

2019 FFAR VETERINARY RESEARCH FELLOWSHIP

Veterinary Student Research to Address Global Challenges in Food and Agriculture

Program Description

BACKGROUND

Veterinary medicine is critical to addressing global challenges that include food security, economic well-being and public health. Several of the U.N.'s Sustainable Development Goals (including No Poverty and Zero Hunger) are unattainable without livestock health programs and research. These programs have been marginalized and underfunded internationally, and in the U.S., funding trends have encouraged veterinary scientists to pursue biomedical research despite emerging issues that include major shifts in food animal production practices, population growth, climate change and emerging infectious diseases. Veterinary medicine will play a major role in solving each of these challenges; yet veterinary students have limited opportunities to gain experience in the research approaches that will be used to solve them.

What are the existing opportunities for students to explore the global challenges facing agriculture? These issues, and the scientific approaches to address them, are not taught as part of the veterinary curriculum. Veterinary students may gain extracurricular experience via intern or externships, graduate degree programs, or summer research programs. In the summer research programs, students perform 8-10 weeks of mentored research with an established Principal Investigator prior to participation in the National Veterinary Scholars Symposium (NVSS). Most students attend lab meetings and journal clubs with their advisors and other students across the College, and the NVSS is attended by over 600 scholars from close to 40 different schools. The summer scholars program is widely considered the highest value and visibility of all the veterinary student research opportunities. Importantly, it is possible for students supported by any funding source to participate in these activities, including the NVSS capstone.

An informal survey of Program Directors conducted by the Association of American Veterinary Medical Colleges (AAVMC) indicated that summer research training is one of the most important, and competitive, opportunities supported by the Colleges of Veterinary Medicine (CVM)s. In initial conversations with FFAR, several Program Directors have expressed strong support for the fellowship described here. In addition, several CVMs host students from underrepresented populations and/or schools, at once fostering the training of these students and enriching the experience for all students in the program.

CONCEPT DESCRIPTION

FFAR is proposing a new national-level program, Veterinary Student Research Fellowships to Address Global Challenges in Food and Agriculture, to provide support for veterinary students to pursue research related to issues that lie at the intersection of global food security and sustainable animal production. Eligible research topics would include novel approaches to control animal diseases that impact food security, sustainable intensification, gene-editing/precision breeding, socioeconomics, and advanced technologies or metagenomic/microbiome approaches to improving the health of animals and the people that care for them. Training in these areas would prepare students for a variety of important public service and research careers. Importantly, these Fellowships would fulfill a critical unmet need and provide an exciting opportunity for students looking to expand their skills and knowledge.

The Fellowships will complement USDA activities, which include an undergraduate experiential training program and a loan-repayment program for veterinarians working in rural areas of the U.S. NIFA recently announced that 187 regions in the United States currently suffer from shortages of livestock and public health veterinarians. The USDA does not have specific programs to support veterinary student research and strongly supportive of this initiative.

PROGRAM STRUCTURE

The Fellowships will provide 8-10 weeks of stipend support for up to 10 students per year (limit one student per school) to perform research with a qualified mentor, along with travel support to attend and present a poster or talk at the NVSS capstone. CVMs will be responsible for matching potential applications with a qualified mentor and/or selecting the most qualified student according to the program objectives described here. Only 1 student per CVM may be nominated to receive the Fellowship. Research need not be performed at the student's "home" University. Projects involving international are allowable if within the budget requirements.

RESEARCH AREAS SUPPORTED

- Diseases affecting livestock that are impacted by global challenges such as the alteration of existing ecosystems/agroecosystems, shifts in land-use, climate change, increased trade and movement of people or animals and civil unrest. Projects that focus on foreign animal diseases, including tick-borne diseases, are encouraged.
- Animal productivity/intensification.
- Socioeconomics, spatial analysis and computational modeling
- Novel tools, techniques and approaches applied to global agriculture.

Research not supported: This program does not support biomedical research/comparative medicine without a clear connection to the global challenges in food and agriculture as described above.

