UNIVERSITY OF CALIFORNIA

University of California 2023 Farm Bill Priorities

In 1862, Congress passed the Morrill Act, which granted federally controlled land to the states to create a "land-grant" college. Each state has a land-grant institution of higher education (sometimes referred to as an "1862"); in California, the University of California (UC) system fulfills that role. And within the UC system, UC Berkeley, UC Davis, UC Merced, UC Riverside, and UC Santa Cruz are the Agricultural Experiment Station campuses that work in conjunction with UC Agriculture and Natural Resources (UC ANR) to conduct agricultural, forestry, and nutrition research and extension.

UC is proud to be part of the land grant partnership that was developed between states and the federal government with the 1862 Morrill Act, 1887 Hatch Act, and the 1914 Smith-Lever Act. That enterprise has, for 160 years, advanced scientific knowledge in all aspects of food production, and improved production capacity, profitability, and safety of the nation's food system.

A vital component of federal support for agricultural research is the capacity funding specifically dedicated to supporting research and Cooperative Extension programs at America's land-grant universities. These capacity funds are available annually on a non-competitive basis and require a match at the state and local levels; they include Hatch, Smith-Lever, Evans-Allen, McIntire-Stennis, Animal Health and Disease Research, Expanded Food and Nutrition Education Program, 4-H Youth Development, Renewable Resources Extension Act, and 1890 and 1994 Extension.

The University of California strongly supports investments in agricultural research, development, and extension. Funding for these activities have chronically been held at a low, stagnant level to the point where now most programs are massively underfunded.

With an increasingly global economy and demand for healthy, abundant, and affordable food, it is critical that our food systems are able to respond to and overcome challenges, such as prolonged drought, new invasive pests and diseases, and the lack of access to basic technology and adequate infrastructure.

Each Farm Bill provides an opportunity for critical federal investment into the research, extension, and infrastructure of our nation's land-grant institutions that will allow us to produce the food we need to nurture and sustain a growing population in a sustainable and environmentally responsible way. In turn, this strengthens the United States and California's agricultural industry in an increasingly competitive global marketplace and improves the health, safety, and abundance of food for all consumers. As Congress considers the 2023 Farm Bill, UC has a vested interest in the programs listed in this document, which are described below.

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TITLE II – CONSERVATION

1. Conservation and Technical Assistance 16 USC §3839aa

UC has formed long-lasting and trusted partnerships with farmers and landowners by providing research and technical information necessary to make conservation improvements. Most of these improvements are funded through USDA programs such as the Environmental Quality Incentives Program (EQIP). UC's work results in direct impacts on factors such as productivity, soil health, and water quality. Additionally, through UC's network of advisors and specialists within UC ANR, UC has been actively engaged in helping homeowners and land owners improve forest management and prevent the spread of wildfires.

To leverage existing resources and better develop synergies among technical assistance providers, representatives of UC ANR, UC Davis, California Department of Food and Agriculture, California Farm Bureau Federation, California Association of Resource Conservation Districts, and USDA Natural Resources Conservation Service (NRCS) signed a formal agreement to form the California Farm Demonstration Network. Among other goals, the group is exploring how to ensure that science developed by UC ANR can be quickly adopted into the USDA NRCS Field Office Technical guide, making it much more available for implementation by farmers and landowners. Encouraging the preference of Cooperative Extension to serve as Technical Service Providers would aid in this effort.

Recommendation

- Support language that encourages the preference of Cooperative Extension to serve as Technical Service Providers to NRCS.

TITLE IV – NUTRITION

1. Supplemental Nutrition Assistance Program Education (SNAP); Eligibility for College Students; 7 USC §2036a

The current SNAP Program should be amended to allow qualifying attendance at an institution of higher education to count as meeting the work requirements for purposes of determining eligibility for SNAP benefits for college students. Under current eligibility rules for SNAP benefits, due to existing work requirements, it can be difficult for college students to prove they are eligible for SNAP benefits, which can greatly assist college students in meeting food security and basic needs, if they would otherwise be eligible for such benefits. In order to help to address the eligibility needs of college students for SNAP benefits, UC supports the inclusion in the 2023 Farm Bill of the text of H.R. 1919, the Enhance Access to SNAP Act of 2021, or the EATS Act of 2021, which is pending in the House in the 117th Congress.

Specifically, H.R. 1919 amends the Food and Nutrition Act of 2008 to "treat attendance at an institution of higher education the same as work for the purpose of determining eligibility to participate" in the SNAP Program. The text of H.R. 1919, the Enhance Access to SNAP Act of 2021 follows: Section 6 of the Food and Nutrition Act of 2008 (7 U.S.C. 2015) is amended—(1) in subsection (e)(4) by striking "employed" and inserting "attending an institution of higher education (as defined in section 102 of the Higher Education Act of 1965 (20 U.S.C. 1002)) or employed, in the aggregate,", and (2) in subsection (o)(2)(A) by striking "work" and inserting "attending an institution of higher education (as defined in section 102 of the Higher Education Act of 1965 (20 U.S.C. 1002)) or work, in the aggregate,".

Recommendation

- The addition of the text of H.R. 1919 in the 2023 Farm Bill would help to address eligibility problems faced by college students under the current SNAP Program to ensure that college students are better able to address food insecurity challenges while attending college.

