



## IMPORT/EXPORT/RE-EXPORT OF BIOLOGICAL SPECIMENS (CITES/ESA) FOR SCIENTIFIC RESEARCH



New     Reissue/Renew     Amendment

Complete Sections **A** or **B**, and C, D, and E of this application. U.S. address may be required in Section C.\*\*

<b>A. Complete if applying as an individual</b>			
1.a. Last name		1.b. First name	
2 Date of birth (mm/dd/yyyy)		5.a. Telephone number	
5.b. Alternate telephone number		6. E-mail address	
		1.c. Middle name or initial	
		1.d. Suffix	

<b>B. Complete if applying on behalf of a business, corporation, public agency, Tribe, or institution</b>			
1.a. Name of business, agency, Tribe, or institution		1.b. Doing business as (dba)	
2. Tax identification no.		3.a. Description of business, agency, Tribe, or institution	
		3.b. Website URL (if applicable)	
4.a. Principal officer (P.O.) last name		4.b. P.O. first name	
		4.c. P.O. middle initial	
		4.b. P.O. Title	
5. Primary contact name		6. Primary e-mail address	
7.a. Business telephone number		7.b. Alternate phone no.	
		8.a. Primary contact telephone no.	

<b>C. All applicants complete address information</b>					
1.a. Physical address (Street address; Apartment #, Suite #, or Room #; no P.O. Boxes)					
1.b. City		1.c. State	1.d. Zip code/Postal code	1.e. County/Province	1.f. Country
2.a. Mailing Address (include if different than physical address; include name of contact person if applicable)					
2.b. City		2.c. State	2.d. Zip code/Postal code	2.e. County/Province	2.f. Country

<b>D. All applicants MUST complete</b>	
1. Include a check or money order, payable to the U.S. FISH AND WILDLIFE SERVICE, a <b>nonrefundable processing fee</b> [50 CFR 13.11(d)(4)]. Federal, Tribal, State, and local government agencies, and those acting on behalf of such agencies, are exempt from the processing fee – <b>attach documentation of fee exempt status as outlined in instructions.</b> (50 CFR 13.11(d))	
2. If you are requesting a reissue/renew/amendment, what is your permit/file number?	
3. Certification: I hereby certify that I have read and am familiar with the regulations contained in Title 50, Part 13 of the Code of Federal Regulations and the other applicable parts in subchapter B of Chapter I of Title 50, and I certify that the information submitted in this application for a permit is complete and accurate to the best of my knowledge and belief. I understand that any false statement herein may subject me to the criminal penalties of 18 U.S.C. 1001.	
The individual/principal officer of the business must print and sign the application. (No photocopied or stamped signatures)      Date (mm/dd/yyyy)	

\*\* Further instructions for the above application may be found on our ePermits website. See the last page for information on the Privacy Act, Paperwork Reduction Act, Estimated Burden, and Freedom of Information Act aspects of this application form.

**Mail your application(s) to Division of Management Authority, Branch of Permits, MS:IA 5275 Leesburg Pike, Falls Church, VA 22041-3803.**

## E. IMPORT/EXPORT/RE-EXPORT OF BIOLOGICAL SPECIMENS (CITES/ESA) FOR SCIENTIFIC RESEARCH

### General Information

This application covers activities involving CITES and ESA-listed animal specimens used for scientific research, including any readily recognizable parts, products, or derivatives unless otherwise noted in the Appendices.

Review this application carefully and **provide complete answers to all of the questions**. If you are applying for multiple species, be sure to indicate which species you are addressing in each response. **If more space is needed, attach a separate sheet with your responses numbered according to the questions.**

Please allow at least 90 days for the application to be processed.

### How do I determine whether the species is protected under CITES and/or the ESA?

CITES	ESA
To determine whether an animal species is protected under CITES, when the species was listed, or whether exemptions apply to your requested activity, see the <a href="#">list of CITES species</a>	To determine whether an animal species is protected under the ESA, please review the list of <a href="#">ESA-listed species</a> in the Code of Federal Regulations.  Please be aware that any permit request involving an <b>ESA endangered species</b> must be published in the Federal Register for a required 30-day public comment period.

- If applying as an **individual or institution** please note that you will have to pay the appropriate permit fee.
- If applying as an **institution** that is (or is acting) on behalf of a Federal, Tribal, State, and/or local government agency, no permit fee is required. Provide fee exempt documentation with your application materials.
  - The individual signing the permit must have legal authority to do so if applying on behalf of the institution.

### Questions

If you have any questions regarding an action you are requesting authorization for please contact the Division of Management Authority at [managementauthority@fws.gov](mailto:managementauthority@fws.gov).

Please note: for renewal or amendment of a multi-use permit being requested **within the 5 year** Federal Register public notice period, use application [3-200-52](#)

### This form should NOT be used for:

- Captive Bred Wildlife Registration (use application [3-200-41](#))
- ESA Plants (use application [3-200-36](#))

### Electronic Information Submission

Electronic submission of inventories, photographs, and receipts: For hard copy applications, if you wish to provide information electronically, please include a flash drive containing this information with your physical application.

### All Applicants Must Complete

1. Name and address where you wish the permit to be mailed, **if different from physical address**. If you would like expedited shipping, please enclose a self-addressed, pre-paid, computer-generated, courier service airway bill. If unspecified, all documents will be mailed via regular mail through the U.S. Postal Service.
2. Point of contact if we have questions about the application (name, phone number, and email).
3. Have you or any of the owners of the business (if applying as a business, corporation, or institution), been assessed a civil penalty or convicted of any criminal provision of any statute or regulation relating to the activity for which the application is filed; been convicted, or entered a plea of guilty or nolo contendere, for a felony violation of the Lacey Act, the Migratory Bird Treaty Act, or the Bald and Golden Eagle Protection Act; forfeited collateral; OR are currently under charges for any violation of the laws mentioned above?

\_\_\_ No \_\_\_ Yes

If you answered "Yes" to Question 3, provide: a) the individual's name; b) date of charge; c) charge(s); d) location of incident; e) court, and f) action taken for each violation. Please be aware that a "Yes" response does not automatically disqualify you from getting a permit.

### Proposed Activity

- Import
- Export
- Re-export (e.g. export of a specimen that was previously imported into the United States)

4. The **current** location of the samples (if different from the physical address provided):

Name:

Address:

City:

State/Province:

Postal Code:

Country:

**5. Recipient/Sender:**

- If **export or re-export**, provide name and **physical address** of the recipient in the foreign country.
- If **import**, provide name and **physical address** of the exporter/re-exporter in the foreign country.

Name:

Address:

City:

State/Province:

Postal Code:

Country:

**6. Information on the type of biological samples involved in the import/export/re-export, provide for each species (you may use the table located below):**

- a. Scientific name (genus, species, and, if applicable, subspecies);
- b. Common name;
- c. Number and type of sample(s) (e.g. 10 blood samples, ear clips, etc.)
- d. Source (wild or captive-born)
- e. Approximate date of collection (MM/YYYY)
- f. Description of packaging (vials, slides, envelopes, etc.)
- g. Total # of all samples in shipment.

a. Scientific name (genus, species, and, if applicable, subspecies)	b. Common Name	c. Number & type of sample/part	d. Wild or Captive born	e. Approximate date of collection (mm/yyyy)	f. Description of packaging (vials, slides, envelopes, etc)
EXAMPLE: <i>Pan troglodytes</i>	Chimpanzee	10 blood samples; 4 hair samples	W	08/2015	Vial Envelope
				g. TOTAL # of all samples in the shipment:	

### Source of Specimen

7. For **each biological sample taken from a captive-born/captive hatched animal(s)**, provide a signed and dated statement from the breeder or appropriate documentation (e.g. Species 360 report) that includes the following:
- Scientific name (genus, species, and *if applicable*, subspecies),
  - Common name,
  - Name and address of the facility where the animal was bred and born;
  - Birth/hatch date (mm/dd/yyyy),
  - Identification information (studbook #, microchip, leg band, etc.),
  - Name and address of facility where the parental stock is located; and
  - A statement from the breeder that the animal was bred and born at the breeder's facility (including the facility's name and address), and
  - If not the breeder, documentation demonstrating the history of transactions (e.g., chain of custody or ownership of the sample(s), *if applicable*).
8. **For each biological sample taken from an animal in the wild**, provide:
- Scientific name (genus, species, and *if applicable*, subspecies),
  - Common name,
  - Specific location (e.g., county, state, province, country) where the samples were taken from the wild,
  - The name of the individual(s) who collected the animal/samples and their authorization to do so including (but not limited to) copies of foreign and domestic (Federal, State, and/or Tribal) government collecting permits, licenses, contracts, and/or agreements.
  - Method of collection: sampling protocol, approximate length of time held in captivity, any injury and/or mortality experienced during collection, transport, or holding;
  - Information related to any remuneration, either financial or in-kind, provided for acquiring the sample(s);
  - Efforts to use captive specimens (e.g., captive-born, captive-held) in lieu of taking samples from wild animals.
9. For **each biological sample being re-exported** (e.g., exporting a specimen that was previously imported into the United States), provide:
- A copy of the **cancelled** CITES export or re-export document issued by the appropriate CITES office in the country from which the wildlife was imported;
  - A copy of your Declaration for Importation or Exportation of Fish or Wildlife (Form 3-177), **cleared** by USFWS Office of Law Enforcement.
  - A copy of the ESA permit that authorized the original import.
  - If you did not make the original import, please provide documentation outlining chain-of-ownership since import, including:
    - A copy of the importer's CITES, ESA, and declaration documents (a, b, & c above) and,
    - Subsequent invoices (or other documentation) showing the history of transactions leading to your ownership of the sample(s) after import (provenance).

### Description and Justification For Requested Activity

10. Describe the purpose of the scientific research and include:
- A copy of the research proposal (outlining the purpose, objectives, methods),
  - How long the research has been (or will be) conducted,

- c. Detailed information on sampling methods including:
  - i. who will be taking the samples
  - ii. equipment and methods used
  - iii. measures taken to prevent injuries and mortalities during collection
- d. A copy of the study's Institutional Animal Care and Use Committee (IACUC) form (*if applicable*),
- e. Peer-reviewed scientific papers published from this research (*if applicable*),
- f. An explanation of whether similar research has already been conducted or is currently being conducted.

11. Please provide a detailed description on how the proposed activities will **enhance or benefit the wild population within its native range** (e.g., direct or indirect **conservation efforts**) and provide documentation (e.g., signed memorandums of understanding) demonstrating your commitment to supporting the program and how the program contributes directly to the species identified in your application.

### Technical Expertise & Authorizations

12. CV or resume outlining the technical experience of the researchers and field technicians collecting the samples, as it relates to the proposed activities, including experience with other similar species.

### Shipment Information

13. Please indicate if this is a one-time shipment or if you anticipate needing to import/export/re-export samples multiple times within one year or over multiple years.
14. How will the samples be imported or exported (e.g., personally carried or shipped)?
15. If personally carried, please specify the individual(s) who will be transporting the samples.

*All international shipment(s) must be through a designated port. A [list of designated ports](#) (where an inspector is posted) is available. If you wish to use a port not listed, please contact the Office of Law Enforcement for a Designated Port Exemption Permit (form 3-200-2).*

### CITES Appendix I & Marine Mammal Species

- For **export** of a **CITES Appendix I-listed species**, provide a copy of the CITES import permit, or evidence one will be issued by the Management Authority of the country to which you plan to export the specimen(s). In accordance with Article III of the CITES treaty, it is required that import permits are issued before the corresponding export permit.
- For **import** of **CITES Appendix-I listed species**, provide information to show the import is not for primarily commercial purposes as outlined in [Resolution Conf. 5.10 \(Rev CoP15\)](#).
- For **import** of **CITES Appendix-I marine mammal samples**, please provide a copy of your FWS or NMFS Marine Mammal Protection Act (MMPA) permit or authorization.

## NOTICES

### PRIVACY ACT STATEMENT

**Authority:** The information requested is authorized by the following: the Bald and Golden Eagle Protection Act (16 U.S.C. 668), 50 CFR 22; the Endangered Species Act (16 U.S.C. 1531-1544), 50 CFR 17; the Migratory Bird Treaty Act (16 U.S.C. 703-712), 50 CFR 21; the Marine Mammal Protection Act (16 U.S.C. 1361, et seq.), 50 CFR 18; the Wild Bird Conservation Act (16 U.S.C. 4901-4916), 50 CFR 15; the Lacey Act: Injurious Wildlife (18 U.S.C. 42), 50 CFR 16; Convention on International Trade in Endangered Species of Wild Fauna and Flora (TIAS 8249), 50 CFR 23; General Provisions, 50 CFR 10; General Permit Procedures, 50 CFR 13; and Wildlife Provisions (Import/export/transport), 50 CFR 14.

