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TO: University of California, Merced Academic Community

FROM: Thomas W. Peterson, Provost and EVC

RE: Ladder-Rank Faculty Recruitment Plan
AY15-16 through AY20-21

This memo presents a plan for faculty recruitment over the next six years. This recruitment plan is a result of almost two years of effort on the part of the faculty, who have identified and articulated signature themes that represent key strengths of research and education at UCMerced.

What is detailed herein is a multi-year plan for (a) hiring into the six thematic areas¹ (pillars) defined as a result of the Strategic Academic Focusing initiative and (b) hiring into bylaw-specific areas that represent foundational needs. The role of CAPRA in this process is stated, as are the means for handling any deviations from this plan that may result from budgetary or space delays.

The process of developing academic focusing areas has been a long time coming. Too long, in the eyes of many, including my own. However, by taking this longer view and more measured analysis of our areas of strength and potential areas for expansion, we have arrived at signature themes in which virtually all of our faculty can participate, if they so choose. That is not to say that every research project and every collaborative effort on this campus will fit neatly into one of these themes. But the themes will provide a set of guiding principles to help us advance our institution in a more strategic, coordinated and efficient way.

Moving forward, faculty recruitment will be driven substantially by the desire to bolster these key research and educational themes. The majority of faculty positions over the next six years will be recruited to participate in interdisciplinary research teams, with the expectation that the best candidates identified will be hired. For this process to work there has to be confidence that, over time, individual bylaw units will not be significantly disadvantaged, and that the process itself will proceed in a clearly defined and transparent way.

It's therefore important to provide an estimate, however approximate, of how this recruitment process will play out over the next six years.

¹ The six signature themes are summarized in the Appendix to this memo. With the exception of the theme "Chemical and Biological Materials and Matter", all faculty groups have provided written descriptions from which these summaries are derived.

On the surface it may seem that the most equitable distribution of faculty hires across the six themes would be an equal distribution. However, the relative allocation of future positions across the six signature themes should depend on many factors. Certainly, the extent to which all, or only some, of the schools can participate, the current quantifiable strengths of an area at UC Merced and the anticipated opportunity for external support and for future national and international recognition in an area should all be factors. There will be other factors as well.

To that end, the table at the end of this document describes an anticipated trajectory for advancing these thematic hires, as well as the anticipated foundation hires that will be made. While the plan for the first two years (AY15-16 and AY16-17) is reasonably firm, the projections for the “out years” (AY17-18 through AY20-21) are more approximate. Furthermore, adjustments for spousal hires in any given year may impact the distribution.

The expectation is that 70-75% of our faculty hires over this six-year period will be driven primarily by the SAF themes.

The overall structure of the process will be comprised of the following elements:

- Faculty recruitment will follow a *cluster hiring* approach in key signature themes, which have been defined previously by the faculty’s Strategic Academic Focusing initiative.
- Faculty recruitment will utilize a *single cross-disciplinary faculty search committee* for each cluster hiring initiative.
- This cross-disciplinary faculty search committee will be comprised of faculty with direct interest and activity within the specific signature theme. By virtue of her/his participation on the committee, the committee member indicates a willingness to accept a new faculty member into that member’s bylaw unit if appropriate. Oversight of each of these cluster hiring search committees will be performed by *the Deans and Vice Provost for the Faculty*. A key responsibility of this group will be to ensure that every effort has been made to attract the strongest and most diverse pool of candidates for these positions, in a manner consistent with MAPP section 2012. Advancing candidates to campus recruiting visits will be predicated on a clear indication that those conditions have been satisfied.
- Once a specific candidate, as well as his/her by-law unit, is identified, the dean of record for that school will assume responsibility for the negotiations.
- At the end of each recruitment year, a post-recruitment analysis will be conducted and compared against projected allocations of strategic hires across all the schools. Any *significant* deviations from an approximate planned trajectory will be factored into consideration in future recruitments.

