WKU OFFICE OF INTERNATIONAL PROGRAMS

International Activities Grant (IAG) Proposal Template

Application Checklist:

☒Completed Cover Sheet (this page)
☐ Departmental and Dean Approvals (this page)
☒ Project Proposal (next page)
☒ International Travel Grant Budget Table (page three)

Submit within 30 days after return to WKU:

☐ International Travel Grant Final Report
☐ 5-8 high quality photos
☐ Follow-up project (date of completion tbd)

APPLICANT INFORMATION			
Name of P.I. :	Natalie Jones Mountjoy	Project/Event Title:	International curriculum development for general biology lab (BIOL 121)
Name of Co-P.I.:	Click here to enter text.	Total Amount Requested from OIP:	$2,000.00
Date of Project/Event:	December 29th – January 15th	Expected Time Frame for Use of Funds:	December 29th – January 15th

SIGNATURES

Electronic signatures <u>are</u> accepted
When submitting the final application, the PI/APPLICANT <u>must</u> copy all signatories on the email or the application will be considered invalid.

DEAN APPROVAL (Requests over $500)	By signing below, I acknowledge my support for proposed project and budget. Sign/type here: _Cheryl Stevens_____October 15, 2018___ **Dean's Signature** Date ☒ Electronic Signature Verification (Checking the box and typing name serves as verification of the electronic signature)
DEPARTMENT APPROVAL	By signing below, I acknowledge my support for proposed project and budget. Sign/type here: Bruce A. Schulte_____10/15/2018_____ **Department Head's Signature** Date ☒ Electronic Signature Verification (Checking the box and typing name serves as verification of the electronic signature)

INTERNATIONAL ACTIVITIES GRANT PROPOSAL TEMPLATE			
TRAVEL INFORMATION			
City/ies	**NAIROBI, VOI, KASIGAU**	**Country/ies**	**KENYA**
Travel start date:	**DECEMBER 29TH**	**Travel end date:**	**JANUARY 15TH**
Select one primary reason for traveling abroad:			
☐ **Research abroad**			
☐ **International conference participation, name of conference:** Click here to enter text. ☐Attending ☐Presenting			
☒**Other**, please specify: I am leading the Department of Biology's initiative to increase inquiry- and problem-based learning in our general biology lab series for our majors. As part of this initiative, I am seeking financial support to develop an international curricular integration module in our Biology 121 Lab: Cells, Metabolism and Genetics (BIOL 121). Students currently study genetics at the end of each semester using simulated material without hypothesis testing or research goals. The new curriculum, which will be required, will involve the same molecular techniques, but now learned via a real-world, research-based, service learning project connected to the Kasigau region of southeast Kenya. This new module will be a 3-week experience involving DNA analysis of meat samples purchased in and around Kasigau, a region with which our department has been heavily involved for more than a decade. **Necessary Background.** The bushmeat crisis, wherein wildlife is poached from the "bush" and used as a food source, has been well-documented in West Africa as a commercial enterprise, threating both human health[1] and biodiversity.[2] However, the commercial practice is not well-documented in Kenya. While snaring and bushmeat consumption is known to occur in Kasigau,[3] part of the Tsavo National Park wildlife corridor in Kenya, it is impossible to know if the practice has become commercialized without genetic testing of the meat sold in local butcheries, as differences between domestic meat and bushmeat species are not discernable by sight. Knowing when and if bushmeat has entered the market can serve as an early warning for conservationists working to protect Kenya's wildlife and for the Kenyan people who are reliant on wildlife tourism as a large part their country's overall GDP.			
Please include any additional reasons for traveling abroad: Click here to enter text.			

[1] Wolfe, N. D., Daszak, P., Kilpatrick, A. M., & Burke, D. S. (2005). Bushmeat Hunting, Deforestation, and Prediction of Zoonotic Disease. Emerging Infectious Diseases, 11(12), 1822–1827. http://doi.org/10.3201/eid1112.040789.

[2] Brashares, J. F., Arcese, P., Sam, M. K., Coppolillo, P. B., Sinclair, A. R. E., & Balmford, A. (2004). Bushmeat Hunting, Wildlife Declines, and Fish Supply in West Africa. Science, 12, 1180-1183.

[3] Kenyan Wildlife Service. Tsavo Conservation Area Management Plan 2008- 2018. http://www.kws.go.ke/sites/default/files-/parksresorces%3A/Tsavo%20Conservation%20Area%20Management%20Plan%20%282008-2018%29.pdf

GRANT APPLICATION QUESTIONS:

1. State clearly how this project will meet any of the seven priorities listed in the IAG RFP.

Priority 1: Proposals with clear, measurable outcomes as to how the proposed activities would advance University strategic internationalization goals and benefit the home department or college - This proposal would advance University strategic internalization goals by greatly increasing student participation in international education. Approximately 300-350 students take BIOL 121 each semester (the course in which this new module will be placed), which fulfills the Science/Mathematics D.1. general education requirement and the Colonnade requirement 1C. Additionally, I am confident the new international component, based in research and service learning, will benefit the Department of Biology by increasing student retention and recruitment into our upper-level international courses. Each of these measurable outcomes will be analyzed as implementation occurs.