**Purpose:** The collection of contact information is to verify the individual has an eligible permit to conduct activities which affect protected species. This helps FWS monitor and report on protected species and assess the impact of permitted activities on the conservation and management of species and their habitats.

**Routine Uses:** The collected information may be used to verify an applicant's eligibility for a permit to conduct activities with protected wildlife; to provide the public and the permittees with permit related information; to monitor activities under a permit; to analyze data and produce reports to monitor the use of protected wildlife; to assess the impact of permitted activities on the conservation and management of protected species and their habitats; and to evaluate the effectiveness of the permit programs. More information about routine uses can be found in the System of Records Notice, Permits System, FWS-21.

**Disclosure:** The information requested in this form is voluntary. However, submission of requested information is required to process applications for permits authorized under the listed authorities. Failure to provide the requested information may be sufficient cause for the U.S. Fish & Wildlife Service to deny the request.

### PAPERWORK REDUCTION ACT STATEMENT

We are collecting this information subject to the Paperwork Reduction Act (44 U.S.C. 3501) in order provide the U.S. Fish and Wildlife Service the information necessary, under the applicable laws governing the requested activity, for which a permit is requested. Information requested in this form is purely voluntary. However, submission of requested information is required in order to process applications for permits authorized under the applicable laws. Failure to provide all requested information may be sufficient cause for the U.S. Fish and Wildlife Service to deny the request. According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. OMB has approved this collection of information and assigned Control No. 1018-0093.

### ESTIMATED BURDEN STATEMENT

We estimate public reporting for this collection of information to average 2 hours, including time for reviewing instructions, gathering and maintaining data and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of the form to the Service Information Clearance Officer, Fish and Wildlife Service, U.S. Department of the Interior, 5275 Leesburg Pike, MS: BPHC, Falls Church, VA 22041-3803, or via email at [Info\\_Coll@fws.gov](mailto:Info_Coll@fws.gov).

Please do not send your completed form to this address.

**University of Texas-Austin**  
Rebecca Lewis  
Verreaux's Sifaka

FWS Form 3-200-37e Additional Information

**This application is request is a new application but is essentially a renewal of my previous permit: 20US124346/9.**

7. For **each biological sample taken from a captive-born/captive hatched animal(s)**, provide a signed and dated statement from the breeder or appropriate documentation (e.g. Species 360 report) that includes the following:

i) Not Applicable

8. **For each biological sample taken from an animal in the wild**, provide:

a) Scientific name (genus, species, and *if applicable*, subspecies),

i) *Propithecus verreauxi*

b) Common name

i) Verreaux's sifaka

c) Specific location (e.g., county, state, province, country) where the samples were taken from the wild i)

i) Ankoatsifaka Research Station

Kirindy Mitea National Park

Antsira

Menabe

Madagascar

d) The name of the individual(s) who collected the animal/samples and their authorization to do so including (but not limited to) copies of foreign and domestic (Federal, State, and/or Tribal) government collecting permits, licenses, contracts, and/or agreements.

i) Dr. Rebecca J. Lewis

Department of Anthropology

The University of Texas

2201 Speedway Stop 3200

Austin, TX 78712

Rebecca Lewis (permits are renewed every 6 months). I collaborate with MICET, the Malagasy non-governmental organization that helps me obtain both my research permits and my export permits. I have attached copies of my research permits that allowed me to collect the genetic samples and the most recent permit that was just renewed. The government of Madagascar requires that we obtain the US CITES permit first before they can issue a permit.

The research accord with the University of Antananarivo complies with the laws of Madagascar concerning the use of threatened animals.

The permit numbers for the Madagascar research permits:

127/22/MEDD/SG/DGGE/DAPRNE/SCBE.Re

May 20, 2022

008/23/MEDD/SG/DGGE/DAPRNE/SCBE.Re

January 11, 2023

241/23/MEDD/SG/DGGE/DAPRNE/SCBE.Re

July 11, 2023

040/24/MEDD/SG/DGGE/DAPRNE/SCBE.Re

February 15, 2024



Here are the UT IACUC permit numbers:

AUP-2020-00143                      2020-2023

AUP-2023- 00121                      2023-2026

e) Method of collection: sampling protocol, approximate length of time held in captivity, any injury and/or mortality experienced during collection, transport, or holding;

The purpose of my research is to understand which reproductive strategies (male or female) lead to higher reproductive success. Paternity analyses allow me to distinguish between which individuals mated the most and which individuals actually fathered the most infants. Genetic samples are also needed from females to determine which individuals are their kin. I collect these samples from wild sifaka that are hardly kept in captivity. They are sedated within their home range for only a few hours (depending upon how long it takes for the anesthetic to wear off). Thus, they are only “in captivity” for up to 3 hours. Animals are captured using a blow gun rather than trapped because of the particular nature of this species. Sifaka are folivores and thus are not easily enticed into a trap. Frugivore traps can be baited with strong smelling, ripe bananas. But freshly cut leaves are not as effective a form of bait, even for folivores. Moreover, leaves are readily available in the forest.

- i) **Sedation:** An experienced Malagasy professional darter is hired for the purpose of darting subjects. Animals are darted when they are in low branches or on the ground to minimize risk of fall injury. Individuals are darted at distances up to 6 meters, preferably injecting the hindquarters. Because unsuitable target sites are the chest, thorax, lumbar region, abdomen, shoulder, neck, head or face, a shot will not be attempted unless the animal is facing away from the shooter. Thus, if a shot misses the hindquarters, it also misses the unsuitable target sites, particularly the face.
- ii) **Protocol during Sedation:** While the animals are in sedated, various morphological measurements are collected, such as weight, length, canine size. They also have a small collar and tag placed around their necks for identification purposes. These collars are the smallest possible for their size and for effectiveness (3/8 inch wide). I have used this marking mechanism for Verreaux’s sifaka since 2006 in the Kirindy Mitea National Park. The tags are plastic and double-sided. They are different colors and shapes with unique numbers on both sides. The tags are affixed to the collar with a small “pig ring” (a 1/2” wire bent into the shape of a C that can be closed to make a circle). Each individual thus has a unique combination of color collar and color, shape, and number tag for identification. Individual identification is a crucial component of my study. The temperature, heart rate, pulse, and response to toe pinch are monitored every 10 minutes.
- iii) **Recovery:** Following completion of the procedure, sedated animals are always within 3 meters of a human observer for their safety as they recover. Animals are continuously monitored to ensure that they are in the shade, protected from insects, and that there are no predators nearby. Once they begin to be able partially sit up or roll over, they are placed in a low thread count pillow case, following the typical field primatology procedure of reducing exposure to stimuli. Because sifaka have an upright posture, they are placed sitting up in the pillowcase. A knot is tied at the top of the pillowcase (king-sized pillowcases are used for adults to ensure sufficient material to tie the knot and to ensure that there is sufficient space for comfort for the animal). The pillowcase is then

hung in a tree in clear sight of an observer within 3m of the field "laboratory". The animals are suspended in a tree because to prevent injury and reduce stimulation. On the ground they could roll onto a stick, into a hole, against a tree, etc. a. Once animals are ready for release as determined by motion within the bag, the pillowcase is placed on the ground next to a tree trunk so that the animal is sitting upright. The knot is untied and the pillowcase is unrolled enough for the animal to grab the tree and climb out of the pillowcase. If the animal does not climb out on its own, their hands are placed so that they are holding onto the trunk (they do this naturally), the pillowcase is removed from underneath, and the person steps back a few meters. Once the animal climbs at all on its own, the observer steps several meters away to observe the release from a position that is less stressful for the animal. The observer continues to stay with the animal until they have observed that the animal moves normally (no injuries, fully recovered from the anesthesia). Observers stay with the animal until it successfully jumped greater than 5 meters at least 3 times. Typically, observers follow the released animal much longer than this criterion, typically staying with the animal for 15 - 30 minutes to observe the behavior.

iv) Mortality Note: It is against international law to euthanize any lemur. A Madagascar National Parks agent is present during every capture to ensure that national and international laws are followed. If an animal is mortally wounded and is under an extreme amount of pain, it will be euthanized by the veterinarian (Dr. Fidisoa Rasambainarivo or Dr. Santatra Randrianarisoa). We will work with the national parks agent to report the death to the relevant authorities.

f) Information related to any remuneration, either financial or in-kind, provided for acquiring the sample(s);

i) No remuneration, either financial or in-kind, was provided for acquiring these samples.

g) Efforts to use captive specimens (e.g., captive-born, captive-held) in lieu of taking samples from wild animals.

i) The goals of my study are (1) to determine what factors influence male reproductive success in this species, and (2) to understand the biological and anthropogenic factors that influence population dynamics of a wild lemur population. I cannot study these issues in a captive setting because (1) there are currently no *Propithecus verreauxi* in captivity, and (2) this would distort my ability to monitor when and if the wild population is growing, declining, or stable, and what factors are causing this particular dynamic.

9. For each biological sample being re-exported, provide:

a) Not applicable

10. Describe the purpose of the scientific research and include:

a) A copy of the research proposal (outlining the purpose, objectives, methods)

i) I have attached my report to Madagascar National Parks from January 2024. I must renew my research permit every 6 months. My 6-month report serves as my proposal and request for a new permit and resulted in my February permit. It is in French. So I have included some brief information here in English.

Lemur social systems are the subject of much debate and are often considered unusual. One social “peculiarity” discussed by previous authors is the even sex ratios seen in many lemur species. It is important to note, however, that this characterization is somewhat of an oversimplification of the variability that exists. An even sex ratio for the population does not necessarily occur because the groups have the same number of males and females. Rather it may result from highly variable group composition, with some groups having a male-biased sex ratio, some groups a female-biased sex ratio, as well as some groups with even-sex ratios. For example, while the population of Verreaux’s sifaka at Kirindy Forest has approximately the same number of males and females, only half of the social groups have even sex ratios.

Verreaux’s sifaka (*Propithecus verreauxi*) are sexually monomorphic lemurs with a body mass of 2.5-4.0 kg. They live in small mixed-sex groups of 2-16 individuals with variable adult sex ratios. Populations of *P. verreauxi* are generally male-biased with a ratio of 3 males to 2 females at Beza-Mahafaly and 5:2 at Kirindy. But at Kirindy Mitea National Park, the population sex ratio is biased towards having more females. They have home ranges of approximately 20 ha. Females are “dominant” to males in that they have priority of access to food resources, exhibit aggression towards males, and receive formal signals of submission from males. The adult males are bimorphic: some exhibit a pronounced brown greasiness around their sternal gland and on their chests, whereas others have clean, white chests. Dominant males have higher fecal testosterone than subordinate males, which may be a result of suppression by the dominant males. Sifaka have a limited breeding season; a female’s behavioral estrus ranges from 0.5-96 hr. Like many mammals, sifaka use scent-marking as a form of communication. Scent glands are sexually dimorphic: females have scent glands in the ano-genital region, whereas males have both ano-genital and sternal glands.

In order to determine whether lemur demographic patterns are peculiar, an examination of the social factors that influence the Verreaux’s sifaka social system may be useful. In particular, the question of why sifaka are not regularly found in single-male groups has been debated. One of the goals of this long-term study of the behavioral ecology of Verreaux’s sifaka is to understand the demography and social system of this species.

Verreaux’s sifaka have been suggested to have a multilevel social system. Home ranges overlap. Intergroup encounters are common and can be peaceful as well as agonistic. Both intra- and inter- group social relations are critical in the social dynamics. Indeed, with visiting and floater males being relatively common and with both sexes dispersing, group boundaries can seem somewhat fluid. Moreover, males from adjacent groups sometimes mate and father offspring. Thus, Jolly (1966) and Richard (1978, 1985) suggested that Verreaux’s sifaka social groups are organized into neighborhoods.