Faculty Recruitment in Foundations

While the primary focus in faculty recruiting will be to grow our research and teaching strengths in signature areas, we will continue to devote a portion of our faculty recruitment efforts to meeting foundational needs in specific by-law units. The overall process for conducting those recruitments will be comprised of the following elements:

- Each year, a Faculty Search Committee for each discipline will be tasked to conduct the search for positions allocated to that discipline.
- Oversight of these Foundational hiring search committees will be performed by the *School Dean of record*. A key responsibility of the Dean will be to ensure that every effort has been made to attract the strongest and most diverse pool of candidates for these positions, consistent with MAPP section 2012. Advancing candidates to campus recruiting visits will be predicated on a clear indication that those conditions have been satisfied.
- The dean of record for that school will assume responsibility for the negotiations.
- At the end of each recruitment year, a post-recruitment analysis will be conducted and compared against projected allocations of Foundational hires across all the schools.

A six-year hiring plan is presented here to address the desire for a clear, transparent and predictable process. Since it would be impossible to efficiently hire into each of the six signature areas every year without spreading the available positions too thinly, recruitment will focus preferentially on different themes in different years. But it is critical to reiterate that the specifics of position allocation *across* thematic areas and *within* each school will be reviewed and discussed annually. These conversations will engage the faculty within the schools, the Deans, the academic senate (particularly CAPRA) and of course the office of the Provost.

The Role of CAPRA

Over the past few weeks, I have had a number of very productive exchanges, both in person and via email, with CAPRA regarding the long-term plan for faculty recruitment. Frankly, the direction and process outlined in this letter differs in some ways from what I had originally envisioned, and that difference is due to the critical and constructive review by CAPRA. To be sure, we don't agree on everything, and I think CAPRA would also acknowledge that there isn't complete agreement within the committee. But it is absolutely clear, in my mind at least, that success of this endeavor depends critically on a shared vision between the faculty and the academic leadership, and CAPRA guidance in that regard will be crucial.

As in the past, CAPRA will play an important advisory role in the resource allocation associated with this hiring plan. Specifically, CAPRA will be asked to share their opinions with the Deans and Provost on:

- The school-defined priorities for recruiting in foundational areas
- The institutional priorities for allocating positions across the six signature themes
- The post-recruitment success in achieving the hiring objectives of the previous year, and need for any adjustments to the plan in future years

Extenuating Circumstances

There are at least two factors that could force some alteration to this plan: Budget constraints could require recruitment of fewer than 25 faculty per year, and space constraints could also limit the number, or the research focus (because of specific space needs) of faculty who are recruited in a given year.

Budget Constraints

Any recruitment plan is predicated on having the financial capacity to provide the salary and required start-up packages for the new faculty members. The office of Planning and Budget has developed a long-term financial model that predicts our financial conditions through the period of the 2020 Project, and beyond. Under the assumptions of that model we *will* have the capacity to hire 25 faculty members per year. In the event that budget projections fall short, or other unanticipated campus costs rise, there is always a chance that recruitment targets would, of necessity, be reduced. If that should happen, every effort will be made to distribute that impact equitably. In particular, it will be incumbent on the Provost to ensure that those signature themes who recruited in years following any budget limitations are not disadvantaged compared to those themes who recruited in years prior to the implementation of those limitations.

Space Constraints

Everyone on campus is aware that physical space limitations for faculty, for postdocs, and for graduate and undergraduate students present a considerable impediment to our successful recruitment of new faculty. There are far too many faculty members currently in the UCM family who have had their research progress impeded for lack of space, or at least for lack of space provided in a timely manner.

If we are to successfully continue to recruit the type of outstanding faculty members who have joined UCM thus far, we have to find that balance between providing the space needed for a new faculty member to establish her/his professional roots, and evaluating the evolution of those space needs throughout that person's professional lifetime.

I have tasked the Deans to do an annual space analysis, to determine space allocations going forward. While different metrics for proper utilization may be defined for each of the schools, it is likely that information on research funding, student supervision (both graduate and undergraduate), research productivity and willingness to share collaborative space will all be considered. I will also be asking the academic Senate, working with the school deans, to analyze current space usage and provide recommendations for how best to utilize and allocate existing space, both to current faculty as well as to potential future hires.