TITLE VII – RESEARCH, EXTENSION, AND RELATED MATTERS

The University of California strongly supports investments in agricultural research, development, and extension. Funding for these activities have chronically been held at a low, stagnant level to the point where now most programs are massively underfunded.

With an increasingly global economy and demand for healthy, abundant, and affordable food, it is critical that our food systems are able to respond to and overcome challenges, such as prolonged drought, new invasive pests and diseases, and the lack of access to basic technology and adequate infrastructure.

1. Smith-Lever Act of 1914; Sections 3(b) and 3(c) Capacity Grants; 7 U.S.C. §341 et seq.

The Smith-Lever Act established the Cooperative Extension System at land-grant colleges and universities in partnership with USDA and local governments. UC Cooperative Extension develops and extends science-based information and programming, bringing the power of UC research into the hands of local communities on topics regarding agriculture, natural resources, nutrition, economic and youth development.

Recommendation

- Protect the program as it is currently written.

2. Smith-Lever Section 3(d); EFNEP Expanded Food and Nutrition Education Program (EFNEP); 7 U.S.C. §3175

The Expanded Food and Nutrition Education Program (EFNEP) is a federally-funded program that helps families establish and maintain healthy eating habits and physically active lifestyles. In California, EFNEP is administered by the UC Cooperative Extension in 24 of California's 58 counties. Through EFNEP, our Cooperative Extension advisors assist limited-resource clients gain the knowledge, skills, attitudes, and changed behavior necessary to choose nutritious diets and improve physical well-being. In FY 2022, the University of California Agriculture and Natural Resources received $3.8 million in grants from the Smith-Lever Act to support EFNEP activities. For every dollar invested in EFNEP, more than $10 is saved in current and future healthcare costs.[1]

Recommendation

- Reauthorize the program and increase or maintain funding at $91 million per FY.

3. Hatch Act – Agricultural Experiment Stations; 7 U.S.C. §361a et seq.

The Hatch Act of 1887 provides funding for agricultural research at State Agricultural Experiment Stations (AES). In California, our AES facilities include UC Berkeley, UC Davis, UC Merced, UC Riverside, and UC Santa Cruz. Hatch Act funding has been used to conduct research on emerging issues and allows us to work directly with producers. One example is direct work with local vineyards and evaluating the impact of recent wildfire smoke on wine flavor profiles and consumer preferences.

Recommendation

- Protect the program as it is currently written.

4. McIntire-Stennis Cooperative Forestry Act; 16 U.S.C. §582a-1 et seq.; §7604 of the 2018 Farm Bill

The McIntire-Stennis Cooperative Forestry Act funds research associated with the production, utilization and protection of forest lands. At UC Berkeley, seven faculty groups are conducting research supported with McIntire-Stennis funds. With this funding, UC Berkeley faculty draw on a wide range of techniques, including genomics, stable isotopes, eddy covariance and remote sensing to assess social and ecological factors affecting forest conservation and management. Research topics include reduction of fire risk, with benefits for human well-being, restoring fire regimes on the landscape to better manage forests, and assessing the linkages between fire, carbon storage, and water supplies in montane forest ecosystems.

[1] Dollahite, Jamie, Donald Kenkel, and C. Scott Thompson. An economic evaluation of the expanded food and nutrition education program. Journal of Nutrition Education and Behavior 40.3 (2008): 134-143.

Recommendation

- Protect the program as it is currently written.

5. Research Facilities Act; §7503 of the 2018 Farm Bill

The Research Facilities Act was reauthorized by the 2018 Farm Bill to create an agriculture and food-focused research infrastructure program for facility construction, alteration, acquisition, modernization, renovation, or remodeling. The need to reauthorize and fund the Research Facilities Act is clear: infrastructure in most land-grant universities is aging, inadequate, and, in many cases, obsolete.

A national study of capital facilities and deferred maintenance recently documented the magnitude of the infrastructure problem that threatens to further erode the United States' preeminent role in global food and agricultural research. The conclusions from this 2021 Gordian Report[2] on the age of the buildings, the lack of capital investment over time, and the levels of deferred maintenance needs are sobering – the total deferred maintenance cost is at least $11.5 billion. For the United States to remain a world leader in food and agricultural research, this aging infrastructure problem must be addressed.

We cannot conduct 21s century research and innovation with 20th century infrastructure and facilities. California has the scale, crop diversity, and workforce to lead the world in agricultural innovation, but bringing new food and agriculture technologies from the lab to the fields – and to the commercial marketplace at scale – remains a significant challenge. UC Agriculture and Natural Resources is creating new partnerships, such as the Verde Innovation Network for Entrepreneurship (The VINE), to better support cross-regional collaboration, mentorship and expertise, and to bridge the rural/urban "innovation divide" between Silicon Valley and California agriculture. However, these projects depend on adequate infrastructure and basic technologies, such as broadband internet, that are not available in rural agricultural areas.

The return on investment is high. International research from the Organisation for Economic Co-operation and Development (OECD) indicates that agricultural research investments result in $10-$20 in benefits for every $1 spent on research.[3][4][5]

For UC specifically, our research drives the agricultural sector. We deliver innovative technologies, we grow the agricultural marketplace, and we support job creation and boost the economy. However, many of our buildings and facilities were built in the 1950s and 60s and are in need of replacement or significant improvement. In fact, 70% of the research facilities at U.S. public colleges of agriculture are at the end of their useful life. Bringing our facilities up to modern standards would provide capacity for precision agriculture, remote sensing, growing space for CRISPR-based research, and would ensure that cutting-edge research can continue to be conducted to meet the agricultural and natural resources needs of California and the nation.