The larger goal of this long-term longitudinal study is to understand the general biology of this critically endangered species. The purpose of this specific project is to examine two aspects that influence the Verreaux’s sifaka social system: the reproductive strategies of the two types of males (stained-chested and clean-chested) and the feeding competition that influences female grouping patterns and constrains group size. I have already begun examining male reproductive strategies at Kirindy Mitea National Park when I was cutting trails, habituating social groups, and training assistants to collect data. These data showed that stained males do have higher testosterone than clean males (Lewis, 2009).

b) How long the research has been (or will be) conducted

i) This is a long-term longitudinal study of a single population of Verreaux's sifaka. It will continue for at least the next 20 years.

c) Detailed information on sampling methods including: who will be taking the samples, equipment and methods used, measures taken to prevent injuries and mortalities during collection

i) Samples are collected by myself (Rebecca Lewis, PhD) or my collaborator on the long-term Sifaka Research Project (Tracy Montgomery, PhD) that I trained in the capture procedures with the Verreaux's sifaka in the Kirindy Mitea National Park in January 2022, June 2022, and June 2023.

ii) Small bits of ear tissue are collected from each animal. Two tissue samples are collected via a 2 mm or 3 mm biopsy punch. This tissue sample is stored in a 1.5ml eppendorf tube filled with approximately 1ml of EDTA (a DNA preservative).

**Sedation:** An experienced Malagasy professional darter is hired for the purpose of darting subjects. Animals are darted when they are in low branches or on the ground to minimize risk of fall injury. Individuals are darted at distances up to 6 meters, preferably injecting the hindquarters. Because unsuitable target sites are the chest, thorax, lumbar region, abdomen, shoulder, neck, head or face, a shot will not be attempted unless the animal is facing away from the shooter. Thus, if a shot misses the hindquarters it also misses the unsuitable target sites, particularly the face.

**Protocol during Sedation:** While the animals are in sedated, various morphological measurements are collected, such as weight, length, canine size. They also have a small collar and tag placed around their necks for identification purposes. These collars are the smallest possible for their size and for effectiveness (3/8 inch wide). I have used this marking mechanism for Verreaux's sifaka since 2006 in the Kirindy Mitea National Park. The tags are plastic and double-sided. They are different colors and shapes with unique numbers on both sides. The tags are affixed to the collar with a small "pig ring" (a 1/2" wire bent into the shape of a C that can be closed to make a circle). Each individual thus has a unique combination of color collar and color, shape, and number tag for identification. Individual identification is a crucial component of my study. The temperature, heart rate, pulse, and response to toe pinch are monitored every 10 minutes.

**Recovery:** Following completion of the procedure, sedated animals are always within 3 meters of a human observer for their safety as they recover. Animals are continuously monitored to ensure that they are in the shade, protected from insects, and that there are no predators nearby. Once they begin to be able partially sit up or roll over, they are placed in a low thread count pillowcase, following the typical field primatology procedure of reducing exposure to stimuli. Because sifaka have an upright posture, they are placed sitting up in the pillowcase. A knot is tied at the top of the pillowcase (king-sized pillowcases are used for adults to ensure sufficient material to tie the knot and to ensure that there is sufficient space for comfort for the animal). The pillowcase is then hung in a tree in clear sight of an observer within 3m of the field "laboratory". The animals are suspended in a tree because to prevent injury and reduce stimulation. On the ground they could roll onto a stick, into a hole, against a tree, etc. Once animals are ready for release as determined by motion within the bag, the pillowcase is placed on the

ground next to a tree trunk so that the animal is sitting upright. The knot is untied and the pillowcase is unrolled enough for the animal to grab the tree and climb out of the pillowcase. If the animal does not climb out on its own, their hands are placed so that they are holding onto the trunk (they do this naturally), the pillowcase is removed from underneath, and the person steps back a few meters. Once the animal climbs at all on its own, the observer steps several meters away to observe the release from a position that is less stressful for the animal. The observer continues to stay with the animal until they have observed that the animal moves normally (no injuries, fully recovered from the anesthesia). Observers stay with the animal until it successfully jumped greater than 5 meters at least 3 times. Typically, observers follow the released animal much longer than this criterion, typically staying with the animal for 15 - 30 minutes to observe the behavior.

iii) Injury and Mortality Prevention: As described above, animals are only darted when they are facing away (to protect the face), when they do not have a dependent infant, and in the hindquarters. They are only darted when in close range and when they are resting on a low branch. Animals are darted by an experienced darter and are caught in a cloth by an experienced capture team. Animals are examined immediately for any injuries and monitored regularly (temperature, respiration, etc.). Sedated animals are placed in a low-stimulus environment until recovery. It is against international law to euthanize any lemur. A Madagascar National Parks agent is present during every capture to ensure that national and international laws are followed. If an animal is mortally wounded and is under an extreme amount of pain, it will be euthanized by the veterinarian (Dr. Fidisoa Rasambainarivo or Dr. Santatra Randrianarisoa). We will work with the national parks agent to report the death to the relevant authorities.

d) A copy of the study's Institutional Animal Care and Use Committee (IACUC) form (*if applicable*)

i) See attached document "ApprovalLetter IACUC\_2024"

e) Peer-reviewed scientific papers published from this research

i) This project is part of a long-term, longitudinal study. No publications on paternity has been published from this population. I gave a presentation at a scientific conference on preliminary results:

An initial study of male chest status has been published:

Lewis RJ (2009) Chest staining variation as a signal of testosterone levels in male Verreaux's sifaka. *Physiology & Behavior* 96:586-592. DOI: [10.1016/j.physbeh.2008.12.020](https://doi.org/10.1016/j.physbeh.2008.12.020)

The following are publications from the long-term research of this population, including some involving samples collected and imported with previous CITES permits:

Bueno G, Lewis RJ (2024) Wild Verreaux's sifaka (*Propithecus verreauxi*) respond flexibly to sperm competition in their social environment. *International Journal of Primatology*. 1-19. DOI: [10.1007/s10764-024-00437-3](https://doi.org/10.1007/s10764-024-00437-3)

- Axel AC, Harshbarger BM, Lewis RJ, Tecot SR (2024) Consistency in Verreaux's sifaka home range and core area size despite seasonal variation in resource availability. *American Journal of Primatology*. 86(6): e23617. DOI: [10.1002/ajp.23617](https://doi.org/10.1002/ajp.23617).
- Gnanadesikan GE, Hammock E, Tecot SR, Lewis RJ, Hart R, Carter CS, MacLean EL (2022) What are oxytocin assays measuring? Epitope mapping, metabolites, and comparisons of wildtype & knockout mouse urine. *Psychoneuroendocrinology* 143: 105827.
- Asangba A, Mugisha L, Rukundo J, Lewis R, Halajian A, Cortés-Ortiz L, Junge R, Irwin M, Karlson J, Perkin A, Watsa M, Erkenwick G, Bales K, Leigh S, Stumpf R (2022) Large comparative analyses of primate microbiomes indicate that the oral microbiome is distinct relative to other body site microbiomes. *Spectrum* 10(3):e01643-21. DOI: [10.1128/spectrum.01643-21](https://doi.org/10.1128/spectrum.01643-21)
- Lewis RJ, Bueno GL, Di Fiore A (2022) Variation in Female Leverage: The Influence of Kinship and Market Effects on the Extent of Female Power over Males in Verreaux's Sifaka. *Frontiers in Ecology and Evolution*. 10:851880. DOI:10.3389/fevo.2022.851880
- Perofsky A, Meyers LA, Abondano L, Di Fiore A, Lewis RJ (2021) Social groups constrain the spatiotemporal dynamics of wild sifaka gut microbiomes. *Molecular Ecology*. 30(24): 6759–6775. DOI:[10.1111/mec.16193](https://doi.org/10.1111/mec.16193)
- Colchero F, Aburto JM, Archie EA, Boesch C, Breuer T, Campos FA, Fedigan LM, Fichtel C, Groenenberg M, Hobaiter C, Kappeler PM, Lawler RR, Lewis RJ, Machanda ZP, Manguette ML, Muller MN, Packer C, Parnell RJ, Perry S, Pusey AE, Robbins MM, Seyfarth RM, Silk JB, Sterck J, Stoinski TS, Stokes EJ, Strier KB, Strum SC, Tung J, Villavicencio F, Witting RM, Wrangham RW, Zuberbühler K, Vaupel JW, Alberts SC (2021) The long lives of primates and the 'invariant rate of ageing' hypothesis. *Nature Communications* 12:3666. DOI: [10.1038/s41467-021-23894-3](https://doi.org/10.1038/s41467-021-23894-3)
- Lewis RJ, Sandel AA, Hilty S, Barnett SE (2020) Numerical superiority does not explain success in intergroup encounters in Verreaux's sifaka (*Propithecus verreauxi*). *International Journal of Primatology*. 41:305–324. DOI: [10.1007/s10764-020-00155-6](https://doi.org/10.1007/s10764-020-00155-6)
- Mann AE, Mazel F, Lemay M, Morien E, Kowalewski M, Di Fiore A, Link A, Goldberg T, Tecot S, Baden A, Gomez A, Sauter SL, Cuzzo F, Britton GAO, Dominy NJ, Stumpf R, Lewis RJ, Swedell L, Amato A, Wegener Parfrey L (2019) Biogeography of protists and nematodes in the wild non-human primate gut microbiome. *International Society for Microbial Ecology Journal*. 14:609-622. DOI: [10.1038/s41396-019-0551-4](https://doi.org/10.1038/s41396-019-0551-4)
- Voyt RA, Ortiz KM, Sandel AA, Lewis RJ (2019) Female power in Verreaux's sifaka (*Propithecus verreauxi*) is based on maturity, not body size. *International Journal of Primatology* 40(3): 417-434. DOI: [10.1007/s10764-019-00096-9](https://doi.org/10.1007/s10764-019-00096-9)
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- Lewis RJ, Axel AC (2019) Using vegetation phenology and long-term demographic data to assess the impact of Cyclone Fanele on a lemur population in Madagascar. In A Behie, J, N Malone (eds) *Primate Research and Conservation in the Anthropocene* (pp. 216-236). Cambridge: Cambridge University Press. DOI: [10.1017/9781316662021.013](https://doi.org/10.1017/9781316662021.013)
- Perofsky A, Lewis RJ, Meyers LA (2019) Terrestriality and bacterial transfer: A comparative study of gut microbiomes in sympatric Malagasy mammals. *International Society for Microbial Ecology Journal* 13:50–63. DOI: [10.1038/s41396-018-0251-5](https://doi.org/10.1038/s41396-018-0251-5)
- Perofsky A, Lewis RJ, Abondano L, Di Fiore A, Meyers LA (2017) Hierarchical social networks shape gut microbial composition in wild Verreaux's sifaka *Proceedings of the Royal Society B*. 284:20172274. DOI: [10.1098/rspb.2017.2274](https://doi.org/10.1098/rspb.2017.2274)

- Leimberger K, Lewis RJ (2017) Male strategies for changing group membership in Verreaux's sifaka (*Propithecus verreauxi*). *American Journal of Primatology* 79:e22455 DOI: 10.1002/ajp.22455
- Veilleux CC, Scarry CJ, Di Fiore A, Kirk EC, Bolnick DA, Lewis RJ (2016) Group benefit associated with polymorphic trichromacy in a Malagasy primate (*Propithecus verreauxi*). *Scientific Reports* 6:38418. DOI: 10.1038/srep38418
- Rasambainarivo FT., Junge RE, Lewis RJ (2014) Biomedical evaluation of Verreaux's sifaka (*Propithecus verreauxi*) from Kirindy Mitea National Park in Madagascar. *Journal of Zoo and Wildlife Medicine* 45(2):247-255. DOI: [10.1638/2013-0038R1.1](https://doi.org/10.1638/2013-0038R1.1)
- Vanpé C, Salmona J, Pais I, Kun-Rodrigues C, Pichon C, Viana Meyler S, Rabarivola C, Lewis RJ, Thani Ibouroi M, Chikhi L (2013) Non-invasive molecular sexing: An evaluation and validation of the SRY- and amelogenin-based method in three new lemur species. *American Journal of Physical Anthropology* 150:492-503. DOI: [10.1002/ajpa.22222](https://doi.org/10.1002/ajpa.22222)
- Lewis RJ, Lawler RR (2013) Verreaux's sifaka. In N Rowe (ed.): *All the World's Lemurs, Lorises, Bushbabies, and Pottos: The Primate Suborder Strepsirhini* (All the World's Primates Ebook Series). Charlestown, RI: Pogonias Press.
- Lewis RJ, Lawler RR (2011) Verreaux's Sifaka. In N Rowe, M Myers (eds.): *All the World's Primates*, [www.alltheworldsprimates.org](http://www.alltheworldsprimates.org). Primate Conservation Inc., Charlestown RI.
- Lewis RJ, Rakotonranaivo F (2011) The impact of Cyclone Fanele on sifaka body condition and reproductions in the tropical dry forest of western Madagascar. *Journal of Tropical Ecology* 27:429–432. DOI: [10.1017/S0266467411000083](https://doi.org/10.1017/S0266467411000083)

f) An explanation of whether similar research has already been conducted or is currently being conducted.

i) Searches of Google Scholar and PubMed databases did not reveal any substantially overlapping studies. There are 2 other long-term studies of wild Verreaux's sifaka that occur in very different populations (See Table 1 from Leimberger & Lewis 2017 below) and with different research questions:

- Beza-Mahafaly Special Reserve: This is the most dense and longest-studied population of wild Verreaux's sifaka. This population inhabits the spiny desert and gallery forest, rather than the dry forest of Kirindy Mitea National Park. A study of paternity from this population: Lawler RR. 2007. Fitness and extra-group reproduction in male Verreaux's sifaka: an analysis of reproductive success from 1989–1999. *American Journal of Physical Anthropology* 132:267–277.

