



## Research and Innovation Fellowships for Agriculture: Brazilian Amazon Biodiversity Fellowships

The Research and Innovation Fellowship for Agriculture (RIFA) offers early-career professionals enrolled in agricultural and development-oriented graduate programs at **all University of California campuses** the opportunity to plan, engage and implement two to six-month-long international projects in developing countries.

There are only **8 Amazon Biodiversity Fellowship positions left!** These fellowships are a special RIFA opportunity co-developed by the USAID Brazil Mission with the UC RIFA program. Fellows will work with Brazilian research and conservation organizations for 2-6 months in the priority areas of:

1. Biodiversity conservation in protected areas of the Amazon.
2. Biodiversity conservation on Amazonian indigenous lands.
3. Enhancing the use of science in biodiversity conservation policy.

The project descriptions for the 2017 Brazilian Amazon Biodiversity Fellowships are included in this document.

RIFA Fellows collaborate with a host institution in the country they are working to develop robust projects that address global challenges in agriculture and food systems. Host organizations define the available opportunities and a fellow's collaborative work contributes integrally to the success and sustainability of ongoing projects and programs. Faculty mentors at the University of California also play an integral role, serving as resources and helping guide Fellows in their projects. RIFA is funded primarily by the United States Agency for International Development's [Global Development Lab](#) and by the University of California's [Global Food Initiative](#).

The application period for current Brazilian Amazon Biodiversity Fellowships is open and will be filled on a rolling basis. All UC graduate students are eligible to apply.

Don't miss this opportunity for funded international research or practice-based projects in one of the world's most biodiverse and ecologically important areas!

For more information, visit: [ip.ucdavis.edu/scholars-and-students/RIFA](http://ip.ucdavis.edu/scholars-and-students/RIFA).

**Project Title:** Monitoring forest value chains in the Uatumã's Sustainable Development Reserve

**Project Country/Countries:** Brazil, states of Amazonas

**Host Organization:** Idesam - Institute for Conservation and Sustainable Development of Amazonia

**Project Description:**

Since 2006, Idesam has supported income generating activities and the social organization of the Uatumã's Reserve, which is located at 300 km northeast from Manaus, the capital of the Amazonas state, Brazil. The activities supported are: legal timber extraction, management and commercialization of non-timber forest products (NTFPs) and the implementation of agroforestry systems.

The project propelled seven small-scale forest management plans within the Reserve and regulated the timber extraction that occurs in the Uatumã's Reserve. Also, the project established rules for the use and extraction of non-timber forest products (NTFPs) by local residents, as well as supported the commercialization of these products.

The third project's activity is to convert degraded areas into agroforestry systems under a GHG offset action, Carbon Neutral. This action quantifies and converts GHG emissions from customers to an equivalent number of trees to be planted and sequester CO2 with the goal of offsetting emissions. Customers are mostly companies, event organizers and individuals interested in offsetting their GHG emissions. The activities to be carbon neutralized are related to high electricity and fuels consumption, such as flights, other types of transportation, lodging, etc.

Currently, there are 23 agroforestry systems implemented in the reserve. Annually, these agroforestry systems are monitored by a forest inventory to verify the tree growth. It is necessary to assess the growth rates and carbon absorption projections of the agroforestry systems. The fellow will contribute by performing the annual forest inventoring, evaluating the growth rates of the 23 agroforestry systems and adjusting the agroforestry systems growth projections.

**Work Environment:**

The fellow will engage in the field work in the Uatumã's Reserve, located at 300 km northeast from Manaus, the capital of the Amazonas state. Also, the fellow will perform office work at the Idesam's office in Manaus.

**Desired Skills of Fellow(s):**

- Forest inventory knowledge
- Data analysis knowledge
- Agroforestry systems knowledge

**Language Required:** Portuguese, professional working proficiency desired, but project dependent.

**Number of Fellows Sought:** 1

*Has this position been filled? No*

**Desired Length of Fellowship:** 3-4 months, no month preference

**Main Point of Contact:** André Vianna

**Email:** [andre.vianna@idesam.org.br](mailto:andre.vianna@idesam.org.br)

**Website:** <http://www.idesam.org.br/?lang=en>

**Project Title:** Collaborative Research at the Amazon Environmental Research Institute (IPAM)

**Project Country/Countries:** Brazil, Brazilian Amazon

**Host Organization:** Instituto de Pesquisa Ambiental da Amazônia (IPAM)

**Project Description:**

IPAM is a scientific, non-governmental and non-profit organization, which has been working for more than 20 years for the sustainable development of the Amazon. We are currently managing 35 projects, funded both by international donors and the federal government. Efficiency and control in administrative management is an institutional priority. We have therefore invested substantial resources towards good governance (to minimize risks), a shared service concept (to maximize efficiency) and sound institutional development (to achieve long-term sustainability). Since the creation of the Institute, we have received grants to conduct environmental research and promote the sustainable development in the Amazon region.