Faculty Hiring Plan Open Fora

To provide opportunity for discussion, I have scheduled two open fora for the specific purpose of presenting (briefly) the overall plan and allowing for ample Q/A. They are scheduled for:

Wednesday, April 22, 4:30-6:00pm KL 232

Monday, April 27, 4:30-6:00pm KL 232

I sincerely hope you are able to attend one of these scheduled meetings.

Summary

The execution of this cluster-hire-driven faculty recruitment process will most certainly be a “work in progress.” I welcome collaboration of my colleagues in the academic Senate as we move forward over the next 6 - 8 years. Moreover, as it was with the SAF exercise, the combined wisdom of the entire faculty provides a far better path for going forward than any single administrator could concoct, and this will be true for this hiring plan as well. We all need to work together to ensure that this ‘grand experiment’ in higher education works, and this might require some tweaking and adjustments to the overall process as we move from one recruitment year to the next. I’m looking forward to working with all of you on this, and celebrating as we strengthen and grow areas that YOU have said are important for this university.

Cc: Chancellor Leland
Vice Chancellors
Deans
Academic Senate Leadership

Appendix

Strategic Academic Focusing Defining the Signature Academic Themes For the University of California, Merced 2015-2025

The University of California Merced has experienced remarkable growth in its brief decade of existence. Just twelve years ago, the land upon which the campus sits was, quite literally, a golf course. Everything about the University has been built from scratch: the physical plant, the curriculum, the infrastructure support for the programs, the research programs and all the student amenities (as spartan as they are). Quite naturally, the initial focus was to develop educational opportunities for undergraduate students. Nonetheless, the campus was still able to initiate research programs in a number of areas that are already receiving international recognition.

Even though initial programmatic growth was driven primarily by a somewhat reactive posture to student demand, internationally recognized educational and research programs have still been developed.

As we enter this next phase of critical growth of the campus, which will bring us to 10,000 students, a more strategic and targeted approach must be taken in our recruitment of the best faculty. To that end, a campus-wide strategic academic focusing initiative, arising from the faculty and refined and polished through true collaborative efforts, has resulted in the identification of six signature themes that will be the focus of our expansion for the next 7 to 10 years. Those six areas are:

- Towards a Sustainable Planet
- Computational Science and Data Analytics
- Chemical and Biological Materials and Matter
- Entrepreneurship and Management
- Human Health Science
- Inequality, Power and Social Justice

Towards A Sustainable Planet

Human activities are driving unprecedented changes in Earth systems of climate, biosphere, hydrosphere, atmosphere and cryosphere, while depleting natural resources and creating social, economic and political impacts that demand long-term, multi-faceted solutions. The extreme draught currently being experienced in California is but a microcosm of environmental and climate change challenges faced in every corner of the world.

Solutions to these problems will not come from research efforts of a single discipline or paradigm. Rather, successful efforts to develop environmentally sustainable systems for future societies will draw upon virtually all areas of the academy. Some of this work will be done by individual, single investigators as they ascertain the basic physical, chemical, biological or behavior mechanisms that underlie specific phenomena. Concomitantly, facile, interdisciplinary and transdisciplinary teams of humanists, social scientists, physical and biological scientists and engineers will be required to address the complex problems which human society faces if it is to exist in a sustainable way on this planet.

Current strengths in sustainability at UC Merced are typified by:

- The Sierra Nevada Research Institute, with significant research focusing on the short and long-term effects of snowpack on surface and groundwater in central California
- The Center for Information Technology Research in the Interest of Society (CITRIS), which uses terrestrial remote sensing for monitoring atmospheric pollutants.
- UC Solar, focusing on the means for increasing efficiencies in solar energy generation and forecasting solar power availability in California
- Environmental Sciences faculty who are studying the impact of dairy effluents on the excess waste biomass and high nutrient load in surface and groundwater.