Recommendations

- Reauthorize the Research Facilities Act and remove the matching requirement.
- Provide $5 billion for agriculture and food research infrastructure for land-grant colleges and universities.

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[2] A National Study of Capital Infrastructure at Colleges and Schools of Agriculture. Gordian. March 2021. https://www.aplu.org/library/a-national-study-of-capital-infrastructure-at-colleges-and-schools-of-agriculture-an-update/file

[3] OECD Food and Agricultural Reviews Innovation (2016). Agricultural Productivity and Sustainability in the United States. OECD Publishing. ISBN: 9264264124, 9789264264120.

[4] Heisey PW and Fuglie KO (2018, May). Agricultural Research Investment and Policy Reform in High-Income Countries, ERR-249, U.S. Department of Agriculture, Economic Research Service.

[5] Baldos UL, Viens FG, Hertel TW, and Fuglie KO (2018, July) R&D Spending, Knowledge Capital, and Agricultural Productivity Growth: A Bayesian Approach. Amer. J. Agr. Econ. 101(1): 291–310; doi: 10.1093/ajae/aay039

6. Increase cap on retirement contributions from capacity grants; 7 U.S.C. §331

Employer contributions from capacity grants (Hatch Act, Smith-Lever Act, and 1890s and animal health and disease research funds provided to veterinary schools and AES) to land-grant college retirement systems are limited to 5 percent of that portion of the salaries paid. In contrast, this limitation is not placed on competitive grants or other capacity grants not listed above (McIntire Stennis, 1890 Facilities, RREA, EFNEP, and Tribal College Endowment). Competitive grants are subject to the federally negotiated indirect cost rate and composite benefit rate.

Recommendation

- Remove the cap on employer contributions to land-grant college retirement systems and allow for capacity grants to use the federally negotiated indirect cost rate and composite benefit rate.

7. Agriculture and Food Research Initiative (AFRI); 7 U.S.C. §3157; §7504 of the 2018 Farm Bill

AFRI was established in its current form in the 2008 Farm Bill and "AFRI-funded science is vital to meeting food, fiber, and fuel demands as the world's population races toward a projected $9 billion by 2050 concomitant with diminishing land and water resources and increasingly variable climatic conditions. In addition, AFRI programs help develop new technologies and a workforce that will advance our national security, our energy self-sufficiency, and the health of Americans."[6] Under the Farm Bill, Congress has mandated six research areas of priorities: (1) plant health and production and plant products; (2) animal health and production and animal products; (3) food safety, nutrition, and health; (4) bioenergy, natural resources, and environment; (5) agriculture systems and technology; (6) agriculture economics and rural communities.

In the past five years, from fiscal years (FYs) 2016-2021, UC has received over $135 million in AFRI funding.[7] These awards have focused on invasive pests, citrus research, STEM workforce development, agricultural technology, clean water, food safety, water use and irrigation, and providing UC labs with much-needed research equipment.

AFRI's Competitive, Special, and Facilities Research Grant Act is geared towards new investigators, and the stated criteria is too restrictive and counterproductive for the future workforce and does not take into consideration pandemics or family leave options. Currently, new investigators are defined as those who "do not have an extensive research publication record" and who are "within 5 years of the beginning of the initial career track position." This does not exclude scientists who have worked outside of academia for many years but then, for example, take on an academic appointment. Language should be added that specifies the applicants should be within 12 years of their terminal degree, with an allowance for medical leave or other extenuating circumstances, and do not already have extensive publication records.

Recommendations

- Reauthorize AFRI and increase or maintain the authorization level at $700 million per FY.
- Avoid attempts to "earmark" AFRI for specific fields of research or to combine it with other programs.
- Change new investigator criteria to those "who are within 12 years of their terminal degree, with an allowance of up to 2 years due to medical leave or other extenuating circumstances, and have fewer than 25 peer-reviewed publications as first, or senior, author and fewer than 75 total peer-reviewed publications".

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[6] NIFA. (Jun. 2022). *Agriculture and Food Research Initiative*. Retrieved from https://nifa.usda.gov/program/agriculture-and-food-research-initiative-afri.
[7] NIFA. (Jun. 2022). *NIFA: Recent Awards*. Retrieved from https://portal.nifa.usda.gov/lmd4/recent_awards?report_title=Recent%20Awards&from_site=NIFA&search_label=Awards%20Listing.

8. USDA NIFA Crop Protection Pest Management Program (CPPM), Regional Integrated Pest Management Centers

Since 2000, USDA-NIFA funded the Regional Integrated Pest Management Centers (Regional IPM Centers) promote smart, safe, and sustainable pest management. The four Regional IPM Centers serve as a hub of multi-state partnerships and communication networks linking researchers and educators from the public and private sectors. These Centers, including the Western Regional IPM Center which is operated by UC ANR, work to bring the right people together with the necessary resources to solve the regions most pressing pest problems. As more pests and diseases enter the US and impact agricultural and natural spaces, additional resources are necessary to address, mitigate, and treat pests and diseases.