There are three possibilities of work with RIFA students:

i) sustainable rural settlements initiative, where the focus is the implementation of sustainable agriculture and the improvement of market access in Pará state

ii) sustainable cattle ranching in Acre state

iii) Savannization fire experiments in Tanguro farm, an experiment with controlled fire in tropical areas developed by scientists from the Environmental Research Institute of Amazonia (IPAM) and the Woods Hole Research Center (WHRC).

i) The Project Sustainable Settlements in the Amazon brings together the Amazon Environmental Research Institute (IPAM), the Live Produce and Preserve Foundation (FVPP), the National Institute of Colonization and Agrarian Reform (INCRA) and several local institutions in the development of a new production model to be adopted by agrarian reform settlements in the Amazon.

The challenge consists in consolidating an agrarian reform policy that is economically viable, environmentally sustainable and socially fair. Increased productivity in deforested areas combined with activities of forest management, payment for environmental services and environmental land use regulation, allows harmony between forest protection and agriculture and livestock activities.

Benefiting ,700 families distributed in settlements among the project's area of influence, in the Lower Amazon, BR-163 and Transamazon highway regions. All activities happen in close partnership with representatives from settler families and specialists from different fields of knowledge.

With support from the Amazon Fund, the PAS Project contributes to the fulfillment of the social, economic and environmental potential of family production in settlements of agrarian reform in the Brazilian Amazon. Information and experiences gathered with the project can serve as the bases for a new development model for family production in a low carbon economy.

ii) The sustainable cattle ranching initiative has as main goal to provide background information for Acres' Incentive Program for Environmental Services (SISA) concerning the cattle ranching intensification subprogram. The project builds different scenarios economic income of cattle expansion according to percentages of pasture area to be intensified. The goal is to demonstrate that intensification can be profitable and must be associated to a control of credits in order to minimize the threats of an increase of income that can provoke even more deforestation.

iii) Finally, The “Savannization” is the largest experiment with controlled fire in tropical areas of the world and is developed by scientists from the Environmental Research Institute of Amazonia (IPAM) and the Woods Hole Research Center (WHRC). Last week the researchers took one more step ahead of the work. The research takes place in an area of 150 hectares on the Tanguro farm in northeast of Mato Grosso, owned by André Maggi Group.

The experimental area was divided into three plots of 50 hectares each. One is never burned. Another 50 hectares are burned only once every three years. The remaining 50 hectares are burned annually to obtain data for research. Before firing, the researchers collect various types of information such as tree species, size and abundance, forest structure, combustible material in the ground (stems and leaves) and also on some groups of animals (insects and small mammals). After the fire, all this information is collected again so they can compare how the environment reacts to fire. The local temperature and humidity are also monitored before and after the fire to detect changes in the microclimate of the forest.

Deeper details on these projects should be obtained directly with the project managers.

**Work Environment:**

The fellow will interact with IPAM team in order to analyze and contribute to ongoing projects both in the field as well as office work. The regions of work can be Acre or Mato Grosso state, depending on the topics chosen.

**Desired Skills of Fellow(s):**

Agronomist, biologist, forestry; ecologist or rural scientist; interested in innovative initiatives; Portuguese, or at least, Spanish speaker.