There has been no study of bimorphism in chest staining from this population and the population demographics are likely to affect male-male reproductive competition and female choice, thus any study of paternity from Beza is likely to have different findings than a study of paternity at Kirindy Mitea. Additionally, the sifaka's major predator, the fosa (*Cryptoprocta ferox*) is largely absent from this habitat, surely affecting the sifaka's population dynamics.

- Kirindy Forest: This population has a middle level of population density and is a gallery forest, unlike the Kirindy Mitea forest -- the location of the population I study. There has been a study of paternity from this population: Kappeler PM, Schäffler L (2008) The lemur syndrome unresolved: extreme male reproductive skew in sifakas (*Propithecus verreauxi*), a sexually monomorphic primate with female dominance. *Behavioral Ecology and Sociobiology* 62, 1007-1015. But again, there are key differences in demographics between this population and Kirindy Mitea (Table 1 below) that are likely to affect paternity distribution. Moreover, the authors of

that study ignored the adolescent developmental stage (labeling all individuals 3yr and older as adults rather than the more typical 5 yrs and older as adults) and thus have produced very different results about reproductive skew in that population – by including adolescent males as adults, they found unusual and unexpected reproductive skew among males. Additionally, there has been a study of bimorphism in this population published by me: Lewis RJ, van Schaik CP. 2007. Bimorphism in male Verreaux’s sifaka in the Kirindy Forest of Madagascar. *International Journal of Primatology* 28:159–182. That publication was part of my dissertation at Kirindy Forest and did not include any genetics, just morphology and behavior and had a very small sample size.

**TABLE I. Comparison of Three Verreaux’s Sifaka Populations**

	Kirindy Forest	Kirindy Mitea National Park	Beza Mahafaly Special Reserve
Habitat type	Dry deciduous forest and gallery forest <sup>a</sup>	Dry deciduous forest <sup>b</sup>	Gallery forest <sup>c</sup>
Predation level	High <sup>a</sup>	High <sup>d</sup>	Low <sup>e</sup>
Population density (individuals/km <sup>2</sup> )	104 <sup>a</sup>	40 <sup>f</sup>	350 <sup>g</sup>
Group density (groups/km <sup>2</sup> )	18 <sup>a</sup>	7–9 <sup>d</sup>	47 <sup>g</sup>
Mean [range] home range size (ha)	7 <sup>h,j</sup> [6–10] <sup>i</sup>	15 [10–19] <sup>j</sup>	4 <sup>k</sup> [4–6] <sup>c</sup>
Mean ± SD adult males/group <sup>l</sup>	1.5 ± 0.7 <sup>m</sup> [1.9 ± 0.8] <sup>a</sup>	1.3 ± 0.2 [1.8 ± 0.3] <sup>n</sup>	2.6 ± 0.9 <sup>o</sup>

<sup>a</sup>Kappeler and Fichtel [2012] (52 marked individuals in 9 groups in approx. 50 ha “CS7” study area).

<sup>b</sup>Lewis and Rakotondranaivo [2011].

<sup>c</sup>Ratsirarson [2003] (“Parcel 1” study area).

<sup>d</sup>Lewis, unpublished data.

<sup>e</sup>Brockman et al. [2008].

<sup>f</sup>Lewis and Rakotondranaivo [2011].

<sup>g</sup>Sussman et al. [2012] (approx. 280 marked individuals in 38 groups within 80 ha Parcel 1).

<sup>h</sup>Lewis [2005].

<sup>i</sup>Benadi et al. [2008].

<sup>j</sup>Lewis and Davis, unpublished data.

<sup>k</sup>Richard et al. [1993].

<sup>l</sup>Age of maturity is not standardized: presented as ages ≥5 years [ages ≥3 years].

<sup>m</sup>Lewis and van Schaik [2007] (calculated from Fig. 3).

<sup>n</sup>Leimberger and Lewis [2015].

<sup>o</sup>Lawler [2003] (calculated from Table 4.4).

There has been no study of paternity distribution for the Kirindy Mitea population and no study has examined the effect of bimorphism on reproductive success.

11. Please provide a detailed description on how the proposed activities will **enhance or benefit the wild population within its native range** (e.g., direct or indirect **conservation efforts**) and provide documentation (e.g., signed memorandums of understanding) demonstrating your commitment to supporting the program and how the program contributes directly to the species identified in your application.

i) Sifaka, like many lemurs, are threatened by habitat loss from slash-and-burn agriculture, tree cutting for charcoal and boats, as well as being hunted and killed for food. Conservation work has been ongoing in the Kirindy Mitea National Park by my research team since 2006, when I established the long-term research station, Ankoatsifaka Research Station, in the park. It (1) is an important source of employment in this area where most people live off the land or sea, (2) provides free food, water, and shelter to anyone from the local community who is



in need and passing through the park, and (3) is the center and source of the majority of research and conservation in the dry forests section of the park.

ii) Research studies have shown that the presence of a long-term research station is one of the most effective means of conserving entire ecosystems. Ankoatsifaka Research Station serves as a pillar of the local community and is one of the largest employers in this remote area of Madagascar. We work in close collaboration with the local communities to fund projects determined to be important by the community itself, such as additional teachers in the school, reforestation, candy and soccer balls for independence day celebrations, and security patrols during periods of high bandit activity. The ability to employ so many people and to fund stakeholder-requested projects is dependent on researchers conducting projects at these sites. Additionally, because the research station is so integrated with the community, there is a strong incentive for the community to help protect the forest.

iii) Madagascar is a global biodiversity hotspot with very high rates of species endemism and diversity, and the highest biodiversity conservation priority. Due to a previous emphasis on eastern rain forests and a general dearth of knowledge on tropical dry forests, conservation organizations are endeavoring to expand research efforts in western Madagascar, including a US nonprofit that I founded (Ankoatsifaka Initiative for Dry Forests [AID Forests]: <https://www.aidforests.org/>) and a Malagasy nongovernmental organization that I helped found (NGO Ankoatsifaka). Both of these **organizations were started specifically to protect the entire Verreaux's sifaka native range**. The project proposed here helps to alleviate this knowledge gap by intensely studying the fauna in a dry forest in western Madagascar. Large-scale conservation strategies in Kirindy Mitea National Park are currently being developed by a collaboration involving me (RJ Lewis), AID Forests, NGO Ankoatsifaka, the World Wildlife Fund, Madagascar National Parks, and local villagers. The Sifaka Research Project (which includes the research proposed here) is the largest and longest project at the Ankoatsifaka Research Station and substantially funds the station and the NGO Ankoatsifaka staff salaries, allowing the NGO to use funds from donations for mostly conservation activities.

12. CV or resume outlining the technical experience of the researchers and field technicians collecting the samples, as it relates to the proposed activities, including experience with other similar species.

i) See attached CVs for Rebecca Lewis and Tracy Montgomery

13. Please indicate if this is a one-time shipment or if you anticipate needing to import/export/re-export samples multiple times within one year or over multiple years.

i) Multiple years

14. How will the samples be imported or exported (e.g., personally carried or shipped)?

i) Shipped.

15. If personally carried, please specify the individual(s) who will be transporting the samples.

i) Not applicable



SECRETARIAT GENERAL

DIRECTION GENERALE DE LA GOUVERNANCE ENVIRONNEMENTALE

DIRECTION DES AIRES PROTEGEES, DES RESSOURCES NATURELLES RENOUVELABLES ET DES ECOSYSTEMES.

N° 127 /22/MEDD/SG/DGGE/DAPRNE/SCBE.Re (Renouvellement de l'AR N°164/21 du 17/09/2021)

AUTORISATION DE RECHERCHE

**NOM ET PRENOM**  
**FONCTION**  
**ACCOMPAGNE DE**

Rebecca Lewis  
Chercheur  
Andriamampiarisoa Tantelinaiaina Maximain, Gabrielle Bueno, Fidisoa Rasambainarivo, Eliette Noromalala, Mirana Raharinirina, un représentant CAFF/CORE

**ORGANISME TUTEL**

Mention : Zoologie et Biodiversité Animale (MZBA)-BP 906 Tana 101- Parc National de Kirindy Mitea et ses zones périphériques

**LIEU**

Six (06) mois à partir de la date de signature de l'Autorisation

**DUREE**

**EST AUTORISE (E) A FAIRE DES RECHERCHES SUR :**

« Ecologie comportementale des Sifaka : *Propithecus verreauxi* »

**MENTION SPECIALE D'ACTIVITES**

**Espèce cible :** *Propithecus verreauxi*

- Capture avec relâche d'individus pour pose ou remplacement de colliers émetteurs
- Collecte de tissus par deux biopsies auriculaires (biopsie de 2X2 mm)
- Collecte d'ectoparasites à l'aide de pince à épiler
- Collecte d'échantillons d'urine
- Collecte d'échantillons de matières fécales pour analyses hormonales
- Collecte de données phénologique : localisation GPS, espèce, Hauteur...
- Collecte d'échantillons de plantes (fruit, feuille...) nourritures de l'espèce cible

AUCUN DEVELOPPEMENT DE PRODUITS N'EST AUTORISE

**EXPORTATION :** Quatre-vingt (80) échantillons de matières fécales (10g par échantillons =800g), vingt (20) échantillons de tissus stockés dans 40 tubes (2g par échantillons =80g), échantillons d'ectoparasites à partir de dix-sept (17) individus dans 34 tubes, quatre-vingt-dix (90) plante séchées (100g par espèces à partir de trente (30) espèces) : total 9000g (ESPECE A PRECISER PAR LA DAPRNE APRES ANALYSE DU RAPPORT PRELIMINAIRE)

**OBLIGATIONS DU TITULAIRE :**

- Négocier avec les gestionnaires et/ou comité de gestion des sites ou forêts transférées pour y accéder, le cas échéant
- **Effectuer une restitution au niveau Régional avec le procès-verbal y afférent signé par le DREDD ou son représentant**
- Faire viser la présente par la Direction Régionale de l'Environnement et du Développement Durable et/ou DREDD concernées avant toute descente sur terrain conformément à la note n° 394- 10/MEF/SG/DGF/DVRN/SGFF du 18 Mai 2010 de la localité de recherche
- Remettre à la Direction des Aires Protégées, des Ressources Naturelles renouvelables et des Ecosystèmes, en quatre (04) exemplaires EN FRANÇAIS, le rapport préliminaire à la fin de sa mission et le rapport final avec les résultats des recherches au plus tard UN an après la mission, en versions papier et électronique.
- **Respecter la réglementation en matière forestière et toute irrégularité aux mentions de l'Autorisation de Recherche est considéré comme un délit forestier**
- Pour tout transport de produits de collecte (faune et flore), avoir un procès-verbal de constatation des collectes effectuées par le CEDD concerné et autorisation de transport délivré par DREDD si le déplacement se fait en dehors de la région et remettre une copie au DAPRNE
- Pour toute exportation : remettre une copie du dépôt au DAPRNE et une autre au dossier d'exportation

**AMPLIATIONS :**

CAFF/CORE

DREDD : Menabe

CEDD : concernées

Communes concernées

« Pour contrôle et suivi »

DGGE

« Pour contrôle et suivi »

MZBA

« Pour le rapport »

Antananarivo, le

20 MAI 2022

**LE DIRECTEUR DES AIRES PROTEGEES, DES RESSOURCES NATURELLES RENOUVELABLES ET DES ECOSYSTEMES**



**RAZAFINDRABE Rinah**  
Ingénieur des Eaux et Forêts

July 15th, 2024

To whom it may concern,

Madagascar Institut pour la Conservation des Ecosystèmes Tropicaux (MICET) is Malagasy non-profit organization based in Antananarivo, Madagascar, and our main partner organization is the Institute for the Conservation of Tropical Environments (ICTE), based at the State University of New York, Stony Brook - USA. We work to provide environmental research and training facilitation services to Malagasy and international scientists. In fact, we will be in charge of getting research and / or export permit from the Ministry of Environments and Forests, the Madagascar National Parks and help to provide Malagasy student / assistant from the University of Antananarivo.