Recommendation

- Maintain or increase support for USDA-NIFA Crop Protection Pest Management Programs

9. Specialty Crop Research Initiative (SCRI); §7305 of the 2018 Farm Bill

The SCRI program within USDA's National Institute of Food and Agriculture (NIFA) traces its roots to the 1998 Farm Bill, but it was established in its current form in the 2008 Farm Bill. In the 2018 Farm Bill, Congress provided $80 million in mandatory funding each FY for 2018-2023. SCRI is important to California's agricultural research enterprise as California grows over 400 agricultural commodities and produces over 50 percent of the nation's supply of fruits, nuts, and vegetables. In fact, 8 of our top 10 commodities are specialty crops: almonds, grapes, pistachios, lettuce, strawberries, tomatoes, flowers, and walnuts.[8] Since SCRI's inception in 2008, UC entities have received over $94 million in funding.[9]

Recommendations

- Reauthorize SCRI and increase or maintain the mandatory funding at $80 million per FY.
- Eliminate the matching funds requirement for programs such as the Specialty Crop Research Initiative (SCRI) which were imposed under the 2018 Farm Bill. Specifically, Section 7614 Matching Funds Requirement reinstated the pre-2014 Farm Bill matching requirements for land-grant universities applying for NIFA grants. This is exceedingly important for specialty crops: given their unique nature and limited market share, they require crop-specific research but lack the industry bandwidth to offset matching costs. While Congress has included language in several appropriations bills since passage of the 2018 Farm Bill to allow the Secretary of Agriculture to waive the matching funds requirement under the SCRI program, there is still a great deal of uncertainty about whether land-grant universities will be able to continue to apply for SCRI grants, or for other impacted programs. UC recommends that the next Farm Bill be amended to reinstate applicable language from Subtitle P of the National Agriculture Research, Extension, and Teaching Policy Act of 1977 (7 U.S.C. 3371), to again allow land-grant universities to apply for federal grants under NIFA without having to meet matching funds requirements reinstated under the 2018 Farm Bill.

10. Emergency Citrus Disease Research and Extension (ECDRE) program; 7 U.S.C. 7632(j); §7306 of the 2014 Farm Bill

The 1998 Farm Bill created the Citrus Disease Research and Extension (CDRE) program within SCRI to combat Huanglongbing (HLB; citrus greening), which is a bacterial disease spread by the Asian Citrus Psyllid. Citrus greening has been ravaging Florida's citrus industry and has the potential to devastate Texas' and California's citrus industries as well. The 2014 Farm Bill re-created CDRE as the Emergency Citrus Disease Research and Extension program (ECDRE), and the 2018 Farm Bill funds the program

[8] *California Agricultural Statistics Review 2020-2021.* California Department of Food and Agriculture. Retrieved from https://www.cdfa.ca.gov/Statistics/PDFs/2021_Ag_Stats_Review.pdf

[9] NIFA. (Jun. 2022). *NIFA: Recent Awards*. Retrieved from https://portal.nifa.usda.gov/lmd4/recent_awards?report_title=Recent%20Awards&from_site=NIFA&search_label=Awards%20Listing.

through the Emergency Citrus Disease Research and Development Trust Fund (see Miscellaneous section of this document). Congress provided $25 million per year for FYs 2019-2023 for ECDRE, for a total of $125 million. Since 2014, UC has received over $52 million in funding to conduct research to combat citrus greening from the CDRE/ECDRE program.[10]

Recommendation

- Reauthorize ECDRE and increase or maintain the mandatory funding of $25 million per FY.

11. Support for Honeybee Research and a Genetics and Breeding Health Center

Honeybees are responsible for the pollination of more than 80 agricultural crops, making them a pivotable player in national security and the production of a stable food supply. US beekeepers are facing increased threats to keep their colonies alive; as much as 40% of stock has been lost each year over the past decade to issues with parasites and pathogens, pesticides, environmental changes, and ineffective management tools for bee health management. UC supports additional funding for honeybee research which is critical to support the shrinking U.S. honeybee population. UC also supports the possibility of establishing a new Honeybee Genetics and Breeding Health Center, which would serve as the hub of multi-state institutional partnership addressing the pollinator crisis with a targeted approach on extension/industry focus for the development and delivery of novel bee health management tools that are scientifically validated and feasible/affordable for beekeepers.

Recommendation

- Support funding for honeybee research and a genetics and breeding health center.

12. Foundation for Food and Agriculture Research (FFAR); §7603 of the 2018 Farm Bill

FFAR was created in the 2014 Farm Bill with the hope of filling in the research gaps that are currently unfunded by other federal agencies and programs. The Farm Bill provided one-time mandatory funding for FFAR of $200 million and all research projects require a 1:1 match—the majority of which are raised by the individual researcher. The 2018 Farm Bill provided $185 million. Thus far, UC campuses and spin-offs have received over $10 million in grant awards.

Recommendation

- Reauthorize the Foundation for Food and Agriculture Research program.

13. Education Grants Program for Hispanic-Serving Institutions (HSI); 7 U.S.C. §3241

The Hispanic-Serving Institutions Education Grants (HSI) Program is a critical U.S. Department of Agriculture (USDA) competitive grants program, operated through the National Institute of Food and Agriculture (NIFA). These competitive grants support STEM education programs in the food and agricultural sciences at institutions with at least 25 percent Hispanic enrollment. UC Irvine, UC Merced, UC Riverside, UC Santa Barbara, and UC Santa Cruz (with UC Davis pending designation) are Hispanic-Serving Institutions (HSI) and are eligible for these funds. The Farm Bill authorizes the program at $40 million per fiscal year, and historically it has received appropriations of $11-14 million each fiscal year. Since 2016, UC has received $6 million.[11]

Recommendation

- Reauthorize the program and increase or maintain the authorization at $40 million per FY.

