for society’s advances. Developing an understanding of how objective data is gathered, analyzed and explained is a critical skill set that will prepare students for life in a world of constant change. The future will be owned by those who understand the fundamental process of discovery that drives our nation’s well-being.

Teaching and research interests will be creatively interwoven to ensure students get the full benefit of enrollment at a cutting-edge research university. UC Merced will distinguish itself by developing its undergraduate education programs around the campus’s core research themes, which will nourish all aspects of a UC Merced education. This exposure to research will trigger a heightened awareness and respect for the process of discovery and the intellectual rigor of knowledge creation. For some, this will lead to further educational pursuits.
through graduate or professional schools, for which they will be well prepared by their UC Merced undergraduate experience.

Students from all over the state will be drawn to UC Merced because its promise is their dream – a transforming experience resulting in confident, well-rounded, intellectually curious and enabled citizens not only capable of dealing with the future but determined to help shape it. As UC Merced graduates enter society and take increasingly important roles within the community, the university’s approach to undergraduate education will be strongly affirmed. Other institutions will seek to emulate it. Faculty from leading universities around the world will want to become part of the UC Merced experience. Demand from top-level high-school students will increase, and UC Merced will be widely perceived as a star within the UC system.
UC Merced graduates will reflect these attributes:

- **Scientific Literacy:** To have a functional understanding of scientific, technological and quantitative information, and to know both how to interpret scientific information and effectively apply quantitative tools;

- **Decision Making:** To appreciate the various and diverse factors bearing on decisions and have the know-how to assemble, evaluate, interpret and use information effectively for critical analysis and problem solving;

- **Communication:** To convey information to and communicate and interact effectively with multiple audiences, using advanced skills in written and other modes of communication;

- **Self and Society:** To understand and value diverse perspectives in both the global and community contexts of modern society in order to work knowledgeably and effectively in an ethnically and culturally rich setting;

- **Ethics and Responsibility:** To follow ethical practices in their professions and communities, and care for future generations through sustainable living and environmental and societal responsibility;

- **Leadership and Teamwork:** To work effectively in both leadership and team roles, capably making connections and integrating their expertise with the expertise of others;

- **Aesthetic Understanding and Creativity:** To appreciate and be knowledgeable about human creative expression, including literature and the arts; and

- **Development of Personal Potential:** To be responsible for achieving the full promise of their abilities, including psychological and physical well-being.
Undergraduate Education Program Goals

To achieve this vision and build on the value-added inherent in a research university, UC Merced has established four primary areas of undergraduate emphasis that exemplify our fundamental aspirations for both our general education and major programs of study.

1. A Learner-centered Network of Instruction Linked to Major Research Themes

Preparing students for success in the 21st century requires an educational experience that reflects the multi-dimensional character of today’s world and helps students see how disparate elements come together to solve real problems that the global community faces. The traditional model of a narrowly defined course of study is not adequate for this purpose. Instead, a learner-centered approach structured much like a network or web, spanning a wide range of learning “nodes,” will be established. Students will be encouraged to forge connections across the multiple sites and sources of learning in a multidisciplinary context specifically designed to promote understanding and assimilation of diverse perspectives. A defining element of this approach will be active student engagement in research projects tied to major campus research themes.

Goal: Integrate all aspects of the undergraduate experience around the model of a network or web with campus research themes as critical nodes in the web of the undergraduate experience.

Objective 1: Establish undergraduate “communities of inquiry” built on themes that have strong multidisciplinary and global characteristics.

Objective 2: Facilitate the development and delivery of interdisciplinary programs among academic units and across schools.

2. Inclusive Excellence

UC Merced’s highly diverse student body is a distinctive attribute even within a system that draws from an unusually diverse state population. Elements of that diversity extend beyond ethnicity to include many other dimensions, such as gender, orientation, national origin, academic gifts and preparation, economic background and family educational history.

As a powerful reflection of the world at large, this multi-cultural environment will enrich the lives of UC Merced students, broaden their perspectives and prepare them for success in everyday life. But the richness of the mix requires a broad institutional commitment to help all students achieve essential learning outcomes. A focus on “inclusive excellence” could make the UC Merced undergraduate environment a model for supporting academic progress and high achievement regardless of personal background.