Priority 2: Proposals with feasible and appropriate plans to share knowledge gained from visit with relevant University stakeholders - The knowledge gained from my visit will have a direct impact on WKU's most important stakeholders; our students. In the new 3-week lab module, students will participate in both international research and service learning. Working with local conservation groups in the area (e.g., Wildlife Works,[4] Earthwatch[5]) students will monitor the meat sold in local butcheries for the presence of illegal bushmeat. They will complete pre-lab activities intended to broaden their understanding of Kenya and the Kasigau region, the Taita people, who comprise the major ethnic group in the area, and the conservation organizations with whom we will work. These activities will include watching videos and interviews, reading scientific and grey literature, and formative and summative assessments. Students will also research the molecular techniques to be used in each lab and participate in "online" simulations of each activity before preforming them in the lab. Each lab group will receive one meat sample from Kenya to take through the species identification process. Finally, each group will add their results to our online bushmeat database and write a "research note" on the process, their results, and a self-reflection. These data, collected semester-by-semester, will serve as an early warning sign of increased poaching or bushmeat hotspots in the area. Governmental groups, like the Kenyan Wildlife Service, and non-governmental groups such as Wildlife Works, can then use these data to strategize targeted responses in the communities where they operate. Further, this long-term international research project may lead to publishable results of which the students can be a part.

Priority 3: Proposals that would take a faculty member to a partner institution of strategic priority - This proposal will expand current collaborations with the University of Nairobi, with whom we have a Memorandum of Understanding.

Priority 4: Proposals with projects or activities that serve as a springboard for new or are a continuation of existing internationalization initiatives: This new project builds on existing internationalization initiatives in the Kasigau area including Dr. Nancy Rice's "Medicine in Kenya" program, Dr. Bruce Schulte's study of "Human-Elephant Conflict and Climate-Smart Agriculture," and an earlier conservation projects completed by Dr. Michael Stokes, of which I took part from 2005-2007. Additionally, Kenya was selected for our "Year Of…" in 2020-2021, and this project will allow for additional connections between the Kenya and our biology curriculum that can highlighted in various ways as part of this initiative. It is also possible that this new international module might eventually serve as an introduction to a new international course offering (please see number 2, Activity 5).

2. What activities will be pursued and what are the intended outcomes? Be specific as possible.

Activity 1- Collection of materials to establish a sense of place. To be successful, this new module must immerse our students in the region. I will collect video, recordings, photos, and interviews throughout my trip to create a sense of place, and bring Kenya, its people and its wildlife, into the lab setting. I am currently working with an online platform to host these materials to be set-up as pre-and-post lab experiences for our students as they

[4] Please visit https://www.wildlifeworks.com/kenya, for more information.

[5] Please visit https://earthwatch.org/Scientific-Research/Our-Scientists/Bruce-Schulte, for more information.

work through the molecular protocols in the lab. These connections are vital to ensure our students understand the validity of our research questions and the service component.

Activity 2- Re-introduction to the community and re-establishment of existing professional and personal relationships. As a graduate student in biology at WKU, I traveled to Kenya four times and spent nearly six months in the Kasigau area. I have worked with the Kenyan Wildlife Service and faculty, staff and students at the University of Nairobi. I have visited Wildlife Works and the ranch on which they operate. I helped locate and build our first research station on a community-owned ranch bordering Tsavo National Park. I helped organize community meetings and the initial stages of what is now known as the Kasigau Basket Trust. I have spent months living and working within the villages of the area, and I am familiar with the largest commercial center, the city of Voi, where we will be buying meat samples. However, the rate of change in the developing world is extreme. It is therefore imperative for me to reacquaint myself with the community. On this trip, I will reestablish several personal and professional relationships with members of the Kasigau community and Wildlife Works and I will initiate new relationships with the University of Nairobi, Kenyan Wildlife Service, and Earthwatch.

Activity 3- Collection of meat samples from local butcheries. While in Kasigau, I will purchase approximately 100-150 meat samples for use in the new module. I will visit butcheries in Voi, the five villages surrounding Mt. Kasigau, and two other villages on the periphery of the area. I have already applied for the proper permitting required to import these samples back into the United States and I am due to receive the necessary labels for customs from the USDA in four weeks. These meat samples will then be sequenced to species by students in BIOL 121 over the next 3-4 semesters as part of the new international module.

Activity 4- Investigation of a potential partner module for another general biology lab: BIOL 123. Our general biology labs are broken into two partner courses: BIOL 121- Cells, Metabolism and Genetics, and BIOL 123- Ecology, Evolution and Diversity. Ideally, this module for BIOL 121 would be paired with a complimentary module in BIOL 123. During this trip I will investigate possible research topics for this potential module, perhaps in partnership with Wildlife Works, or with Earthwatch.