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[10] NIFA. (Jun. 2022). *NIFA: Recent Awards*. Retrieved from https://portal.nifa.usda.gov/lmd4/recent_awards?report_title=Recent%20Awards&from_site=NIFA&search_label=Awards%20Listing.
[11] NIFA. (Jun. 2022). *NIFA: Recent Awards*. Retrieved from https://portal.nifa.usda.gov/lmd4/recent_awards?report_title=Recent%20Awards&from_site=NIFA&search_label=Awards%20Listing.

14. Organic Agriculture Research and Extension Initiative (OREI); 7 U.S.C. §5925b; §7210 of the 2018 Farm Bill

California, with 3,012 organic farms, has the largest number of organic farms in the country or 18 percent in 2019. Our state also generates the most revenue (farm gate value) from organic agriculture, totaling $3.6 billion or 36 percent of the nation's organic agriculture industry.[12] In order to support the organic agriculture industry, NIFA's OREI program funds "projects that will enhance the ability of producers and processors who have already adopted organic standards to grow and market high quality organic agricultural products."[13]

The 2018 Farm Bill provided mandatory funding for OREI ramping up from $30 million per fiscal year to $50 million by FY 2023 and for each year thereafter. Since 2018, UC has received nearly $2 million in grants to support organic agriculture research and extension.[14]

Recommendation

- Reauthorize the program and increase or maintain the mandatory funding at $50 million per FY.

15. Grants and Fellowships for Food and Agricultural Sciences Education; 7 U.S.C. §3152

This grant program supports graduate students in the USDA mission areas of food, agriculture, and natural resources sciences. Universities with significant minority enrollments, like many UC campuses, are given preferential consideration.

Recommendation

- Reauthorize the program and return the program to its historic authorization level of $60 million per FY. The 2014 Farm Bill lowered the authorization to $40 million per FY.

16. Forestry Products Advanced Utilization Research; 7 U.S.C. §7655b(f)(1)); §7308 of the 2018 Farm Bill

This program enables the USFS to run the wood innovation grant and demonstration programs, which has been a large source of funds supporting wood products innovation research in California. Research includes wood quality improvement, novel engineered lumber products and renewable energy from wood, and timberland management. There are also funds for demonstration and manufacturing projects.

Recommendation

- Reauthorize the program and maintain or increase authorization at $7 million per FY.

17. Food Animal Residue Avoidance Database Program; 7 U.S.C §7642; §7306 of the 2018 Farm Bill

The Food Animal Residue Avoidance Database Program (FARAD) provides scientifically valid information on how to avoid drug, environmental, and pesticide contaminant residues in food animals and helps avert food safety crises. Every year, FARAD handles more than 1,000 calls with an estimated impact on more than six million animals. UC Davis operates one of the five centers across the U.S.

Recommendation

- Reauthorize FARAD and increase the authorization from $2.5 million to $5 million per FY.

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[12] USDA. (Oct 2020). *2017 Census of Agriculture, 2019 Organic Survey*. Retrieved from https://www.nass.usda.gov/Publications/AgCensus/2017/Online_Resources/Organics/ORGANICS.pdf.
[13] NIFA. (Jun 2022). *Organic Agriculture Research and Extension Initiative*. Retrieved from https://nifa.usda.gov/funding-opportunity/organic-agriculture-research-and-extension-initiative.
[14] NIFA. (Jun. 2022). *NIFA: Recent Awards*. Retrieved from https://portal.nifa.usda.gov/lmd4/recent_awards?report_title=Recent%20Awards&from_site=NIFA&search_label=Awards%20Listing.

18. Continuing Animal Health and Disease, Food Security, and Stewardship Research, Education, and Extension Programs; 7 U.S.C. § 3195; §7113 of the 2018 Farm Bill

This program is critical for maintaining the veterinary medical component of the Agricultural Experimentation Stations. UC Davis runs the Center for Food Animal Health (CFAH) in California, which is the veterinary medical component of the California Agricultural Experiment Stations. The CFAH organizes resources for and conducts research on animal diseases important to livestock industries, important food borne and vector borne disease problems, zoonoses associated with diseases of livestock, and environmental health important to the State of California.

Recommendation

- Reauthorize the program and increase or maintain the authorization at $25 million per FY.

19. Veterinary Services Grant Program (VSGP); §7106 of the 2018 Farm Bill

The VSGP is designed to address gaps in shortage situations by preparing and assisting veterinarians for practice in rural areas, facilitating private veterinary practices engaged in public health activities, and specifically aiding the practices of veterinarians who have completed service under the Veterinary Medicine Loan Repayment Program. More than 500 counties across the US have shortages of food animal veterinarians and today, only 3-4% of new veterinary school graduates pursue livestock or other food-animal practice areas, a stark decline from the 40% of graduates who specialized in this area just 40 years ago. This decline in food animal veterinarians heightens concerns for a number of risks including food safety threats, animal disease outbreaks, and the potential for disease spillover from animals to humans.