Computational Science and Data Analytics

Research in Computational Science and Data Analytics focuses on the development of modeling methods, algorithms, synthesis, analysis and visualization tools to address the complexity and scale of problems in which massive amounts of data that arise in experiments and observations across all areas of engineering, sciences, management, and social sciences.

Scientific computing has become an integral part of engineering and science along with theory and experiments. However, with the growing demand for predictive computational models of real-world systems and the advancements in computer architecture, there is a pressing need for new numerical methods that enable simulation of exceedingly complex problems and can take advantage of technological advances. Another major challenge of today's science and engineering is processing and analysis of large amounts of data generated by experiments and observations as well as computer simulations.

At UC Merced, current research in these areas focuses on:

- Large scale datasets collected via agricultural drones, analyzing soil water content, pesticide coverage and other crop and soil characteristics
- In computer science, development of the hardware and software behind intelligent sensor networks, which finds application in virtually every area of research endeavor.
- Cognitive Science faculty who are relating electrical recordings of brain activity to responses in the social media, opinion surveys and other means.
- Material properties for complex chemical and physical structures generated not in the laboratory but rather by high-performance computing codes conducting sophisticated simulations.
- Massive datasets, which are becoming sufficiently large and complex to require new analytic methods for examining them and for efficiently testing theoretical predictions.
- Positing new means for the integration of the development of computational models and data analysis, which poses a challenge in itself, and is only beginning to be addressed by researchers.
- Robotic and virtually assistive agents developed by the Center on Autonomous and Interactive Systems, led primarily by computer science faculty.

Entrepreneurship and Management

Global challenges require global innovations that create broad social and economic opportunities. Properly and effectively addressing today's global challenges requires one to establish a new understanding of the nature of business and value, an understanding that enables us to address at once socio-economic challenges, environmental challenges, and challenges related to the increasing pace of change, especially change that arises from new technology and the human behavior responding to that technology.

The University of California Merced is, in many ways, uniquely positioned to take on that challenge, in the context of a rigorous and focused program integrating concepts of entrepreneurship, innovation and management throughout the academic core of the institution. UCM is uniquely positioned to create new and novel management and entrepreneurship programs at the graduate and undergraduate levels, and to lead in research and practice in areas of management relevant to the Central Valley, California, the US, and beyond. The San Joaquin Valley directly faces many of the grand challenges seen in our society in general: air quality, clean water, access to clean energy, access to good healthcare, and socio-economic disparities fueled by the lack of jobs. It is increasingly clear that the solution to these challenges is found at the intersection of technical issues and societal and policy issues. Entrepreneurship and Management represents a strong area of current focus and an excellent area for expansion because:

- Nearly 10% of our entire undergraduate student body is studying towards a degree in the management program
- One key community-facing part of the undergraduate curriculum is the Service learning program. While it finds its academic home in the School of Engineering, in point of fact it draws participating students from every school on the campus.
- UC Merced is a member of the inaugural class of institutions in the Stanford-University led Pathways to Innovation Program (P2I), which focuses on developing integrated elements of entrepreneurship throughout the curriculum, without resorting to the establishment of additional, stand-alone courses.
- The Capstone Senior design program for engineers, culminating the last week of the spring semester with the "Innovate to Grow" program, presents a team-based approach to solving the real-world design problems of industry partners from the Central Valley.
- The planned launch of a professional master's degree program in Management within the next two years, the University's first such professional degree.
- The University is home to an internationally recognized Parks Management Institute, offering resource management principles to individuals responsible for the stewardship of national parks in the US and other countries.
- We are the recipients of generous philanthropic support from the Gallo family to be used for the eventual establishment of a School of Management.

In sum, UC Merced is well-positioned to expand its existing undergraduate management offerings to the graduate level, through additional investments in this key area.

Human Health Science

Health is fundamental to the existence and prosperity of humans, and finding solutions to our health challenges requires advanced biomedical and behavioral health sciences, spanning from basic and fundamental to practical, translational research. Since its establishment, UC Merced has become a hub for research and training in the Human Health Sciences, with faculty members conducting original and world-renowned research and preparing undergraduates and graduate students for careers in the health sciences.