I undersigned, **Dr Benjamin ANDRIAMIHAJA, Executive Director of Madagascar Institut pour la Conservation des Ecosystèmes Tropicaux (MICET)**, will support **Dr Rebecca Lewis** in her long-term project entitled “**Sifaka Research Project**” at the Ankoatsifaka Research Station. We will assist her in Administrative paperwork and all logistical support. Moreover we collaborate with the Madagascar National Parks and the University of Antananarivo.

If we may be of further assistance, please contact us at **micet@moov.mg** or at **+261 20 79 557 90**.

Sincerely,



**Dr Benjamin ANDRIAMIHAJA**



SECRETARIAT GENERAL

DIRECTION GENERALE DE LA GOUVERNANCE  
ENVIRONNEMENTALE

DIRECTION DES AIRES PROTEGEES, DES  
RESSOURCES NATURELLES RENOUVELABLES  
ET DES ECOSYSTEMES.

AUTORISATION DE RECHERCHE

N° 008 /23/MEDD/SG/DGGE/DAPRNE/SCBE.Re  
(Renouvellement de l'AR N°127/22 du 20/05/2022)

NOM ET PRENOM

Rebecca Lewis

FONCTION

Chercheur

ACCOMPAGNE DE

Andriamampandrisoa Tanteliniaina Maximain, Gabrielle Bueno, Fidisoa  
Rasambainarivo, Eliette Noromalala, Jean Claude Razafimampindra, Ravaka  
Rambeloson, un représentant CAFF/CORE

ORGANISME TUTEL

Mention : Zoologie et Biodiversité Animale (MZBA)-BP 906 Tana 101-

LIEU

Parc National de Kirindy Mitea et ses zones périphériques

DUREE

Six (06) mois à partir de la date de signature de l'Autorisation

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- Collecte de tissus par deux biopsies auriculaires (biopsie de 2X2 mm)

- Collecte d'ectoparasites à l'aide de pince à épiler, collecte d'échantillons d'urine

- Collecte d'échantillons de matières fécales pour analyses hormonales

- Collecte de données phénologique : localisation GPS, espèce, Hauteur....

- Collecte d'échantillons de plantes (fruit, feuille...) nourritures de l'espèce cible

AUCUN DEVELOPPEMENT DE PRODUITS N'EST AUTORISE

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échantillons de tissus stockés dans 40 tubes (2g par échantillons =80g), échantillons d'ectoparasites à partir de vingt (20)  
individus dans 40 tubes, trois (03) échantillons de plante séchées par espèces à partir de trente (30) espèces) : total 90

(LISTE DES ESPECES PRES IDENTIFIE PAR L'INSTITUTION DEMANDEUR APRES ANALYSE DU  
RAPPORT PRELIMINAIRE)

OBLIGATIONS DU TITULAIRE :

- Négocier avec les gestionnaires et/ou comité de gestion des sites ou forêts transférées pour y accéder, le cas échéant

- **Effectuer une restitution au niveau Régional avec le procès-verbal y afférent signé par le DREDD ou son représentant**

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concernées avant toute descente sur terrain conformément à la note n° 394- 10/MEF/SG/DGF/DVRN/SGFF du 18 Mai  
2010 de la localité de recherche

- Remettre à la Direction des Aires Protégées, des Ressources Naturelles renouvelables et des Ecosystèmes, en quatre (04)  
exemplaires EN FRANÇAIS, le rapport préliminaire à la fin de sa mission et le rapport final avec les résultats des recherches  
au plus tard UN an après la mission, en versions papier et électronique.

- **Respecter la réglementation en matière forestière et toute irrégularité aux mentions de l'Autorisation de Recherche  
est considéré comme un délit forestier**

- Pour tout transport de produits de collecte (faune et flore), avoir un procès-verbal de constatation des collectes effectuées  
par le CEDD concerné et autorisation de transport délivré par DREDD si le déplacement se fait en dehors de la région et  
remettre une copie au DAPRNE

- Pour toute exportation : remettre une copie du dépôt au DAPRNE et une autre au dossier d'exportation

AMPLIATIONS :

CAFF/CORE

DREDD : Menabe

CEDD : concernées

Communes concernées

« Pour contrôle et suivi »

DGGE

« Pour contrôle et suivi »

MZBA

« Pour le rapport »

Antananarivo, le

1 JAN 2023

**LE DIRECTEUR DES AIRES PROTEGEES, DES  
RESSOURCES NATURELLES RENOUVELABLES  
ET DES ECOSYSTEMES**



**BAKARIZAFY Jean Hervé**



SECRETARIAT GENERAL

DIRECTION GENERALE DE LA GOUVERNANCE  
ENVIRONNEMENTALE

DIRECTION DES AIRES PROTEGEES, DES  
RESSOURCES NATURELLES RENOUVELABLES  
ET DES ECOSYSTEMES.

AUTORISATION DE RECHERCHE

N° 364 /21/MEDD/SG/DGGE/DAPRNE/SCBE.Re  
(Remplacement de l'AR N°015/21 du 12/02/2021)

**NOM ET PRENOM**

Rebecca Lewis

**FONCTION**

Chercheur

**ACCOMPAGNE DE**

Andriamampiantrisoa Tanteliniana Maximain, Diary Nandrianina Razafimandimby,  
Laura Maas, Evan Parker, Un étudiant étranger, Enafa, un représentant CAFF/CORE

**ORGANISME TUTEL**

Mention : Zoologie et Biodiversité Animale (MZBA)

**LIEU**

Parc National de Kirindy Mitea et ses zones périphériques

**DUREE**

Six (06) mois à partir de la date de signature de l'Autorisation

**EST AUTORISE (E) A FAIRE DES RECHERCHES SUR :**

« Ecologie comportementale des Sifaka : *Propithecus verreauxi* »

**MENTION SPECIALE D'ACTIVITES**

**Espèce cible :** *Propithecus verreauxi*

- Capture avec relâche de 20 individus (ces individus comprennent : 4 remplacements de collier radio, les 4 juvéniles non marqués nés en 2019, 3 individus du groupe XI [dont 1 collier émetteur], les 5 subadultes susceptibles de se disperser dans un avenir proche, 1 mâle non marqué qui rejoint les groupes d'étude, 1 mâle qui a été solitaire et errant dans la zone d'étude, plus la possibilité de capture jusqu'à 2 individus non marqués qui migrent dans la population

- Collecte d'ectoparasites à l'aide de pince à épiler

- Collecte de tissus par deux biopsies auriculaires (biopsie de 2x2 mm)

- Collecte d'échantillons de matières fécales pour analyses hormonales

- Collecte de données phénologique : localisation GPS, espèce, Hauteur....

AUCUN DEVELOPPEMENT DE PRODUITS N'EST AUTORISE

**EXPORTATION :** Quatre-vingt (80) échantillons de matières fécales, quarante (40) échantillons de tissus, ectoparasites de *Propithecus verreauxi*

**OBLIGATIONS DU TITULAIRE :**

- Négocier avec les gestionnaires et/ou comité de gestion des sites ou forêts transférées pour y accéder, le cas échéant

- **Effectuer une restitution au niveau Régional avec le procès-verbal y afférent signé par le DREDD ou son représentant**

- Faire viser la présente par la Direction Régionale de l'Environnement et du Développement Durable et/ou DREDD concernées avant toute descente sur terrain conformément à la note n° 394- 10/MEF/SG/DGF/DVRN/SGFF du 18 Mai 2010 de la localité de recherche

- Remettre à la Direction des Aires Protégées, des Ressources Naturelles renouvelables et des Ecosystèmes, en quatre (04) exemplaires EN FRANÇAIS, le rapport préliminaire à la fin de sa mission et le rapport final avec les résultats des recherches au plus tard UN an après la mission, en versions papier et électronique.

- **Respecter la réglementation en matière forestière et toute irrégularité aux mentions de l'Autorisation de Recherche est considéré comme un délit forestier**

- Pour tout transport de produits de collecte (faune et flore), avoir un procès-verbal de constatation des collectes effectuées par le CEDD concerné et autorisation de transport délivré par DREDD si le déplacement se fait en dehors de la région et remettre une copie au DAPRNE

- Pour toute exportation : remettre une copie du dépôt au DAPRNE et une autre au dossier d'exportation

**AMPLIATIONS :**

CAFF/CORE

DREDD : Menabe

CEDD : concernées

Communes concernées

« Pour contrôle et suivi »

DGGE

« Pour contrôle et suivi »

MZBA

« Pour le rapport »

Antananarivo, le

17 SEPT 2021

**LE DIRECTEUR DES AIRES PROTEGEES, DES  
RESSOURCES NATURELLES RENOUVELABLES  
ET DES ECOSYSTEMES** pi



**RAMANANTSOA Ssheno**  
Ingénieur des Eaux et Forêts



SECRETARIAT GENERAL

DIRECTION GENERALE DE LA GOUVERNANCE  
ENVIRONNEMENTALE

DIRECTION DES AIRES PROTEGEES, DES  
RESSOURCES NATURELLES RENOUVELABLES  
ET DES ECOSYSTEMES.

N° 040 /24/MEDD/SG/DGGE/DAPRNE/SCBE.Re  
(Renouvellement de l'AR N°241/23 du 11/07/2023)

NOM ET PRENOM

FONCTION

ACCOMPAGNE DE

Rebecca Lewis

Chercheur

Andriamampiantrisoa Tantelinirina, Fidisoa Rasambainarivo, Eliette  
Noromalala, Herrimann Tehindrazanarivelo, Ravaka Rambelison, un  
représentant CAFF/CORE

ORGANISME DE TUTELLE

Mention : Zoologique et Biodiversité Animale (MZBA)-BP 906 Tana 101-  
PN Kirindy Mitea et ses zones périphériques

LIEU

Six (06) mois à partir de la date de signature de l'Autorisation

DUREE

EST AUTORISE (E) A FAIRE DES RECHERCHES SUR :

« Ecologie de comportement de *Propithecus verreauxi* »

MENTION SPECIALE D'ACTIVITES Voir liste en annexe 1

EXPORTATION : Quatre-vingt (80) échantillons de matières fécales de quarante (40) individus, quarante (40) tubes  
échantillons de tissus, soixante-deux (62) tubes d'ectoparasites, cent (100) échantillons de plantes à partir de cinquante  
(50) espèces (un échantillon pèse 100g) (LISTE DES ESPECES PRES IDENTIFIE PAR L'INSTITUTION  
DEMANDEUR APRES ANALYSE DU RAPPORT PRELIMINAIRE)

OBLIGATIONS DU TITULAIRE :

- Négocier avec les gestionnaires et/ou comité de gestion des sites ou forêts transférées pour y accéder, le cas échéant
- Effectuer une restitution au niveau Régional avec le procès-verbal y afférent signé par le DREDD ou son représentant
- Faire viser la présente par la Direction Régionale de l'Environnement et du Développement Durable et/ou DREDD concernées avant toute descente sur terrain conformément à la note n° 394- 10/MEF/SG/DGF/DVRN/SGFF du 18 Mai 2010 de la localité de recherche
- Remettre à la Direction des Aires Protégées, des Ressources Naturelles renouvelables et des Ecosystèmes, en quatre (04) exemplaires EN FRANÇAIS, le rapport préliminaire à la fin de sa mission et le rapport final avec les résultats des recherches au plus tard UN an après la mission, en versions papier et électronique.
- Respecter la réglementation en matière forestière et toute irrégularité aux mentions de l'Autorisation de Recherche est considéré comme un délit forestier
- Pour tout transport de produits de collecte (faune et flore), avoir un procès-verbal de constatation des collectes effectuées par le CEDD concerné et autorisation de transport délivré par DREDD si le déplacement se fait en dehors de la région et remettre une copie au DAPRNE
- Pour toute exportation : remettre une copie du dépôt au DAPRNE et une autre au dossier d'exportation
- Co-autorship des contributeurs scientifiques dans tous les publications scientifiques issue de ce permit de recherche

AMPLIATIONS :

CAFF/CORE

DREDD : Menabe

CEDD : concernées

Communes concernées

« Pour contrôle et suivi »

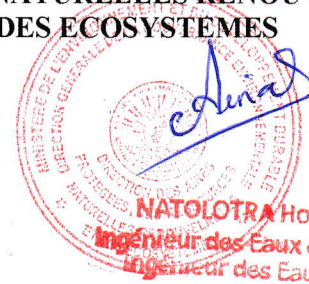
DGGE

« Pour contrôle et suivi »