**Language Required:** Portuguese or Spanish, limited working proficiency

**Number of Fellows Sought: 1**

*Has this position been filled? No*

**Desired Length of Fellowship:** 3-4 months, August-December

**Main Point of Contact:** Raissa Guerra

**Email:** [raissaguerra@gmail.com](mailto:raissaguerra@gmail.com)

**Website:** [www.ipam.org.br](http://www.ipam.org.br)

**Project Title:** Training Park Guards in the Brazilian Amazon

**Project Country/Countries:** Brazil

**Host Organization:** Equipe de Conservação da Amazônia (Ecam)

**Project Description:**

The proposed opportunity is embedded within Ecam's Park Guard training program which has trained over 600 park guards in the last ten years. The program is implemented in partnership with the Brazilian Parks Agency (ICMBio) and the Federal University of Amapa. The focus of the program is to provide a professional course based on the foundations set out by the International Ranger Federation for local populations in the Brazilian Amazon. Even though more than 20% of the Brazilian Amazon is covered by national and state protected areas, Brazil has no official federal park guard (ranger) force. Park management is often the responsibility of environmental analysts who live in the nearest urban centers.

The objective of the program is to train local peoples who live nearby protected areas to become park guards and then to help place them within professional positions. By involving local populations who live in the region in the protection of local biodiversity the program strengthens the role of protected areas while helping to provide opportunities for income generation and professional advancement.

The program is planning two park guard courses of 23 days each in the months of August and October of 2017 in the state of Amapa in the northern Amazon. Part of the course is implemented in the city of Amapa as well as in adjacent protected areas. A wide variety of professionals from the region are involved as instructors. A full course description (in Portuguese) can be found at the following web address:

**Work Environment:**

The program has an office in the city of Amapa. The work will be concentrated in the state of Amapa and will involve extensive field visits to protected areas in the region. Potential Fellows will engage in extensive field work during the training courses as well as both office and urban areas work involving developing a curriculum, working with instructors and students as well as partner outreach.

**Desired Skills of Fellow(s):**

- Ability to engage with different members of the public and specifically those involved in protected areas activities.
- Excellent skills in team work.
- Ability to deal with unexpected situations and low comfort levels.
- Knowledge of sustainable forest management practices, conflict resolution and ecotourism activities a plus.

**Language Required:** Spanish (professional working proficiency)

**Number of Fellows Sought:** 2

*Has this position been filled?* **No**

**Desired Length of Fellowship:** June - Nov 2017, park guard training courses in Aug & Oct

**Contact this Organization:**

**Main Point of Contact:**

Vasco M. van Roosmalen

**Email:**

**Website:** <http://www.equipe.org.br/>

**Project Title:** Payment for Ecosystem Services Project

**Project Country:** Brazil/Brazilian Amazon

**Host Organization:** Instituto de Pesquisa Ambiental da Amazônia (IPAM)

**Project Description:**

Despite the great achievement to reduce Amazon deforestation, since 2015 the annual rate of deforestation increased again (INPE 2016). This increase seems to be linked primarily to land grabbing (“grilagem”) of public lands, deforestation in rural settlements, and deforestation on private properties – which together continue to drive significant cumulative deforestation at a rate of ~5,000km<sup>2</sup> yr<sup>-1</sup>.

The state of Mato Grosso alone accounted for 34% of Amazon deforestation since 1988 (PRODES, INPE). It also contributed to Brazil’s reduction in deforestation after 2005 (Figures 1 and 2). But despite that, deforestation in Mato Grosso remains relatively high (>1000 km<sup>2</sup> yr<sup>-1</sup>) and is mostly (+80%) illegal. The state government has recently set a target of zero illegal deforestation by 2020, yet there are virtually no incentives to prevent clearing of the 1.6 million hectares (ha) of private forests that could be legally deforested in private areas (i.e., the Legal Reserve (LR) surplus). This lack of strategy to address legal deforestation is risky, given that the potential income from deforesting these areas greatly outweighs the economic value or perceived benefits of conserving forested LR surpluses. Preventing legal deforestation would require innovative new mechanisms to incentivize landowners and communities to conserve forests and the ecosystem services they provide, most notably carbon storage. Payments for ecosystem services (PES) or other financial incentive mechanisms can be a critical part of a suite of policies designed to realign private benefits, offering a direct — and often more equitable — method to reconcile environmental externalities.

IPAM has partnered other institutions to study the feasibility and costs of avoiding deforestation in areas which could be legally deforested. The goal of the project is to better understand motivations and conditions necessary for avoiding deforestation in these areas based on the associated benefits of standing forests (e.g. biodiversity, climate change mitigation, etc.) and independent of property size.

**Work Environment:**

The fellow will support IPAM better evaluating existing experiences and can contribute with ideas for the realignment of conditions to preserve standing forests, considering financial incentives. The student will work in Brasilia and Mato Grosso offices.