Activity 5- Investigation of the potential for a study abroad course to be offered as an extended learning opportunity for students following exposure in BIOL 121 (and potentially BIOL 123). Looking ahead for expansion opportunities, I would like to investigate the possibility of offering an in-country international course, similar to Dr. Nancy Rice's Medicine in Kenya program, to partner with this new module. In such a course, students could collect the meat samples to be used in the BIOL 121 course each year, and potentially be involved in the research component for the partner module in BIOL 123 as well. While I am in Kenya, I will explore this opportunity further, with an understanding that implementation of a such a course would likely be a few more years in the future.

3. How will this travel impact you professionally as it relates to internationalizing research, teaching and/or University/departmental outreach?

As a pedagogical faculty member, my primary professional mission is to improve the biology major student experience, leading to higher student outcomes and increased retention. This new module will not only serve as a springboard, but as a paragon of what is possible through high impact teaching practices and international experience. Additionally, this module may generate publishable manuscripts regarding the bushmeat trade and/or the effectiveness of these types of pedagogical initiatives (e.g., learning gains, retention, etc.).

4. How will this travel impact WKU's internationalization efforts and your department in regards to research, teaching, curriculum enhancement, student learning outcomes, etc.?

As a graduate student at WKU, I conducted my thesis work in Kasigau, including DNA analysis of meat samples. My international travel and research were a foundational experience and shaped the scientist and professional I have become. I firmly believe such exposure could have similar impacts on our undergraduates. Currently, the Kasigau region provides excellent opportunities for a select few undergraduate and graduate students in our department. This project will allow all our undergraduates to experience the region and the learning gains that come with an international curriculum. Additionally, they will benefit from the high impact practices of research and service learning in the classroom. I am confident this program can increase student learning and performance in BIOL 121, increase student retention within the Department of Biology, and increase recruitment

into our other international programs and potentially into our graduate program. I firmly believe this will be the start of fuller international integration into the entire biology curriculum. We know students learn better through high impact practices like research, inquiry and service learning, I have developed this type of curriculum in the past and I am excited to begin this work at WKU.

5. Please select one of the following as part of your follow-up project upon return to WKU: (Please consult with OIP to discuss details on implementing the follow-up project.)	
☐ Serve on OIP's internationalization grants review committee.	☐ Serve on upcoming International Education Week Planning Committee.
☐ Plan/offer an event with an international focus.	☐ Plan an event during International Education Week.
☒ Integrate international content into courses.	☐ Schedule a Study Abroad Student Rep. to present in your classes and/or attend a student organization meeting (if you serve as a faculty advisor).
☐ Other, please specify: Click here to enter text.	

International Travel Grant Budget Table

Have you received funding from OIP in the last two years? ☒ No ☐ Yes	**If yes, list the amount/year(s) awarded:** Click here **What outcomes resulted from your previous award(s)? Justify how this current request advances your previous or current international scholarship or launches a new, different initiative that aligns with your long-term professional goals.** Click here

Cost-share Source(s): List department, college, University, or outside sources of monetary support.

Source:	Department of Biology	☐Pending, Date of funding notification: Click here to enter a date. ☒Confirmed	$ 600.00
Source:	Ogden College	☒Pending, Date of funding notification: 11/15/2018 ☐Confirmed	$ 1,000.00
Source:	Click here to enter text.	☐Pending, Date of funding notification: Click here to enter a date. ☐Confirmed	$ Click here to enter amount

***NOTE FOR EXTERNAL FUNDING:** For external grants, attach with this application a letter from organization or copy of submitted grant. For any other sources outside of the University, please provide contact information (email and phone number) of funding source: Click here to enter text.

USE OF FUNDS

For questions on how to complete this table, please contact internationalization@wku.edu, 745-3036.

ITEM	AMOUNT REQUESTED from OIP	COST SHARE (Cost share by other funding sources is required)	For each item, please provide a detailed explanation and justification for each project expense.
Flight	$1,000.00	$ 600.00	Depart December 29th. Return January 15th.
Lodging	$ 1,000.00	$ 90.00	Silver Springs Hotel in Nairobi Afrika Pearl Spa in Diani Beach Manyatta Camp in Tsavo National Park / Voi
Ground transportation (taxi, bus, and train)	$ 0	$ 100.00	Transportation to butcheries to purchase meat samples = estimate $20.00/day for 5 days
Mileage (Click here for rates)	$ 0	$ 0	
Per Diem (For Foreign Subsistence Rates, click here)	$ 0	$ 395.00	Per diem ($79/day) for five days away from group for partnership meetings and bushmeat collection.
Miscellaneous	$ 0	$ 415.00	Per diem allowances for guides, chaperones, etc. while buying bushmeat samples.
Total Amount Requested from OIP/Cost Share (May not exceed $2,000)	**Total amount requested from OIP:** **$** 2,000.00	**Total amount from Cost Share:** **$** 1,600.00	
Combined Total Costs	**$ 3,600.00**		