Recommendation

- Reauthorize the program

20. Renewable Resources Extension Act of 1978; 16 U.S.C. §1675; §7509 of the 2018 Farm Bill

Landowners and managers face challenges associated with invasive species, increased risk of destructive wildfires and climate change. Extending science-based information is essential for addressing resource management concerns from forest health to local economies. UC ANR uses limited RREA funds to provide grants to academics to expand the capacity of natural resource extension educators to deliver current, relevant, research-based programs to help forest and rangeland owners, communities, policymakers, and the public make informed decisions in areas that are critical importance to the ecological, social, and economic well-being of California. Projects include presenting workshops to counties interested in forming Prescribed Burn Associations, developing technical guides on hazardous fuel reduction; and developing outreach materials.

Recommendation

- Reauthorize the program

21. Rangeland research programs; §7134 of the 2018 Farm Bill

Rangeland research programs allow UC scientists to develop and advance science-based knowledge in partnership with diverse management and policy stakeholders to promote agricultural and environmental sustainability on California's grazing lands.

Recommendation

- Reauthorize the program

22. Increase investment in integrated pest management programs and research

Invasive pests and disease management is a priority area that requires more federal investment to address the increasing impact of invasive species on agricultural production, consumer horticulture, and natural lands. The eradication and immediate suppression of invasive pests is expensive. For example, California alone spends a total of $45 million per year for the suppression of one single citrus pest/disease (ACP/HLB). Furthermore, as pesticide applications change, additional investment is required for research on pesticide replacement programs.

Recommendations

- Identify invasive species and diseases research as a priority area
- Increased authorizations for the methyl bromide replacement program for additional research

23. Minor Crop Pest Management Program – Interregional Research Project #4 (IR-4)

The IR-4 Program provides expert assistance for the development and registration of crop protection products needed for minor agricultural use and use on specialty crops. For the past 57 years, the program has facilitated cooperation between producers, grower organizations, state Cooperative Extension Services, land-grant universities, and federal agencies to ensure the availability of safe, effective and economical pest management tools for specialty crops, minor crops, and minor uses.

Recommendations

- Increase funding for the IR-4 project to $50 million mandatory annually.

24. Supplemental Nutrition Assistance Program Education (SNAP-Ed); 7 U.S.C. §2036a

The CalFresh Healthy Living, UC nutrition education program has served California's SNAP-Ed communities through UC Cooperative Extension. This statewide program inspires and empowers underserved Californians to improve their health and the health of their communities by promoting awareness, education, and community change through diverse partnerships, resulting in healthy eating and active living. With the passage of *Healthy Hunger Free Kids Act*, programs now include the integration of policy, systems, and environmental change initiatives designed to improve healthy lifestyles and reduce obesity and chronic diseases. In 2021, UC reached over 28,000 individuals through evidenced-based direct education to youth, adults, and seniors in 32 counties.

Recommendation

- Reauthorize SNAP-Ed and increase or maintain the authorization at $900 million per FY.

25. Sustainable Agriculture Research & Extension (SARE); 7 U.S.C. §5831

SARE offers competitive grants to farmers, ranchers, and other agricultural professionals and scientists for on-farm research, education, and professional development. Since 1988, SARE has invested over $361 million in over 8,100 grants, of which nearly half were awarded to farmers and ranchers.[15] In California has been awarded over $14.8 million since 1988, funding projects that have determined innovative ways to improve farm production by employing conservation methods such as reduced tillage, crop rotations, use of cover crops, and improving irrigation efficiency.

Recommendation

- Reauthorize the program and increase or maintain funding at $45 million per FY.

26. Higher Education Challenge Grants Program; Grants and Fellowships for Food and Agriculture Sciences Education; §7107 of the 2018 Farm Bill; 7 U.S.C. §3152

The USDA Higher Education Challenge Grants Program is designed to strengthen university capacity to, among other things, enhance the quality of instruction to help meet current and future workforce needs in the food and agricultural sciences.

Recommendation

- Reauthorize the program and increase or maintain funding at $40 million per FY.

[15] SARE. (Nov. 2022). *Sustainable Agriculture Grants.* Retrieved from http://www.sare.org/Grants.

27. Urban, Indoor, and Other Emerging Agricultural Production Research, Education, and Extension Initiative; §7212 of the 2018 Farm Bill

The Urban, Indoor, and other Emerging Agricultural Production Research, Education and Extension Initiative (UIE) was created in the 2018 Farm Bill to support research, education, and extension activities that facilitate development of urban, indoor, and other emerging agricultural production, harvesting, transportation, aggregation, packaging, distribution, and marketing systems. The UIE is administered by NIFA and the competitive grant program was implemented in 2022. The 2022 UIE program priorities include: identifying and promoting the factors that contribute to successful emerging agricultural production systems, analyzing how new agricultural sites are determined and evaluated, and developing new crop varieties and agricultural products to connect to new markets.[16]

Recommendation

- Reauthorize the program and increase or maintain funding at $10 million per FY.

28. Supplemental and Alternative Crops: Hemp; §7129 in the 2018 Farm Bill

The 2018 Farm Bill extends the supplemental and alternative crops program at USDA and maintains $2 million per FY funding levels through FY2023. It also amended the program to expand eligibility to industrial hemp. UC supports the reauthorization of this program and continued funding for industrial hemp research.

Recommendation

- Reauthorize the program and increase or maintain funding at $2 million per FY.

29. Biomass Research and Development Initiative; 7 U.S.C. §8108; §7507 in the 2018 Farm Bill

The Biomass Research and Development Initiative provides grant funding for projects addressing research, development, and demonstration of biofuels and bio-based products and the methods, practices, and technologies for their production. Funded projects focus on three main technical areas: feedstock development, biofuels and bio-based products development, and biofuels development analysis.