MZBA

« Pour le rapport »

Antananarivo, le **15 FEV 2024**  
LE DIRECTEUR DES AIRES PROTEGEES, DES  
RESSOURCES NATURELLES RENOUVELABLES  
ET DES ECOSYSTEMES



**NATOLOTRA Ho Aina**  
Ingénieur des Eaux et Forêts  
Ingénieur des Eaux et Forêt

## ANNEXE 1 : MENTION SPECIALE D'ACTIVITES

N° 040 /24/MEDD/SG/DGGE/DAPRNE/SCBE.Re  
(Renouvellement de l'AR N°241/23 du 11/07/2023)

- **Espèce cible** : *Propithecus verreauxi*
- Capture avec relâche de trente un (31) individus pour marquage à l'aide de colliers en nylon ;
- Collecte d'échantillons de tissus sur vingt (20) individus pour analyse génétique ;
- Collecte d'échantillons d'ectoparasites à partir de trente un (31) individus pour analyse des infections zoonotiques ;
- Collecte d'échantillons de matières fécales pour analyses hormonales ;
- Collecte de données phénologiques : localisation GPS, espèce, Hauteur, ...
- Collecte d'échantillons de plantes (fruit, feuille,...) nourritures de l'espèce cible

AUCUN DEVELOPPEMENT DE PRODUITS N'EST AUTORISE

Antananarivo, le

**15 FEV 2024**

**LE DIRECTEUR DES AIRES PROTEGEES, DES RESSOURCES  
NATURELLES RENOUVELABLES ET DES ECOSYSTEMES**







The University of Texas at Austin  
Institutional Animal Care and Use Committee  
**NOTICE OF APPROVAL**

AAALAC Accredited Since October 29, 2001  
PHS Animal Welfare Assurance Number D16-00592 (A4107-01)  
U.S. Department of Agriculture Registration Number 74-R-0029

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**Protocol ID:** AUP-2023-00121 - NEW

**Principal Investigator(s):** Rebecca Lewis

**Protocol Title:** Behavioral Ecology of Verreaux's Sifaka

**Protocol Approved Until:** 09/10/2026

The protocol ID listed above was approved on 09/11/2023

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The Animal Welfare Act and the Public Health Service Policy on the Humane Care and Use of Laboratory Animals require that the Institutional Animal Care and Use Committee review all use of vertebrate animals. This Animal Utilization Proposal (AUP, or protocol) must be reviewed and updated annually.

ANY change(s) to the approved protocol (i.e., personnel, procedure(s), funding source(s), etc.) must be submitted to and approved by the IACUC prior to being implemented. Any vertebrate animal expenses must be paid according to university policy and procedures.

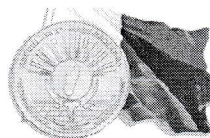
This Approval DOES NOT VERIFY congruence with any grant funding source. Please contact the IACUC to request verification of congruence for grant award submissions.

The Principal Investigator is responsible for obtaining applicable approvals from other departments or compliance committees such as the Office of Environmental Health and Safety, Institutional Biosafety Committee, Radiation Safety Committee, etc. prior to initiating that portion of the IACUC-approved work.

Please contact the Office of Research Support and Compliance with any questions, comments, or concerns.  
voice: (512) 471-8871 | web: <https://research.utexas.edu/ors/animal-research/> | email: [IACUC@austin.utexas.edu](mailto:IACUC@austin.utexas.edu)



SECRETARIAT GENERAL



REPUBLIKAN'I MADAGASIKARA  
Fitiavana - Tanindrazana - Fandrosoana

DIRECTION GENERALE DE L'ENVIRONNEMENT  
ET DES FORETS

AUTORISATION DE RECHERCHE

DIRECTION DE LA GESTION DES RESSOURCES  
NATURELLES RENOUVELABLES ET DES  
ECOSYSTEMES

N° ~~206~~ 19/MEDD/SG/DGEF/DGRNE

(Renouvellement de l'AR N°310/18 du 18/12/2018)

NOM ET PRENOM

Rebecca Lewis

FONCTION

Chercheur

ACCOMPAGNE DE

Maximain Tantelinaiaina Andriamampiantrisoa, Andrianirina Todisoa  
Maxime, Damien Caillaud, Margaret Crofoot, un étudiant étranger et un  
étudiant MZBA

ORGANISME TUTEL

Mention Zoologie et Biodiversité Animale (MZBA)-BP 906-Antananarivo

LIEU

PN Kirindy Mitea et ses zones périphériques

DUREE

Six (06) mois à partir Août 2019.

EST AUTORISE (E) A FAIRE DES RECHERCHES SUR :

« Ecologie comportementale des Sifaka : *Propithecus verreauxi* »

MENTION SPECIALE D'ACTIVITES

- Observation et recensement de *Propithecus verreauxi*,
- Capture avec relâche après mensuration et collecte d'échantillons de tissus (1 fois par individu),
- Collecte de matières fécales et d'urines pour diverses analyses,
- Collecte de données sociales, écologique, comportementales, morphologiques et alimentaires par focal animal sampling,
- Synthèse mensuelle des Sifaka à l'intérieur de la zone d'étude,
- Collecte de données DPH sur les plantes sources de nourritures et suivi phénologique,
- Collecte mensuelle de données phénologiques.

AUCUN DEVELOPPEMENT DE PRODUITS N'EST AUTORISE

EXPORTATION : Echantillons de matières fécales et d'urines, quinze (15) échantillons de tissus à partir de quinze (15) individus pour analyses génétiques.

OBLIGATIONS DU TITULAIRE :

- Négocier avec les gestionnaires et/ou comité de gestion des sites ou forêts transférées pour y accéder, le cas échéant
- **Effectuer une restitution au niveau Régional avec le procès-verbal y afférent signé par le DREDD ou son représentant**
- Faire viser la présente par la Direction Régionale de l'Environnement et du Développement Durable et/ou DREDD concernées avant toute descente sur terrain conformément à la note n° 394-10/MEF/SG/DGF/DVRN/SGFF du 18 Mai 2010 de la localité de recherche
- Remettre à la Direction de la Gestion des Ressources Naturelles renouvelables et des Ecosystèmes, en quatre (04) exemplaires EN FRANÇAIS, le rapport préliminaire à la fin de sa mission et le rapport final avec les résultats des recherches au plus tard UN an après la mission, en versions papier et électronique.
- **Respecter la réglementation en matière forestière et toute irrégularité aux mentions de l'Autorisation de Recherche est considéré comme un délit forestier**
- Pour tout transport de produits de collecte (faune et flore), avoir un procès-verbal de constatation des collectes effectuées par le CEDD concerné et autorisation de transport délivré par DREDD si le déplacement se fait en dehors de la région et remettre une copie au DGRNE
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AMPLIATIONS :

CAFF/CORE

DREDD : Menabe

CEDD : concernées

Communes concernées

« Pour contrôle et suivi »

DGEF

« Pour contrôle et suivi »

MZBA

« Pour le rapport »

Antananarivo, le

20 AOUT 2019

LE DIRECTEUR DE LA GESTION DES RESSOURCES  
NATURELLES RENOUVELABLES ET DES  
ECOSYSTEMES



PAKOTOARIDERA Rantonirina

## TRACY M. MONTGOMERY

Max Planck Institute of Animal Behavior  
Department for the Ecology of Animal Societies  
Bücklestraße 5a, 78467 Konstanz, Germany  
Email: [tmontgomery@ab.mpg.de](mailto:tmontgomery@ab.mpg.de)  
Web: <http://tracymontgomery.weebly.com>

I am a behavioral ecologist interested in how group-living animals cope with individual, social, and ecological demands in fluctuating environments. I am a lead researcher at two long-term field sites: the Mara Hyena Project in Kenya (where I study social carnivores, spotted hyenas) and the Sifaka Research Project in Madagascar (where I study social lemurs, Verreaux's sifaka). In my research, I combine observational, remote sensing, and laboratory approaches to understand how individual physiological and behavioral processes produce group- and community-level social dynamics in wild populations.

### EDUCATION

---

- 2013 – 2020 Dual PhD, Michigan State University, East Lansing MI  
Zoology and Ecology, Evolution, and Behavior (EEB)  
Dissertation: Physiological mediation of social behavior in group-living carnivores  
Advisor: Dr. Kay E. Holekamp
- 2006 – 2010 B.A. Biology (*cum laude*) and French, Amherst College, Amherst MA

### RESEARCH and ACADEMIC POSITIONS

---

- 2021 – pres. Universität Konstanz,  
Centre for the Advanced Study of Collective Behaviour, Konstanz DE  
Research affiliate
- 2020 – pres. Max Planck Institute of Animal Behavior, Konstanz DE  
Postdoctoral researcher. Supervisors: Dr. Meg Crofoot & Dr. Rebecca Lewis
- 2016 – 2020 Michigan State University, PhD candidate
- 2015 – 2016 University of Michigan, Core Assay Facility, Ann Arbor MI  
Lab-based endocrine research for PhD. Supervisor: Dr. Jacinta Beehner
- 2014 – 2015 Michigan State University, Mara Hyena Project, Maasai Mara, Kenya  
Field-based observational research for PhD. Supervisor: Dr. Kay Holekamp
- 2013 – 2014 Michigan State University, PhD student
- 2013 Université de Lausanne, Inkawu Vervet Project, KwaZulu-Natal, South Africa  
Field assistant. Supervisors: Dr. Erica van de Waal & Dr. Erik Willems
- 2011 – 2012 New England Aquarium, Right Whale Research Project, Boston MA & Lubec ME  
Research assistant. Supervisors: Dr. Scott Kraus & Dr. Moira Brown
- 2010 – 2011 Michigan State University, Mara Hyena Project, Maasai Mara, Kenya  
Research assistant and camp manager. Supervisor: Dr. Kay Holekamp
- 2009 – 2010 Amherst College, Clotfelter Research Lab, Amherst MA  
Honors research thesis. Supervisor: Dr. Ethan Clotfelter

## GRANTS, FELLOWSHIPS, and AWARDS

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### Research grants

- 2021 Research Grant from Cluster of Excellence at Universität Konstanz (€138,109)  
“Social transmission of predation risk across wild groups of Verreaux’s sifaka” (lead-PI)
- 2021 DEI Grant from Cluster of Excellence at Universität Konstanz (€3,800)  
“Supporting safe, inclusive, and diverse field biology” (co-PI)
- 2019 Society for Integrative and Comparative Biology Grant-in-Aid of Research (\$900)
- 2018 American Society of Mammalogists Grant-in-Aid of Research (\$1,500)
- 2017 Research Grant from the endowment for Dr. Marvin Hensley (\$8,900)
- 2015 – 2018 Research Grants from the endowment for John R. Shaver (2 grants, total \$2,150)

### Fellowships

- 2019 – 2020 P.E.O. Scholar Award (\$15,000)
- 2018 – 2020 Michigan State University College of Natural Science fellowships  
(3 awards, total \$19,500)
- 2014 – 2020 Michigan State University EEB fellowships (5 awards, total \$9,600)
- 2013 – 2018 National Science Foundation Graduate Research Fellowship (\$138,000)
- 2013 Michigan State University BEACON Top-Up Fellowship (\$5,000, declined)
- 2013 – 2019 Michigan State University Distinguished Fellowship (\$80,000)

### Travel awards

- 2018 International Society for Behavioral Ecology Travel Award (\$500)
- 2017 Animal Behavior Society Graduate Student Travel Award (\$500)
- 2017 Michigan State University Zoology travel grant (\$300)
- 2015 – 2017 Michigan State University EEB travel grants (2 grants, total \$2,990)

### Other awards

- 2020 EEB Distinguished Student Speaker (\$500)

## PUBLICATIONS (\* = mentored co-author)

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### Peer-reviewed journal publications

- 2023 **Montgomery TM**†, Lehmann KDS†, Gregg S\*, Keyser K\*, McTigue LE\*, Beehner JC, Holekamp KE. Determinants of hyena participation in risky collective action. *Proceedings of the Royal Society B* 290: 20231390. doi: 10.1098/rspb.2023.1390  
† = These two authors contributed equally to this work.  
Featured in [Nature News & Views](#), [PNAS Front Matter](#), and [Wissenschaft.de](#).
- 2022 McCormick SK\*, Laubach ZM, Strauss ED, **Montgomery TM**, Holekamp KE. Evaluating drivers of female dominance in the spotted hyena. *Frontiers in Ecology and Evolution* 10: 934659. doi: 10.3389/fevo.2022.934659
- 2022 Laubach ZM, Gering E, Yang E, **Montgomery TM**, Getty T, Holekamp KE. Associations between *Toxoplasma gondii* infection and steroid hormone levels in spotted hyenas. *International Journal for Parasitology: Parasites and Wildlife* 17: 53-59. doi: 10.1016/j.ijppaw.2021.11.007