Human Health Sciences at UC Merced includes research and teaching from across the continuum of science. While most health scientists are located in the Molecular and Cell Biology, Psychological Sciences, and Public Health units, there are researchers from many other disciplines. In all, nearly half of all faculty at UC Merced are currently conducting research relevant to health and affiliated with the Health Sciences Research Institute (HSRI).

One focus of Human Health Sciences research and teaching is to promote healthy development in the underserved and diverse populations in our region. The people in the San Joaquin Valley experience a high prevalence of numerous health problems, coupled with a significant unmet need for health services. Our location provides a unique opportunity to advance fundamental knowledge and partner with providers and community members to develop solutions to the problems facing the people of the region.

Faculty research in Human Health Sciences at UC Merced includes

- understanding the basic biology, immune response, and prevention of viral pathogens such as hepatitis C virus and HIV, and bacterial pathogens such as *Chlamydia* and *Porphyromonas*; and the evolution of bacterial resistance;
- identifying the genetic and environmental factors influencing the health of people in the San Joaquin Valley, for example, in the case of Valley Fever;
- advancing our understanding of how diabetes, cancer, and other chronic conditions develop;
- promoting child health and development by working with parents of at-risk children; improving detection and treatment of cancers and chronic conditions in the region, especially for at-risk populations;
- working with local health providers and public health departments to help implement the Affordable Care Act in the region; and
- Developing new interventions that are culturally competent to promote health and utilize new technologies.

Inequality, Power and Social Justice

From the peasant rebellions of the Han Dynasty to the Arab Spring, from the Protestant Reformation to the murals of Diego Rivera, from Los Indignados to Occupy and other growing social movements to address income inequality at home and around the world, there is a need to develop scholarly understandings of inequality and resistance in the march towards social justice. Research at UC Merced brings together scholars across many disciplines and methods, and across multiple temporal and spatial frameworks, to study contemporary and historical inequality at scales from the intimate to the global, and to promote a more just and equitable society.

The key to understanding sociocultural power structures is recognizing that multiple dimensions of inequality have been constructed together and cannot be understood in isolation. For example, looking at poverty without also examining race and gender gives an incomplete picture. Similarly, knowledge may be less accurate and actionable when studying contemporary inequality in the absence of collaboration with those directly experiencing inequality, or when studying contemporary resistance movements without reference to their antecedents. Our unique California location provides opportunities to understand and positively transform our region while contributing to national and international conversations. We are animated by the UC Merced framework of “The World at Home/At Home in the World.”

Research strengths at UC Merced, which incorporates global studies and invites international comparisons, are typified by:

- addressing regional poverty and inequality, food insecurity and food deserts (even in the ‘abundant’ Central Valley), farmworkers rights and exposure to environmental hazards,
- Understanding social injustice surrounding deportation, mass incarcerations and environmental hazards disproportionately affecting the dispossessed.
- identifying the challenges faced by underrepresented groups in academic and professional fields, gender inequalities in art and theater, and the literary representations of diverse groups,
- Developing mechanisms for nurturing of communities that are more equitable, sustainable and prosperous.

Recruitment Year (FY)	2016	2017	2018-2021	SIX YEAR TOTAL
Arrival Year (AY)	16-17	17-18	18-22	2016-2022
Foundations	0	10	25-35	35-45
Sustainability	5	0	15-20	20-25
Big Data	5	0	15-20	20-25
Chem Bio Matls	0	5	7-13	12-18
Entrepreneurship/Management	0	5	3-7	8-12
Human Health	0	5	10-15	15-20
Social Justice	5	0	7-13	12-18
TOTAL HIRES	15	25	100	140

	SNS	SSHA	ENG	TOTAL
SAF Hires	41	32	27	100
Foundations	17	13	10	40
TOTAL	58	45	37	140
PERCENT SAF	71%	71%	73%	71%