Recommendation

- Reauthorize the program and increase or maintain funding at $20 million per FY.

30. USDA AGARDA Program; §7132 of the 2018 Farm Bill

The 2018 Farm Bill authorized the creation of the Agriculture Advanced Research and Development Authority (AGARDA) pilot program, to develop agriculture technologies. The reauthorization of the AGARDA Program in the 2023 Farm Bill reauthorization process would help to support the commercialization of agriculture related technologies.

Recommendation

- Reauthorize the program.

In addition to reauthorizing AGARDA, UC also recommends creation of the following new innovation programs to support the commercialization of agriculture-related technologies, modeled after existing successful programs operated by NSF and NIH.

31. USDA I-Corps Hub Program

The USDA does not currently operate an I-Corps Hub program. Creating a USDA I-Corps Hub Program, modeled after the National Science Foundation (NSF) I-Corps Program, would help to support the

[16] NIFA. *Retrieved from* https://www.nifa.usda.gov/grants/programs/urban-indoor-emerging-agriculture

commercialization of agriculture related technologies.

Recommendation

- Consider creating an I-Corps Program at USDA.

32. USDA SBIR Phase (0) Commercialization Proof of Concept Program

Universities are not eligible for USDA SBIR programs which are reserved for small businesses. The creation of a Phase (0) Commercialization Proof of Concept Program at the USDA that universities are made eligible to apply for would help to support the commercialization of agriculture related technologies. A similar program had been established previously at the National Institutes of Health (NIH).

Recommendation

- Consider creating a SBIR Phase (0) Commercialization Proof of Concept Program at USDA.

TITLE VIII – FORESTRY

1. Wood Innovation Grant Program; §8643 in the 2018 Farm Bill

The Wood Innovation Grant program aims to expand traditional wood use projects, advance wood energy markets, and promote wood use in commercial building construction. The program also contains market development goals to reduce hazardous fuels and improve forest health on national forests and other forest lands, reduce the costs of forest management, and promote economically strong and environmentally healthy communities. As the primary source of forest-biomass technology demonstration funds, this program provides invaluable resources to scale up new, profitable uses for forest residues in California. This is critical funding as California and the US Forest Service seek to reduce the risk of catastrophic wildfire.

Recommendation

- Reauthorize the program and increase or maintain funding at $12.5 million per FY.

2. Community Wood Energy and Wood Innovation Program; 7 U.S.C. §8113; §8644 in the 2018 Farm Bill

The Community Wood Grant Program funds shovel-ready projects to install thermally led community wood energy systems or build innovative wood product manufacturing facilities to support healthy forests and stimulate local economies by expanding renewable wood energy and innovative wood products manufacturing capacity. National focus areas include mass timber, renewable wood energy, and technological development that supports fuel reduction and sustainable forest management.[17]

Recommendation

- Reauthorize the program and increase or maintain funding at $25 million per FY.

TITLE X – HORTICULTURE

1. Plant Pest and Disease Management and Disaster Prevention & National Clean Plant Network (NCPN); 7 U.S.C. §7721

Sec. 10007 of the 2014 Farm Bill consolidated plant pest and disease management and disaster prevention programs and also created the National Clean Plant Network. The goal of these programs are to "prevent the introduction or spread of plant pests and disease that threaten U.S. agriculture and the environment […]. [The Animal and Plant Health Inspection Service] APHIS provides funding to strengthen

[17] US Forest Service. Accessed January 2023. https://www.fs.usda.gov/science-technology/energy-forest-products/wood-innovation

the nation's infrastructure for pest detection and surveillance, identification, and threat mitigation, while working to safeguard the nursery production system."[18] The main chunk of this funding provides an avenue for UC researchers to combat the spread of agricultural pests and to apply for the necessary equipment to do so. The 2014 Farm Bill significantly increased mandatory funding, providing $62.5 million in FYs 2014-2017 and $75 million in FY 2018 for a total of $325 million. Of this funding, $5 million per year is allocated to NCPN to accomplish its goal to provide disease-free and pest-free plants for specialty crop growers.

UC Riverside is home to the Citrus Clonal Protection Program (CCPP), which is part of NCPN. Since 2010, CCPP received over $4.4 million in NCPN funding from FY 2010-2016. The CCPP provides a safe mechanism for the introduction into California of citrus varieties from any citrus-growing area of the world for research, variety improvement, or for use by citrus enthusiasts and California citrus growers.[19] CCPP is playing a vital role in preventing the spread of HLB across California.

Similarly, UC Davis is home to Foundation Plant Services (FPS) and provides virus-tested, professionally identified grape, fruit and nut tree propagation stock and is home to the only dedicated grape importation facility in the United States, which processes through quarantine highly sought after foreign grape selections. Since 2010 FPS has received over $6 million in NCPN funding from FY 2010-2016.

Recommendations

- Increase mandatory funding levels for NCPN from $5 to $12 million per FY.
- Reauthorize Sec. 10007 and maintain mandatory funding levels of $75 million per FY.

2. Specialty Crop Block Grants; 7 U.S.C. §1621 note; §10107 of the 1028 Farm Bill

The Agricultural Marketing Service (AMS) Specialty Crop Block Grant Program (SCBGP) is designed to enhance the competitiveness of specialty crops. Each year, the California Department of Food and Agriculture (CDFA) submits a proposal to AMS to receive its allocated amount of pass-through funding for which California's universities are eligible to apply.