- 2022 Greenberg JR, **Montgomery TM**, Holekamp KE, Beehner JC. Validation and effects of drying and prey hair on fecal hormone concentrations in spotted hyenas. *Journal of Mammalogy* 103: 394-406. doi:10.1093/jmammal/gyab168
- 2022 **Montgomery TM**, Greenberg JR, Gunson JL\*, John K\*, Laubach ZM, Nonnamaker E\*, Person ES\*, Rogers H\*, Ronis EM\*, Smale L, Steinfield KR\*, Strong R\*, Holekamp KE, Beehner JC. Measuring salivary cortisol in wild carnivores. *Hormones and Behavior* 137: 105082. doi: 10.1016/j.yhbeh.2021.105082
- 2021 Laubach ZM, Greenberg JR, Turner JW, **Montgomery TM**, Pioon MO, Sawdy MA, Smale L, Cavalcante RG, Padmanabhan KR, Lalancette C, vonHoldt B, Faulk CD, Dolinoy DC, Holekamp KE, Perng W. Early-life social experience affects offspring DNA methylation and later life stress phenotype. *Nature Communications* 12: 4398. doi: 10.1038/s41467-021-24583-x
- 2021 Gering E, Laubach ZM, Weber PSD, Hussey GS, Lehmann KDS, **Montgomery TM**, Turner JW, Perng W, Pioon MO, Holekamp KE, Getty T. *Toxoplasma gondii* infections are associated with costly boldness toward felids in a wild host. *Nature Communications* 12: 3842. doi: 10.1038/s41467-021-24092-x
- 2018 **Montgomery TM**, Pendleton EL\*, Smith JE. Physiological mechanisms mediating patterns of reproductive suppression and alloparental care in cooperatively breeding carnivores. *Physiology and Behavior* 193: 167-178. doi: 10.1016/j.physbeh.2017.11.006
- 2017 Smith JE, Lehmann KDS, **Montgomery TM**, Strauss ED, Holekamp KE. Insights from long-term field studies of mammalian carnivores. *Journal of Mammalogy* 98: 631-641. doi: 10.1093/jmammal/gyw194
- 2017 Lehmann KDS†, **Montgomery TM**†, MacLachlan SM\*, Parker JM\*, Spagnuolo OS\*, VandeWetering KJ\*, Bills PS, Holekamp KE. Lions, hyenas and mobs (oh my!). *Current Zoology* 63: 313-322. doi: 10.1093/cz/zow07  
 † = These two authors contributed equally to this work.
- 2014 **Montgomery TM**, Brown AC, Gendelman HK\*, Ota M\*, Clotfelter ED. Exposure to 17 $\alpha$ -ethinylestradiol decreases motility and ATP in sperm of male fighting fish *Betta splendens*. *Environmental Toxicology* 29: 243-252. doi: 10.1002/tox.21752
- 2011 Stevenson LM, Brown AC, **Montgomery TM**, Clotfelter ED. Reproductive consequences of exposure to waterborne phytoestrogens in male fighting fish *Betta splendens*. *Archives of Environmental Contamination and Toxicology* 60: 501-510. doi: 10.1007/s00244-010-9561-y

### Book chapters and other publications

- 2020 Gering E, Laubach Z, Weber P, Hussey G, Turner J, Lehmann K, **Montgomery T**, Holekamp K, Getty T. 2020. Time makes you older, parasites make you bolder - *Toxoplasma gondii* infections predict hyena boldness toward definitive lion hosts. *Evolution in Action: Past, Present and Future*. Springer Nature Switzerland. doi: 10.1007/978-3-030-39831-6\_16.
- 2017 **Montgomery TM**, Holekamp KE. Dominance, testosterone, and cortisol. *Encyclopedia of Evolutionary Psychological Science*. Springer International Publishing. doi: 10.1007/978-3-319-16999-6\_1439-1.

## RESEARCH PRESENTATIONS

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### Invited talks

- 2023 Full-Stack Bioacoustics Workshop. Deploying a localization array of passive acoustic monitors in a seasonal Madagascar forest. Konstanz DE.
- 2023 Centre for the Advanced Study of Collective Behaviour Seminar Series. Social information transmission in the wild: How do prey collectively monitor and respond to predation risk? Konstanz DE & Online. Available [online](#).
- 2021 Max Planck Institute of Animal Behavior Seminar Series. Integrating resources, predation risk, and neighboring groups to understand movement choices. Konstanz DE.
- 2020 Long Term Animal Research Seminar Series. Long-term studies of spotted hyenas in Kenya. Online. Available [online](#).
- 2020 Michigan State University EEB Distinguished Student Speaker. Collective action in complex societies. East Lansing MI.
- 2016 University of Michigan Integrative Behavioral Ecology Discussion Group. Social endocrinology of competition and cooperation in spotted hyenas. Ann Arbor MI.

### Conference presentations

- 2020 Holekamp KE, **Montgomery TM**, Strauss ED. Social competition and cooperation affect reproductive success of female spotted hyenas. Society for Integrative and Comparative Biology, Austin TX. Invited oral presentation.
- 2019 **Montgomery TM**, Lehmann KDS, Holekamp KE. Individual participation in cooperative mobbing behavior in spotted hyenas. Animal Behavior Society Conference, Chicago IL.
- 2018 **Montgomery TM**, Lehmann KDS, Holekamp KE. Individual participation in cooperative mobbing behavior. International Society of Behavioral Ecology Conference, Minneapolis MN.
- 2018 **Montgomery TM**, Beehner JC, Holekamp KE. Immediate benefits of social play behavior. Indiana University CISAB Animal Behavior Conference, Bloomington IN.
- 2017 **Montgomery TM**, Beehner JC, Holekamp KE. Adaptive function of social play behavior. Animal Behavior Society Conference, Toronto, Canada.
- 2015 Lehmann KDS, **Montgomery TM**, Holekamp KE. Cooperation and communication in spotted hyenas. Behaviour Conference, Cairns, Australia. Invited oral presentation.
- 2011 Clotfelter ED, Brown AC, **Montgomery TM**, Stevenson LM, Gendelman HK, Ota M. Reproductive consequences of exposure to waterborne phytoestrogens and ethinyl estradiol in male fighting fish *Betta splendens*. Society of Integrative and Comparative Biology Annual Meeting, Salt Lake City UT.

## TEACHING and MENTORING

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### Primary instructor

- 2018 Behavioral Ecology of African Mammals (IBIO490), Kenya. Lead instructor. Redesigned and updated course, including syllabus, lectures, and assignments.
- 2017 Behavioral Ecology of African Mammals (IBIO490), Kenya. Instructor.

### Graduate student instructor (TA)

- 2018 (spring) Ecology Lab (IBIO355L), Michigan State University. Lab instructor.

- 2017 (fall) Ecological Aspects of Animal Behavior (IBIO415), Michigan State University. Discussion instructor.
- 2017 (spring) Environmental Physiology (IBIO483), Michigan State University. Discussion instructor.

### **Invited guest lecturer**

- 2018 – 2019 Ecological Aspects of Animal Behavior (IBIO415), Michigan State University.
- 2015 Behavioral Ecology of African Mammals (IBIO490), Kenya.

### **Undergraduate instructor (TA)**

- 2010 (spring) Adaptation and the Organism (BIOL181), Amherst College. Teaching assistant.
- 2008 (spring) Chemical Principles (CHEM161), Amherst College. Teaching assistant.

### **Thesis supervision**

- 2022 – 2023 Ann-Kathrin Pohle. MSc thesis, Universität Konstanz. Evaluating delayed benefits of juvenile social play in spotted hyenas.

### **Mentoring and advising** (\* = pursued independent research projects with me)

- 2022 – pres. Max Planck ARTEMIS: African Research Talents Experiencing Mentoring in Science (Pierrot Ramanamandimby\*). Organized international visit and taught Intro to R workshop for a group of African PhD students as part of this program.
- 2022 – pres. Graduate research assistants from Université d'Antananarivo, Madagascar (Harinjara Rafaliarintsoa\*, Jean-Claude Razafimampandra, Haja Fabrice Razafindrabe\*)
- 2021 – pres. Undergraduate and post-baccalaureate research assistants from Universität Konstanz (Axel Bauer, Miriam Dietrich, Alexia Freude, Selina Grosse, Ann-Kathrin Pohle, Svenja Sausen, Kevin Schuster, Maximiliane Ziefle)
- 2021 – pres. Animal Behaviour Collective (Nathalia Bustamante, Anuska Mohapatra)
- 2014 – 2020 14 mentee-led conference posters presented at American Society of Mammalogists Annual Meeting, Animal Behavior Society Conference, Mid-Michigan Symposium for Undergraduate Research Experiences, and University Undergraduate Research and Arts Forum. Two posters by different mentees won a First Place Award (each \$100).
- 2014 – 2020 Undergraduate research assistants from Michigan State University (Kylie Ayers, Ally Brown, Hanna Burton, Ashley Dunn\*, Rachel Gaines, Kara Hartunian, Jenna Parker, Sara Saikalis, Olivia Spagnuolo, Kelsey VandeWetering)
- 2019 SROP: Summer Research Opportunities Program (Jessica Calvario\*)
- 2018 – 2019 MI-LSAMP: Michigan Louis Stokes Alliance for Minority Participation Program (Candice Rivers\*)
- 2016 – 2019 Professorial Assistantship Program (Julie Javorka\*, Abby Shaw, Eliza Turnage)
- 2014 – 2016 Beckman Scholars Program (Sarah MacLachlan\*)
- 2014 – 2015 NSF IRES: International Research Experience for Students Program (Matt Farr, Spencer Freeman, Molly McEntee, Chase O'Neil, Heidi Rogers, Ashlei Tinsley)

**Professional development** (only full-day or longer experiences included)

- 2024 Sign up! Career Building Program. Full-year professional development program for female postdocs pursuing an academic career.
- 2022 Laboratory Animal Science Course on Non-Human Primates. Five-day FELASA certification course about ethics and welfare in primate research.
- 2021 Advanced Wilderness First Aid Course. Four-day course by Outdoor Schule Süd.
- 2019 (spring) Teaching College Science (ISE870). Semester-long class.
- 2019 Graduate School Leadership Academy. 8-week professional development workshop series. Created mentoring expectations and assessment resource [guide](#).
- 2019 Natural Science Cultural Competency Training. Full-day workshop.
- 2018 Graduate School Leadership Summit. Full-day workshop.
- 2016 (fall) Professional Development (IBIO801). Semester-long class.

**SERVICE and OUTREACH**

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**Academic service**

- 2022 – pres. Bücklestraße Social Hour Coordinator, Max Planck Institute of Animal Behavior.
- 2018 – pres. Reviewer for *American Journal of Primatology*, *Animals*, *Behavioral Ecology and Sociobiology*, *Biology Letters*, *Conservation Physiology*, *Hormones and Behavior*, *Integrative and Comparative Biology*, *Journal of Mammalogy*, *Theriogenology Wild*.
- 2023 – 2024 Organizer for Gesellschaft für Primatologie Conference, Universität Konstanz.
- 2023 – 2024 Institute Seminar Organization Committee, Max Planck Institute of Animal Behavior.
- 2021 – 2022 Diversity Committee, Centre for the Advanced Study of Collective Behaviour.
- 2020 – 2021 Contributor to Open Data Science workshop and Github, Max Planck Institute of Animal Behavior.
- 2019 – 2020 Graduate student representative, EEB Academic Program Committee, Michigan State University.
- 2019 Updated departmental best practices in graduate mentoring and redesigned departmental annual progress report for Integrative Biology (found [here](#)). Contributed to Michigan State University Graduate School Mentoring Implementation [Toolkit](#).
- 2018 – 2019 Graduate student representative, Integrative Biology Department Meetings, Michigan State University.
- 2017 – 2018 Graduate student representative, Integrative Biology Graduate Affairs Committee, Michigan State University.

**Public outreach**

- 2022 [Field Perspectives](#). Founder of a blog that aims to promote safe, inclusive, and diverse field research.
- 2016 – 2020 [Biology on Tap](#), Lansing MI. Founder and organizer of a monthly pub talk series.