**Desired Skills of Fellow:**

Agronomist, biologist, forestry engineer, ecologist, economist.

Experience on implementation and analysis of economic incentives to protect ecosystem services such as Payments for Environmental Services, REDD or other incentives. Knowledge of the Brazilian Forest Code law (important, but not fundamental).

**Language Requirements:** Portuguese or Spanish, limited working proficiency

**Number of Fellows Sought:** 1

**Desired Length of Fellowship:** 3-4 months, after July 2017

**Main Point of Contact:** Raissa Guerra

**Email:** raissa.guerra@ipam.org.br / Phone (+55) 61 2109-4150

**Website:** www.ipam.org.br

**Project Title:** Sustainable and Low Carbon Cattle Ranching in the Brazilian Amazon

**Project Country/Countries:** Brazil

**Host Organization:** Equipe de Conservação da Amazônia (ECAM)

**Project Description:**

The proposed opportunity is embedded within the [Sustainable Territories program](#), implemented by the partner institutions Imazon, Ecam and Agenda Publica with the support of the Mineracao Rio do Norte (MRN) and the Rainforest Association from Sweden.

The program has four components focusing on good municipal governance, strengthening social capital, sound environmental management and economic development. The intended public is located within three municipalities Oriximina, Faro and Terra Santa in the state of Para on the northern bank of the Amazon river. Within the fourth component of economic development, Ecam and Imazon are cooperating on a program to implement with local ranchers methods for sustainable and low carbon cattle ranching. These strategies have been pioneered in other parts of the Amazon and the objective is to bring these experiences to the target region. Cattle ranching is one of the main drivers of deforestation in this region as well as a main source of income.

A team of local specialists will work with selected ranchers to implement techniques for sustainable farming increasing the yield per acre. Possibilities for collaboration include studying the techniques to be applied and their receptivity by the local public.

**Work Environment:**

The program has an office in the nearby city of Santarem, PA and will open offices in the local municipalities by the middle of 2017. The work will be concentrated in the municipality of Oriximina and will involve extensive field visits in the nearby areas where cattle ranching is prevalent.

**Desired Skills of Fellow(s):**

- Ability to engage with different members of the public, specifically those involved in rural and agricultural activities.
- Excellent skills in team work.
- Ability to deal with unexpected situations and low comfort levels.
- Some knowledge of soil improvement for cattle ranching and other sustainable cattle ranching techniques is desirable.
- Ability to communicate well.

**Language Required:** Spanish (professional working proficiency)

**Number of Fellows Sought:** 2

*Has this position been filled?* **No**

**Desired Length of Fellowship:** June - Nove 2017

**Main Point of Contact:**

Vasco M. van Roosmalen

**Email:**

**Website:** <http://www.equipe.org.br/>

**Project Title:** Traditional institutional arrangements underlying forest conservation

**Project Country/Countries:** Brazil

**Host Organization:** Federal University of the São Francisco Valley  
(Universidade Federal do Vale do São Francisco-UNIVASF)

**Project Description:**

The Center for Ecology and Environmental Monitoring (NEMA in Portuguese) of the Federal University of the São Francisco Valley coordinates conservation initiatives in areas where large development projects have led to high rates of deforestation and the displacement of local communities in Brazil. Our projects are mainly focused on the conservation and monitoring of vegetation cover. NEMA is now branching out from its primarily focus on ecology research to include interdisciplinary studies that can better inform our conservation initiatives. The project presented here focuses on the role of local institutions for promoting forest conservation within traditional farming systems in areas where there is evidence of traditional landscape management leading to forest conservation, despite high levels of forest degradation driven by development projects.

Approximately 5 million people fall within the category of traditional communities in Brazil, which are represented by Indigenous People (i.e. native Brazilians) as well as by any mixture of Indigenous, African and European ancestors. These communities' food production systems are categorized as family farming production, which is a type of agricultural production that accounts for most of the food consumed nationally. This scenario has important implications for management and conservation of natural resources in the country, especially considering that traditional communities occupy approximately ¼ of Brazil's territory and they historically live in areas that are now highly regarded for conservation. Given the role of family farming on supporting Brazil's food security and the potential implications that these systems have for forest conservation, it is important to conduct research that investigates ways of reconciling traditional communities' cultural practices of resource management with conservation efforts.