Recommendations

- Reauthorize SCBGP and maintain or increase mandatory funding of $85 million per FY.
- Maintain the existing funding formula for states in 7 USC §1621 note (b), which rightly favors California given California overwhelmingly produces the largest amount of specialty crops across the country. According to the 2017 USDA Census of Agriculture, of the roughly 15.7 million acres of specialty crops across the United States, 4.8 million are located in California, with only three other states over 1 million acres and the next closest state only reaching 1.5 million acres[20]. As a result of this formula, California received over $23 million, or more than 30% of total awards, in FY 2022.

TITLE XII – MISCELLANEOUS

1. National Animal Health Laboratory Network; 7 USC § 8308a; §12101 of the 2018 Farm Bill

The National Animal Health Laboratory Network (NAHLN) is part of a nationwide strategy that enhances the Nation's early detection of, response to, and recovery from animal health emergencies. This program addresses funding gaps in animal disease surveillance and response activities, which reduce the vulnerability of the U.S. food and agricultural system to accidental or intentional introduction of chemical

[18] APHIS. *APHIS-Farm Bill*. Retrieved from https://www.aphis.usda.gov/wps/portal/aphis/ourfocus/planthealth/sa_farm_bill.
[19] UC Riverside. (Jul. 2017). *Citrus Clonal Protection Program*. Retrieved from http://ccpp.ucr.edu/.
[20] 2017 Census of Agriculture. Specialty Crops. Retrieved from https://www.nass.usda.gov/Publications/AgCensus/2017/Online_Resources/Specialty_Crops/SCROPS.pdf

or biological agents. The NAHLN allows UC Davis to run the California Animal Health and Food Safety Laboratory System (CAHFS), which is the backbone of California's warning system that helps to protect the health of California's livestock and poultry. CAHFS serves the people of California by safeguarding the public health with rapid and reliable diagnoses for animal diseases including those affecting humans.

Recommendation

- Reauthorize NAHLN and increase the authorized funding of $45 million per FY.

2. National Animal Disease Preparedness and Response Program 7 USC § 8308b; §12101 of the 2018 Farm Bill

The National Animal Disease Preparedness and Response Program was created in the 2018 Farm Bill to support efforts to keep animal diseases from entering and spreading in the United States. This program allows APHIS to work with animal health partners on a coordinated effort to enhance prevention, preparedness, detection, and response to the most damaging foreign animal diseases to protect US agriculture.

Recommendation

- Reauthorize NADPRP and increase or maintain the authorized funding of $30 million per FY.

3. Farming Opportunities Training and Outreach (FOTO) Program; Beginning Farmer and Rancher Development Program; §12301 of the 2018 Farm Bill

The 2018 Farm Bill merged the Beginning Farmer and Rancher Development Program (BFRDP) and the Outreach and Assistance for Socially Disadvantaged and Veteran Farmers and Ranchers program under the umbrella of the Farming Opportunities Training and Outreach Program (FOTO). These programs have provided funding in California to support farms where several UC researchers have partnered and produced ground-breaking work related to healthy soils, organic transitions, food safety, and more. One of our partner farms, ALBA Farms, also has a program that helps to transition farm workers to farm owners and managers, many of whom are Latinx immigrants.

Recommendations

- Reauthorize FOTO and increase or maintain mandatory funding of $50 million per FY.
- Remove the matching requirement for BFRDP in part (b) paragraph 5.

4. Office of Urban Agriculture and Innovative Production; §12302 of the 2018 Farm Bill

The USDA Urban Agriculture and Innovation Production (UAIP) competitive grants was established by the 2018 Farm Bill. These grants initiate or expand efforts of farmers, gardeners, citizens, government officials, schools, and other stakeholders in urban areas and suburbs. Projects may target areas of food access; education; business and start-up costs for new farmers; and development of policies related to zoning and other needs of urban production.

Recommendation

- Reauthorize and increase or maintain the authorized funding of $25 million per FY.

5. Reauthorize and refund the Emergency Citrus Disease Research and Development Trust Fund; §12605 of the 2018 Farm Bill

The 1998 Farm Bill created the Citrus Disease Research and Extension (CDRE) program within SCRI to combat Huanglongbing (HLB; citrus greening), which is a bacterial disease spread by the Asian Citrus Psyllid. Citrus greening has been ravaging Florida’s citrus industry and has the potential to devastate Texas’ and California’s citrus industries as well. The 2014 Farm Bill re-created CDRE as the Emergency Citrus Disease Research and Extension program (ECDRE), and the 2018 Farm Bill funds the program through the Emergency Citrus Disease Research and Development Trust Fund (see also previous section in Title VII on CDRE/ECDRE). Congress provided $25 million per year for FYs 2019-2023 for ECDRE, for a total of $125 million. Since 2014, UC has received over $52 million in funding to conduct

research to combat citrus greening from the CDRE/ECDRE program.[21]

Recommendation

- Reauthorize and increase or maintain the authorized funding of $25 million per FY.

[21] NIFA. (Jun. 2022). *NIFA: Recent Awards*. Retrieved from https://portal.nifa.usda.gov/lmd4/recent_awards?report_title=Recent%20Awards&from_site=NIFA&search_label=Awards%20Listing.