Goal: Build on the strength of our diversity to establish the campus as a model global community of the 21st century.

Objective 1: Internationalize the campus from within and without.

Objective 2: Ensure access and retention of a high-quality diverse student body.
3. Best Practices in Teaching and Student Engagement

A fundamental premise of a student-centered research university is to expose all students to research and scholarship through course content, pedagogical methods and direct involvement in research. Thus, a major component of a 21st century educational environment must be a commitment to the use of appropriate pedagogies by all faculty. That is, faculty must not see students as consumers of expertise but must engage students actively and deeply in their education. Collectively, faculty will help students to develop creativity that will be applied beyond the classroom and laboratory settings. Though faculty members may be widely recognized as authorities in their fields, many have had limited training in effective teaching techniques, and very few have worked in a setting with the breadth of student backgrounds seen at UC Merced. Defining and promoting best practices in teaching will be key to a successful focus on student learning outcomes.

Goal: Live the concept of a student-centered research university through disciplined emphasis on its core elements.

Objective 1: Strengthen the university’s commitment to undergraduate research and other forms of experiential learning.

Objective 2: Support faculty in their efforts to acquire and use best practices, make assessment a priority and establish a structure promoting best practices in teaching – the pedagogy of engagement.

4. Timely and Appropriate Courses of Study

UC Merced’s ability to attract large numbers of undergraduate students will be greatly influenced by the range and quality of major and minor programs it offers. Resource constraints limit the pace and volume of new program development. This makes it critical to define key criteria by which major and minor programs will be developed and offered to undergraduates.

Goal: Respond to societal needs by building courses of study that will prepare students for the known problems of today and the anticipated problems of tomorrow.

Objective 1: Create a general education framework that involves tenure-track faculty in all aspects of the undergraduate education experience.

Objective 2: Use interdisciplinary questions of “communities of inquiry” to choose other majors important to these themes (e.g., develop a public-policy emphasis in political science or a biomedical ethics program in philosophy).

Objective 3: Respond to societal needs and opportunities, as well as student demand for courses of study complementing the UC mission.
The primary intent of this plan is to place academic priorities in the forefront as we continue to build the campus. Implementation of UC Merced’s academic vision will require patience, focus, broad campus and community involvement, as well as abundant new resources. Not only must we continue to build research and instructional excellence in our base disciplines, but we must also begin the process of building the case for critical resources that will be needed as we begin to prioritize our future.

In the next two years, we will use the vision of this document to build a strategic plan that will continue to foster growth in UC Merced’s core programs in the arts, sciences and humanities while also investing selectively in programs of excellence that can begin to distinguish this campus from its sister institutions. Future strategic plans will allow the identification of special initiatives beyond those addressed by the usual academic planning process. Even at this early stage UC Merced needs to identify and start building excellence strategically in the areas of growing importance. Two institutes are already visible—the Sierra Nevada Research Institute (SNRI) for environmental research and the UC Merced Energy Research Institute (UCMERI). The UC Merced faculty from the start also designated the Health Sciences Research Institute as an important research institute. These, as well as other research institutes will serve as the foundations for building areas of research distinction at UC Merced.

As a next step to fulfill this vision, we must continue to make explicit connections to our existing academic programs and balance broadening of our educational offering with the need to build depth in our existing disciplines. As a research university we must build graduate enrollments to a level comparable to our sister campuses. This will require sufficient faculty to support both undergraduate and graduate needs.

California’s financial situation makes it clear that in the decades ahead State funding will be unable to meet the critical resource needs required to build programmatic and facilities support that will allow the newest campus to grow into the type of mature institution that will provide cutting edge research programs as well as academic and professional programs that will serve the future of California and the nation. In order to reach the goals set forth in this vision UC Merced will require building a development capacity that will far outpace that of our sister campuses.

The UC Merced academic vision must provide guiding light to our effort in bringing resources to the campus; the strategic plan will provide a blueprint. The administration will work cooperatively with the University of California System to develop a sustainable plan for funding our growth leading to a distinctive campus of UC quality. We must grow our development capability and pursue outside funding in a transparent way to support the plans in the academic vision.
Strategic Academic Planning Committee Members

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