

One of the difficulties forestry experienced, which was much less severe elsewhere in agriculture, was justifying research with a professional problem orientation as distinct from basic research. The striking thing is that over the past 50 years this problem hasn't changed. If anything, it is more difficult today than it was then.

What were UC's most significant research and extension contributions' during these years, particularly in forestry?

HV: The School had not had a long tradition of research at the time it was founded. Actually, there were only two members of the faculty in forestry already here who had strong research preparation and research accomplishment.

Joe Kittredge was a remarkable person and a dedicated researcher in the field of forest influences and a leading figure in encouraging research on the part of forestry students. The other person who was well trained in research was Arthur Samson, who was in range management. Other people on the forestry faculty had come out of professional backgrounds and had never been intensively trained as research workers. That all changed during my tenure as dean because the older class retired and they were replaced by young Ph.D.'s who had the traditional academic preparation for research and interest and drive to accomplish it.

This was certainly an outstanding contribution during the '50s: The establishment and development of Blodgett Experimental Forest as a research site and research tool. Prior to the emergence of Blodgett Forest, there was no comparable institution in California, and indeed, I think it's now the outstanding forest management research site in the West.

The area of remote sensing stemmed out of Professor Bob Colwell's initial work in photo interpretation, which gradually broadened into remote sensing and geographic information systems. That was a very important contribution both to the sophistication of the forestry program and to the community at large, because there was a huge market through Extension for the work that Colwell was doing in remote sensing.

How have societal changes over the last 50 years influenced the Division?

HV: One way of indicating change is in organizational terms. When I was dean, we started something called the Wildland Research Institute. This was about 1960. The Institute was within the Experiment Station, but designed to give more emphasis to wildland problems, which had not previously been a major focus of work in the Agricultural Experiment Station. Institute scientists performed some of the earliest and still, I think, the best wilderness research that's been done. After that initial thrust, the Wildland Research Center fell into a period of inactivity and so it didn't do much after that original study until around the mid-1980s. It has been revived and been very active and fruitful in the last several years through this Sierra Nevada Ecosystem Project and others. Thus the organization has responded to increasing societal concerns for the natural environment.

Looking toward the future, what is the most important task for the Division and for UC?

HV: The most important task for this College, to me, is to correct its lack of emphasis on a program of graduate professional education of comparable stature with the program for research and training of researchers. There's a huge need and employment field out there for graduates who are trained as professionals in environmental fields. And the College has all the resources necessary for high quality professional instruction. There's a clear difference between education for research responsibilities and education for professional responsibilities. Researchers think of problems in terms of a discipline that's already established with a structure and a content that's highly formalized. And research in this context is judged by standards that emerge from the formalized discipline. Professionals define problems in terms of what in practice are obstacles to success in solving problems of human beings by optimizing their environments.

—Ken Hall

Mary Ann Williams

Nutritionist

Mary Ann Williams came to UC Berkeley in 1951 as a graduate student. In 1955, she joined the faculty of the Berkeley department of nutrition and home economics, primarily studying essential fatty acids and their metabolic functions. She retired in 1991, but continues to teach part time at UC Berkeley.

In 1946, when California Agriculture was first published, California was entering a post-World War II era of optimism and prosperity. UC's College of Agriculture was on the brink of a great expansion. As you remember that time, what do you think society expected from the College of Agriculture?

MW: I had been an undergraduate at Iowa State University, which is another very famous land grant college. And then I was also at Cornell. I think in that time, society expected abundant food and at a reasonable price. This was the postwar expansion period when new technology and economic optimism gave rise to the notion that everything was going to get better and better.

How did you see your role and how did your job change over the years from your initial expectations?

MW: When I was a grad student in nutrition, I was attached to the poultry department. Grad students had to learn a certain amount of practical poultrying. Because the poultry department was paying us a graduate stipend, service to the poultry industry was part of our obligation for our salary. The nutrition and home economics faculty did not let us forget that we were paid by the taxpayers and had a responsibility to relate our teaching and research activities to taxpayer concerns.

Looking back, what do you think UC's most significant research and Extension contributions were during those years, particularly in your area of expertise?

MW: After WWII, the availability of radioisotopes, as well as other advances in methodology, truly revolutionized research. In the late 1940s, studies by Dr. Agnes Fay Morgan and Dr. Charles Heidelberger of the Berkeley "rad lab" were the first to show definitely that the amino acid tryptophan could be converted to the niacin. In the late '50s and early '60s, Dr. Ruth Okey used radiolabeled compounds to show how diet affected lipid metabolism in animals. Fundamental research on pancreatic enzyme secretion and the action of trypsin inhibitors found in beans was done by Dr. Richard Lyman.

