

Focus on the future: Staying relevant in a changing California

Editor's note: A distinguished water at-

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California and its population are changing rapidly, and our research institutions must reposition themselves to address these changes. The University of California's Agriculture and Natural Resources (ANR)

division can and should be a catalyst for critical thinking about how science can shape a more prosperous future for our state and our people.

On my travels across California in the past few months, I have been reminded of what UC research and education means for our state. For over a century, our scientists and Cooperative Extension educators have made discoveries, field-tested new technologies and research breakthroughs, and delivered this information to local communities.

In doing so, we have helped Californians produce nutritious and abundant food supplies; sustain rich and diverse landscapes; conserve plants, animals and ecosystems; and enrich their daily lives. Combined with the cultural diversity and innovative spirit of our people, these UC contributions help make California a spectacular place to live.

However, to maintain this synergy between science and the California spirit, we must prepare for the future as diligently as we have fostered progress in the past. As the world's premier public, multidisciplinary research institution, UC is uniquely positioned to predict and analyze significant changes affecting Californians, be a leader in forecasting their consequences and help develop creative solutions.

For example, demographic shifts resulting from an increasingly urban population will make for a very different California. Competition for natural resources — water, land, air — will become even more intense as our state adds tens of millions of residents. Our farmers and ranchers will face new challenges that will test their ability to produce the abundant, high-quality, nutritious food that Californians have come to rely on, even take for granted. Our natural resources, especially forests, watersheds and wildlife, will also face greater pressures from a rapidly changing California.

However, I firmly believe that UC will be at the forefront in shaping the future if California invests in maintaining the university's world-class research, public service and teaching programs. Our scientists and students, given adequate support, will make new discoveries and scientific breakthroughs that contribute solutions to four of the most pressing challenges facing the state — the long-term viability and economic sustainability of farm and food systems, future energy supplies, the availability of water and climate change.

Agriculture continues to be a major economic engine for the state and an important source of employment for a growing population. Since 1948, California has led the nation in agricultural production. We are the top producer of more than 40 agricultural commodities and have increased our share of U.S. farm cash receipts from 9.5% in 1960 to 13% in 2006. California agriculture is expected to top \$37 billion in cash receipts and support nearly 700,000 jobs in 2008.

In the future, though, agriculture will be disproportionately affected by the state's population growth. Today's 38 million Californians are expected to number 60 million by 2050. Projections indicate that 11 of the 15 fastest-growing counties are also major agricultural counties and the conversion of prime agricultural land is accelerating. A challenge will be to maintain our national lead in the production of high-quality, high-demand specialty crops on a shrinking land base

Urban Californians also are likely to find themselves competing for water and energy with agriculture, fish and wildlife, unless we develop new sources, increase conservation and make more efficient use of these critical resources. The growing threat of global climate change is placing additional demands on California's water and energy infrastructure. How to provide enough water and energy to ensure that the needs of agriculture and urban populations are met, while maintaining viable natural ecosystems, will be a real challenge.

Finally, California is becoming more diverse, with Hispanics expected to be in the majority by 2042. UC will need to be responsive and sensitive to the needs of new residents from many backgrounds and ethnicities if we are to be relevant. ANR is already exploring better ways to deliver information on nutrition, food safety, food production and processing, and healthy lifestyles to a significantly changing population. We know we will need to employ new technologies to communicate more effectively, but which methods are optimal?

To answer these and other challenges, our division is beginning a long-term planning process in consultation with our campus partners. Our goal is to enable UC to continue to provide the scientific and technological breakthroughs that California needs to compete in a global economy;