NEMA is currently assessing changes in forest cover and landscape connectivity in areas occupied by two types of traditional farming systems in Brazil named 'faxinal', located in the South, and 'fundo de pasto', located in the Northeast. The maintenance of forest cover within these systems relies on government regulations as well as on local rules underlying the use of common pool resources. As we move forward in this project we are interested in assessing forest conservation on the ground by using ecological metrics for quantifying diversity and assessing natural regeneration in forest fragments. We are also interested in assessing the role of local institutional arrangements (i.e. local rules) for promoting forest conservation within these systems. Finally, we want to expand the project to areas occupied by traditional 'caboclo' communities in the Brazilian Amazon.

Our research staff is looking for partnering with a graduate student interested in working with the faxinal in the South and another one to help us expand the project to the Amazon region. The student that will work with the faxinal will conduct forest diversity and natural regeneration assessments as well as interviews to gather information regarding local institutions, local knowledge and local management practices. For the Amazon component we are looking for someone that already has experience working in the region and that can help us build partnerships with local research centers, NGOs and grassroots organizations. This student will also conduct interviews with local communities. We will give preference for students that can commit to start the work no later than April of 2017. Prior to starting the fieldwork, the fellow students will work with us on developing research questions and sampling designs that can inform sound scientific publications. We strongly encourage the students to work on scientific publications derived from their fieldwork in partnership with our institution.

Finally, we envision this partnership as a way of exchanging research knowledge and experience and collecting high quality interdisciplinary research data that can guide us in implementing better-informed conservation initiatives on the ground. We also wish to facilitate the fellow student to develop an interesting PhD research that can have important practical implications for supporting traditional farming systems in Brazil and their potential forest conservation services.

**Work Environment:**

The student fellow that will work with the communities of 'faxinal' located in Southern Brazil will primarily engage in fieldwork focused on:

- (1) collecting ecological data to measure forest diversity and assess natural regeneration in forest fragments
- (2) conducting interviews with farmers to collect socio-economic data and data regarding local institutional arrangements related to forest conservation.

The student fellow that will work in the Amazon will focus primarily in contacting researchers, NGO professionals and grassroots organizations in the city of Manaus and surrounding areas, state of Amazonas, to make

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an assessment of the potential communities of caboclos with which we can establish partnerships to conduct a comparative study. This student will also conduct interviews with farmers following the same protocol we will use for the faxinal.

During the first couple of weeks in Brazil we expect the fellows to work with our research staff in our office in the Northeast when they will discuss about the research questions and sampling design and organize the logistics of fieldwork. Our office is located in the city of Petrolina, state of Pernambuco, in Northeastern Brazil where they will have an office space to work. The fieldwork related to the communities of faxinal will be conducted in the state of Paraná, Southern Brazil. We will help the fellow responsible for this component of the project with finding a place to live while in the field and with contacting leaderships in communities as well as local research partners (i.e. ONGs and universities) with whom we have been working in the region. The student working in the Amazon component will be based primarily in the city of Manaus, state of Amazonas, and we will also assist them with finding a place to live over there. In this case though, the student is expected to work mostly on his own to find partners in the region so we can expand the project over there. Both students are expected to work well independently and it is mandatory that they speak Portuguese (native speakers preferable).

**Desired Skills of Fellow(s):**

- Background on interdisciplinary science (preferably the fellow will have experience with both quantitative and qualitative research methods)
- Experience with conducting ecological research in tropical and/or subtropical forests
- Experience with conducting interviews
- Experience with working with traditional communities, preferably in Brazil
- Works well independently in the field, is self-motivated and organized
- Experience with publishing work in peer-reviewed journals
- Speaks Portuguese (native speakers preferable)
- Knows how to drive and has a driver's license that is valid in Brazil

**Language Required:** Portuguese, native or bilingual

**Number of Fellows Sought:** 1

*Has this position been filled?* **No**

**Desired Length of Fellowship:** 4-6 months, January- June 2017

**UC Counterpart:**

Dr. Erika Zavaleta, Professor, Environmental Studies Department, UC Santa Cruz

**Main Point of Contact:** Renato Garcia Rodrigues

**Email:** [renato.garcia@univasf.edu.br](mailto:renato.garcia@univasf.edu.br)

**Website:** <http://www.univasf.edu.br>