In the late 1960s, a 6-bed, live-in metabolic ward was established in Morgan Hall under the directorship of Dr. Doris Calloway and Dr. Sheldon Margen. "Penthouse" research was chiefly funded by NIH and NASA and it ceased operation when federal funds became restricted. Such units were expensive to maintain because they required an experienced, permanent support staff to conduct long-term experiments. Subjects lived exclusively in the unit for as long as 3 months.

The major emphases were human protein and mineral requirements, especially zinc, iron and calcium. The results of these studies provided information that has been basic to establishing the currently used Recommended Daily Allowances made by the Food and Nutrition Board of the National Research Council.

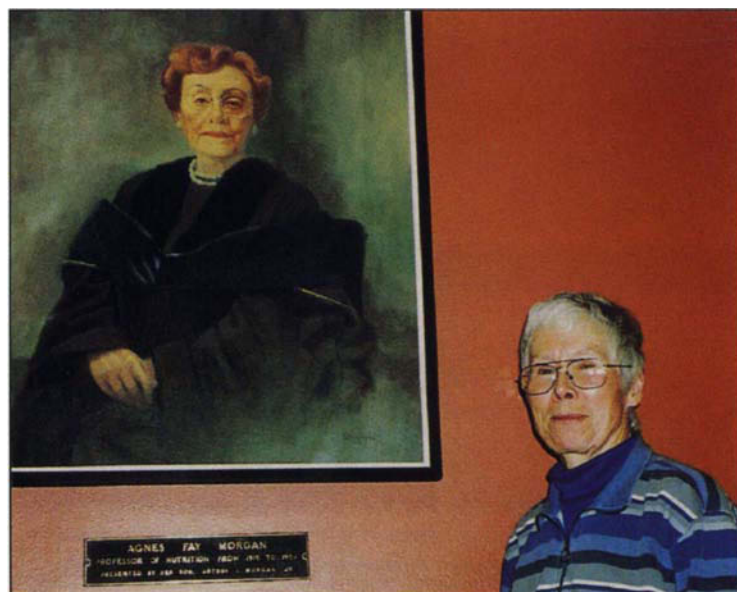
The Penthouse is still being used as a research facility, but it's mainly used on an outpatient basis. Nobody "lives in" on a long-term basis.

In the 1980s, Robert Stokstad studied availability of folic acid in foods and showed how vitamin B-12 and folic acid actions are interdependent. If you lack one, it disrupts functions of the other.

How have societal changes over the past 50 years influenced the Division?

MW: Because agriculture is not a major occupation in Berkeley, the urban population, in some cases, doesn't know how food is produced or what is required to maintain food production. People want to see hills, but they know little about the practical aspects of maintaining forests and wildlands.

I think much of the public discourse about natural resources and water is confusing and sometimes contradictory. For instance, we all want water and we all complain about agriculture using too much. We say that farmers are getting it too cheaply, and they're polluting



the groundwater. But we still want cheap food, which requires inexpensive water as well as inexpensive labor.

A major problem in a highly urbanized state is that most residents have no first-hand experience with farming, so farmers are seen through the popular mythology — old and new. There is concern about family farms disappearing and yet, price supports and water subsidies appear to make farmers rich. During the phase of *Silent Spring* and "square tomatoes," big farming, or agribusiness, was evil. And this notion persists despite the changes made in agricultural practices in response to the problems that environmental groups brought to the attention of the public.

Looking towards the future, what is the most important task for the Division and for the University?

MW: Water, because the water keeps everything going. Then the next thing is what I would call land management. I visit Germany frequently so I know that Germany has the size of California and twice the population. As you know, Central Europe has been crowded for a long time, so they know how to keep cities more livable and people-friendly, policies that reduce the need to sprawl into farmland or other open land.

Land that was agricultural is now being used for another subdivision. This is happening in Sacramento and San Jose because sales of land for houses will bring in more money immediately to the landowner than will agricultural use of the land. If we do that sort of thing there won't be any more agricultural land.

In your view, how has California Agriculture, the magazine, changed in its purpose and content over the last five decades?

MW: I think it's reflected the changes that have occurred within us, within agriculture in the state. The magazine and the Division have coped with change, and have changed. I feel that public perceptions of what we do have changed less. There are many people who think we're still chained to pesticides or chemical overfertilization.

—Ken Hall