ELIGIBILITY

The program is open to students currently enrolled in a DVM or VMD degree program, including those in combined degree programs (e.g. DVM/PhD, DVM/MS or DVM/MPh). Students that have completed their veterinary degree or are enrolled in a residency program are not eligible for consideration. Students who are currently supported by a Federal grant (e.g. T32, F05, F30 or F31) are not eligible. Prior research experience is not necessary to apply.

The students' research project should be consistent with the scientific method, enabling the construction of a testable hypothesis, collection of data and description of results in an abstract or oral presentation. Both clinical and laboratory-based projects are eligible for support, however clinical or fieldwork type experiences that do not involve testing a specific hypothesis and data collection as the primary activities will not be supported. Use of innovative tools and technologies (e.g. computational models, metagenomics, high-throughput sequencing) is strongly encouraged. Students may perform their research at any U.S. or international non-profit institution, education institution or for-profit company given that the research environment and mentor are appropriate for the described activities.

SELECTION OF STUDENTS/MENTORS BY THE CVM

CVMs are expected to announce this opportunity to appropriately qualified students and mentors. Acceptable methods for publicizing the opportunity include email, college/departmental newsletter, presentations to veterinary classes, etc.

CVMs must select only one student/mentor per year for nomination. CVMs are encouraged to consider students and mentors from historically underrepresented backgrounds in veterinary medicine. We strongly encourage the CVM to consider the secondary evaluation criteria as they make their selection.

FUNDING REQUIREMENTS

Funding for approved proposals must be used within the calendar year provided. FFAR funds are provided at the start date of the award and must be used specifically for the designated student's stipend and travel, not for equipment or supplies. Any remaining funds at the end of the calendar year must be returned. Funds may be used to support student stipend and travel. Each CVM must match the request from FFAR 1:1 using non-Federal funds and specify the source of funding in the budget narrative section of the proposal.

TIMELINE

Institutions and other organizations will submit nominations in the spring. Final selections will be made in accordance with AAVMC's normal review processes, with input from FFAR. These steps will be conducted in a timely manner to allow institutions and students sufficient time to prepare for and participate in the program.

PROPOSAL SUBMISSION MATERIALS

Please answer only the questions provided and submit one pdf electronically to: tmashima@aavmc.org

For CVM Program Directors:

1. How does the proposed research address global challenges in food and agriculture? (200 words)
2. Institutional Environment and Associated Activities:
It is expected that CVMs will offer selected students the opportunity to participate in extracurricular activities such as journal clubs and meetings, research seminars, training workshops, etc. Integration with National Veterinary Scholars program activities is encouraged. Additional funding will not be provided for extracurricular activities. Please describe extracurricular activities (200 words).
3. How was the student/mentor pair selected? What makes the student unique? (200 words)
4. Will the student be expected to travel and if so, what safeguards have been taken in the off chance that an unanticipated issue arises? (200 words)
5. Please describe the amount and source of non-Federal matching funds (Donor Pledge Form, please see Attachment B).
6. Signature of Authorized Organization Representative (Match Certification, please see Attachment B).
7. IACUC/IRB approval number

For Students and Faculty Mentors:

1. Describe the research hypothesis and objectives. (200 words)
2. What methods will be used to collect data? (200 words)
3. Where will the research be conducted? Describe the faculty mentor's lab and/or other partners, resources and work environment. If other (200 words)
4. How will this project contribute to addressing global challenges in food and agriculture? (200 words)

5. What is the target population? If human subjects are involved, will the student be trained in culturally appropriate methods to reach the target population and does the faculty mentor have IRB approval for the project?
6. What are the potential pitfalls or risks? If the project fails or does not yield the expected outcome, what are the potential benefits or lessons learned? (150 words)
7. What else should the review committee know about the student, faculty mentor and/or proposed project?

Students will be expected to submit a two-page final report on their project and their experience in the program at the conclusion of the work.

SUGGESTED PRIMARY REVIEW CRITERIA FOR PROGRAM DIRECTORS

- Is the proposal relevant to the RFP?
- Do the proposed activities address an important problem or need in food and agriculture systems?
- Will the proposed activities enable the veterinary student to contribute meaningfully to a research project and gain exposure to challenges in food security, global public health, etc.?
- Does the faculty mentor have a track record of success in research and mentorship?
- Is the project conceptually sound?
- Are the approaches and/or techniques innovative?
- Are the proposed objectives and activities feasible within the duration of the award?
- What are the expected outcomes for the project and the student?
- If applicable, are the target population and culturally appropriate methods to reach the target population clearly described?
- Does the project leverage partners and resources to maximize the reach of the proposed budget and activity? Does the program leverage and complement other non-federal funds?
- How likely is the proposed project to break new ground to address an old or a new problem?

FFAR and AAVMC SECONDARY EVALUATION CRITERIA

- Will the scientific and educational environment of the proposed research education program contribute to its intended goals?
- Is there tangible evidence of institutional commitment from the applicant organization and its collaborators/partners demonstrate the ability to provide support for the proposed work?
- Is there tangible evidence of institutional commitment from the applicant organization demonstrating a meaningful commitment to promoting diversity and inclusion in agricultural and veterinary research?
- Does the described role of each collaborating organization make it clear that each organization adds value to the project and is committed to working together to implement the project?
- Is the appropriate infrastructure already in place?
- Does the applicant provide evidence of compelling project progress of the already-funded project? If not, has the applicant addressed obstacles and strategies to overcome those obstacles?
- Is the organization structurally and financially stable and viable?
- Are there feasible plans to sustain some or all the project beyond the funded timeframe of this award?
- Is there a plan to take advantage of the research environment to enhance the educational value or outcomes of the project?
- Is there evidence that the faculty have sufficient institutional support to create a sound educational environment for the participants?

- Where appropriate, is there evidence of collaboration and buy-in among participating programs, third-party organizations, and industry groups?
- Does the proposal demonstrate that the project personnel would have adequate resources (for example, institutional support, equipment and/or other physical resources) to conduct the proposed research or associated activities?
- Will the project benefit from unique features of the work environment or collaborative arrangements?
- How well qualified is the faculty mentor to conduct the proposed activities?
- Are the institutional support, equipment and/or other physical resources available to the project personnel adequate for the project proposed?
- Are there adequate protections in the proposed project against the potential risks? Did the applicant clearly describe these protections in the application?
- What are the potential benefits to the student and others participating in the project?
- How important is the knowledge to be gained from the experiment?

BUDGET

Total FFAR Funds Available: \$250,000.00

Sponsors (TBD): \$250,000.00

Total: \$500,000.00

Total students per year: 10-12 students per year, for 5 years (2019-2023)

Per Applying Organization:

May nominate 1 student per year.

\$4,000 request from FFAR, subject to 1:1 matching funds from non-Federal sources.

Includes: Stipend (calculated according NIH predoctoral stipend level
 Travel allowance to attend NVSS (approximately \$1,500.00)
 Overhead (\$500) for CVMs to administer selection and programmatic activities

For More Information Please Contact:

Timothy Kurt, DVM, PhD

tkurt@foundationfar.org

office: 202.836.9960

mobile: 202.816.1884

Attachment B – Matching Funds Certification

Grantee Information	
Name	
Project Title	
Effective Date	
End Date	
PI Full Name	

The Grantee agrees to identify and certify matching funds annually prior to disbursement of award funds. At least fifty (50%) of the required matching funds must be Cash Match, while the remainder can be In-Kind Match. The match share is intended to supplement, not supplant existing funding for the principal investigator (PI). The Grantee will abide by FFAR's [Matching Guidelines](#) to meet FFAR's matching requirements. To constitute a valid match, all matching funds on a FFAR grant must be expended during the grant period.

The Grantee must submit the Matching Certification, and Matching Funder forms, before FFAR can disburse the next tranche of the award payments. All supporting documentation must be submitted through FFAR's online [grants management system](#). The reporting will include uploading documentation demonstrating obligation and use of matching funds equal to use of FFAR award funds for a reporting period. Failure to complete reporting requirements on time may result in withholding, and potentially withdrawal, of future FFAR award payments, or exclusion from consideration of future research proposals.

CERTIFICATION

By signing below, You acknowledge receipt of FFAR's matching guidelines, and further acknowledge You have read, understand, and accept FFAR's matching requirements for the Memorandum of Understanding for the Conference on Connections Between Soil Health and Human Health. By award payment date, You will have secured non-Federal matching funds in the amount of **[\$insert amount]**, to match FFAR's award amount of **[\$insert amount]** for the budget period of **[MM/DD/YYYY]** to **[MM/DD/YYYY]** and spend them in tandem with FFAR's funds as set forth in the award Agreement.

Organization Name: _____

Authorized Organization Representative (AOR): _____

AOR Signature: _____

Date: _____

Attachment C - Matching Details Form

Grant Information	
Project Title	
Effective Date	
End Date	
PI Full Name	
Matching Funder and Contribution Information	
Funder Legal Name	
Funder Address	
Funder Phone	
Total Cash Match	[U.S. Dollar amount]
Total In-kind Match	[Value in U.S. Dollar amount]
Total Match Donated	[Cash + In-kind U.S. Dollar amount]

Will the match funder make the total committed match during the performance period of the award?

Is the award recipient free to allocate cash match contributions as necessary for the proposed project activities? If no, please specify any restrictions on the donated cash match.

Has your organization formally approved the Cash Match amount and purpose?

Yes
 No
 _____ Date of Approval
 _____ N/A

For in-kind match contributions, if applicable, how were the values for each donated cost determined. The value for in-kind match contributions must be based on the fair market value for a similar good or service.

PUBLIC REPORTING

The Agricultural Act of 2014, commonly referred to as the Farm Bill, requires FFAR to report all funded projects in its annual report. This reporting includes information about the proposal, the Grantee and PI's names, proposal abstract, total FFAR awarded amount, and matching funder(s) and their contributions, on FFAR's website and in press releases, newsletters, annual reports, speeches, congressional reporting, fundraising activities, and other public disclosures. In addition, we may publish reports on the Grant or other activities undertaken pursuant to the Grant, briefly describing its accomplishments and results. We may also respond to legitimate business inquiries with factual information regarding the existence and purpose of the Grant, disclose such information to satisfy any reporting obligations, or as required by applicable law or regulation.

By providing matching support for the above referenced Grant, you (the above listed matching funder) gives consent and permission to FFAR to use your name, logo, and total matching support amount when reporting on the Grant. FFAR will discuss potential public communications activities with you in advance of such communication. FFAR's Communications Team will contact the matching funder Press Contact listed below, or such other contact as you may provide from time to time. Neither FFAR nor the matching funder shall use the name or logo of the other in any public announcement, press release, advertising or other public disclosure without prior written consent, unless required by applicable law or regulation, and will provide notice ten (10) days in advance for review prior to final editing or any such disclosure.

FFAR Press Contact

Name: Sarah Goldberg

Title: Director of Communications

Phone: 202-624-0704

Email: sgoldberg@foundationfar.org |

Matching Funder Press Contact

Name:

Title:

Phone:

Email: |

In all public statements concerning FFAR, you should refer to it by its full name: Foundation for Food and Agriculture Research. In all public statement concerning the Matching Funder, FFAR

shall refer to you by your full name listed above, and refer to the PI by his/her full name, [full name of PI].

Nothing contained in this form shall be construed in any manner to imply or create a relationship between FFAR and the matching funder as partners, joint ventures or agents, or as an endorsement by FFAR of any entity, organization, company or individual, nor the products, actions, behavior or conduct of any entity, organization, company or individual. The matching funder herein shall not act in any manner as our agent or representative and FFAR shall not act in any manner as your agent or representative. Any negligent or intentional misrepresentation by you to the contrary, in any context and in any forum, is prohibited.

Matching Funder Name: _____

Authorized Organization Representative (AOR): _____

AOR Signature: _____

Date: _____