- 2014 – 2019 Michigan State University Science Festival, East Lansing MI. Leader/presenter of public workshops about evolution in action, and designer/presenter of interactive activities.
- 2014 – 2019 Girls Math & Science Day, East Lansing MI. Designer/presenter of interactive activities for girls in grades 6-8 about field research.
- 2014 – 2019 Darwin Discovery Day at the Michigan State University Museum, East Lansing MI. Designer/presenter of interactive activities for K-12 students about biology.
- 2014 – 2018 Potter Park Zookambi, Lansing MI. Teacher at a zoo-sponsored field ecology summer camp for grades 8-12.
- 2014 – 2015 Learning to Love Hyenas, Maasai Mara, Kenya. Presenter of weekly educational talks about spotted hyena biology at tourist lodges.
- 2014 – 2015 Mara Hyena Project blog and Instagram, Maasai Mara, Kenya.
- 2008 – 2010 Beneski Museum of Natural History, Amherst MA. Collections assistant and museum tour guide.

## **SKILLS**

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**Field:** behavioral data collection, biological sample collection and storage, animal immobilization and collaring, field camp and vehicle maintenance, international permitting

**Lab:** hormone extraction from feces and saliva, radio- and enzyme-immunoassays (validation and assay)

**Software:** Adobe Audition, BORIS, MS Access, MS Office, R, QGIS

**Languages:** English (native), French (advanced), German (basic), Swahili (basic)

## REBECCA J. LEWIS

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### EDUCATION

- 2004 **Ph.D.** Biological Anthropology & Anatomy, Duke University
- 1994 **B.A. (*cum laude*)** Duke University  
Degrees: Biological Anthropology & Anatomy; Philosophy.  
Certificates: Art; Primatology.

### PROFESSIONAL APPOINTMENTS

- 2020-present **Professor:** Department of Anthropology, University of Texas at Austin
- 2012-2020 **Associate Professor:** Department of Anthropology, University of Texas at Austin
- 2011-present **Adjunct Graduate Faculty** Texas State University
- 2006-present **Founder and Director,** Ankoatsifaka Research Station, Madagascar
- 2005-2012 **Assistant Professor:** Department of Anthropology, University of Texas at Austin
- 2007-2010 **Assistant Professor:** Department of Veterinary Sciences, Michale E. Keeling Center for Comparative Medicine & Research, UT MD Anderson Cancer Center
- 2004-2005 **Lecturer and Research Fellow:** Department of Anthropology, University of Texas at Austin

### REFEREED JOURNAL PUBLICATIONS

*\*graduate student co-author; \*\*undergraduate student co-author*

\*Hays A, Birr M, Peñaherrera-Aguirre M, Cook E, **Lewis R**, Tecot S (to be submitted August 2024) Comparison of sample extraction and storage methods across time for fecal progesterone analysis in female Verreaux's sifaka.

Veilleux C, Tecot SR, **Lewis RJ** (in review) Fat storage and drought tolerance in a seasonally-adapted primate: Implications for models of global climate change. [Integrative Conservation](#).

Asangba A, \*Donahue ME, \*Lamb AR, Lewis RJ, Junge RE, Irwin MT, Leigh SR, Stumpf R (in review) Factors influencing the gut microbiome of closely related lemurs. [PeerJ](#)

\*Rakotomalala EJ, Rakotomanana HF, Louis EE, **Lewis RJ** (in revision) Effects of forest characteristics on mouse lemur (*Microcebus murinus*) abundance. [Primates](#).

\*Bueno G, Lewis RJ (2024) Wild Verreaux's sifaka (*Propithecus verreauxi*) respond flexibly to sperm competition in their social environment. International Journal of Primatology. DOI: 10.1007/s10764-024-00437-3

Axel AC, \*Harshbarger BM, **Lewis RJ**, Tecot SR (2024) Consistency in Verreaux's sifaka home range and core area size despite seasonal variation in resource availability. American Journal of Primatology. 86(6): e23617. DOI: 10.1002/ajp.23617.

Eppley TM, Reuter KE, Sefczek TM, ... **Lewis RJ**, ... Mittermeier RA (2024) Tropical field stations yield high conservation return on investment. Conservation Letters. 17(2): e13007 DOI: 10.1111/conl.13007

\*Rakotomalala EJ, Rakotomanana HF, Louis EE, **Lewis RJ** (2023) Variation de la masse et des caractères morphologiques des lémuriens nocturnes dans les forêts primaires et dégradées de Menabe Sud, Belo sur Mer, Madagascar. Madagascar Conservation and Development. 18(1):22-30: DOI: 10.4314/mcd.v18i1.3

**Lewis RJ**, Kirk EC, Gosselin-Ildari AD (2023) Evolutionary patterns of intersexual power. Animals. 13(23):3695. DOI: 10.3390/ani13233695.

\*Romanello D, Thompson KET, Borgerson C, Randriamanetsy JM, Andriamavosoloarisoa NNM, Andrianantenaina MY, Razafindrahasy TA, Surkis C, Wright PC, Twiss KC, **Lewis RJ** (2023) A nuanced examination of primate harvests and human socio-economic well-being in Kirindy Mitea National Park, Madagascar. Animals. 13(18):2914. DOI: 10.3390/ani13182914.

\*Gnanadesikan GE, Hammock E, Tecot SR, **Lewis RJ**, Hart R, Carter CS, MacLean EL (2022) What are oxytocin assays measuring? Epitope mapping, metabolites, and comparisons of wildtype & knockout mouse urine. Psychoneuroendocrinology 143: 105827.

Asangba A, Mugisha L, Rukundo J, **Lewis R**, Halajian A, Cortés-Ortiz L, Junge R, Irwin M, Karlson J, Perkin A, Watsa M, Erkenwick G, Bales K, Leigh S, Stumpf R (2022) Large comparative analyses of primate microbiomes indicate that the oral microbiome is distinct relative to other body site microbiomes. Spectrum 10(3):e01643-21. DOI: 10.1128/spectrum.01643-21

\*Rakotomalala EJ, Rakotomanana HF, Louis EE, **Lewis RJ** (2022) Effets des structures forestières sur l'occurrence et la préférence en microhabitat des lémuriens nocturnes de la forêt sèche de Menabe Sud, Madagascar. Afrique Science. 20(3), 1-12.  
<http://www.afriquescience.net/PDF/20/3/1.pdf>

**Lewis RJ**, \*Bueno GL, Di Fiore A (2022) Variation in Female Leverage: The Influence of Kinship and Market Effects on the Extent of Female Power over Males in Verreaux's Sifaka. Frontiers in Ecology and Evolution. 10:851880. DOI:10.3389/fevo.2022.851880

**Lewis RJ** (2022) Aggression, rank, and power: Why hens (and other animals) do not always peck according to their strength. Philosophical Transactions of the Royal Society B. 377, 20200434. DOI:10.1098/rstb.2020.0434

Perofsky A, Meyers LA, Abondano L, Di Fiore A, **Lewis RJ** (2021) Social groups constrain the spatiotemporal dynamics of wild sifaka gut microbiomes. Molecular Ecology. 30(24): 6759–6775. DOI:10.1111/mec.16193

Colchero F, Aburto JM, Archie EA, Boesch C, Breuer T, Campos FA, Fedigan LM, Fichtel C, Groenenberg M, Hobaiter C, Kappeler PM, Lawler RR, **Lewis RJ**, Machanda ZP, Manguette ML, Muller MN, Packer C, Parnell RJ, Perry S, Pusey AE, Robbins MM, Seyfarth RM, Silk JB, Sterck J, Stoinski TS, Stokes EJ, Strier KB, Strum SC, Tung J, Villavicencio F, Witting RM, Wrangham RW, Zuberbühler K, Vaupel JW, Alberts SC (2021) The long lives of primates and the ‘invariant rate of ageing’ hypothesis. Nature Communications 12:3666. DOI: 10.1038/s41467-021-23894-3

**Lewis RJ**, Sandel AA, \*\*Hilty S, \*\*Barnett SE (2020) Numerical superiority does not explain success in intergroup encounters in Verreaux’s sifaka (*Propithecus verreauxi*). International Journal of Primatology. 41:305–324. DOI: 10.1007/s10764-020-00155-6

**Lewis RJ** (2020) Female power: A new framework for understanding “female dominance” in lemurs. Folia Primatologica. 91(1): 48-68. DOI: 10.1159/000500443

Mann AE, Mazel F, Lemay M, Morien E, Kowalewski M, Di Fiore A, Link A, Goldberg T, Tecot S, Baden A, Gomez A, Sauter SL, Cuzzo F, Britton GAO, Dominy NJ, Stumpf R, **Lewis RJ**, Swedell L, Amato A, Wegener Parfrey L (2019) Biogeography of protists and nematodes in the wild non-human primate gut microbiome. International Society for Microbial Ecology Journal. 14:609-622. DOI: 10.1038/s41396-019-0551-4

\*Voyt RA, \*Ortiz KM, Sandel AA, **Lewis RJ** (2019) Female power in Verreaux's sifaka (*Propithecus verreauxi*) is based on maturity, not body size. International Journal of Primatology 40(3): 417-434. DOI: 10.1007/s10764-019-00096-9

**Lewis RJ** (2019) Subordination signals improve the quality of social relationships in Verreaux’s sifaka: Implications for the evolution of power structures and social complexity. American Journal of Physical Anthropology 169:599-607. DOI: 10.1002/ajpa.23876

Amato K, Sanders J, Jin Song S, Nute M, Metcalf J, Thompson L, Morton J, Amir A, McKenzie V, Humphrey G, Gogul G, Gaffney J, Baden A, Britton G, Cuzzo F, Di Fiore A, Dominy N, Goldberg T, Gomez A, Kowaleski M, **Lewis R**, Link A, Sauter M, Tecot S, White B, Nelson K, Stumpf R, Knight R, Leigh S (2019) Evolutionary trends in host physiology outweigh dietary niche in structuring primate gut microbiomes. International Society for Microbial Ecology Journal 13:576-587. DOI: 10.1038/s41396-018-0175-0

\*Perofsky A, **Lewis RJ**, Meyers LA (2019) Terrestriality and bacterial transfer: A comparative study of gut microbiomes in sympatric Malagasy mammals. International Society for Microbial Ecology Journal 13:50–63. DOI: 10.1038/s41396-018-0251-5

**Lewis RJ** (2018) Female Power in Primates and the Phenomenon of “Female Dominance”. Annual Review of Anthropology 47:533–551. DOI: 10.1146/annurev-anthro-102317-045958

\*Perofsky A, **Lewis RJ**, \*Abondano L, Di Fiore A, Meyers LA (2017) Hierarchical social networks shape gut microbial composition in wild Verreaux’s sifaka Proceedings of the Royal Society B. 284:20172274. DOI: 10.1098/rspb.2017.2274

\*Rakotomalala E, Rakotondraparany F, \*Perofsky A, **Lewis RJ**. (2017) Characterization of the tree holes used by *Lepilemur ruficaudatus* in the dry, deciduous forest of Kirindy Mitea National Park. Folia Primatologica 88(1): 28-41. DOI: 10.1159/000464406

\*Leimberger K, **Lewis RJ** (2017) Male strategies for changing group membership in Verreaux’s sifaka (*Propithecus verreauxi*). American Journal of Primatology 79:e22455 DOI: 10.1002/ajp.22455

Veilleux CC, Scarry CJ, Di Fiore A, Kirk EC, Bolnick DA, **Lewis RJ** (2016) Group benefit associated with polymorphic trichromacy in a Malagasy primate (*Propithecus verreauxi*). Scientific Reports 6:38418. DOI: 10.1038/srep38418

\*Rasambainarivo FT., Junge RE, **Lewis RJ** (2014) Biomedical evaluation of Verreaux’s sifaka (*Propithecus verreauxi*) from Kirindy Mitea National Park in Madagascar. Journal of Zoo and Wildlife Medicine 45(2):247-255. DOI: 10.1638/2013-0038R1.1

Vanpé C, \*Salmona J, Pais I, Kun-Rodrigues C, Pichon C, Viana Meyler S, Rabarivola C, **Lewis RJ**, Thani Ibouroi M, Chikhi L (2013) Non-invasive molecular sexing: An evaluation and validation of the SRY- and amelogenin-based method in three new lemur species. American Journal of Physical Anthropology 150:492-503. DOI: 10.1002/ajpa.22222

**Lewis RJ**, \*Bannar-Martin KH (2012) The impact of Cyclone Fanele on a tropical dry forest in Madagascar. Biotropica 44(2):135-140. DOI: 10.1111/j.1744-7429.2011.00799.x

**Lewis RJ**, \*Rakotondranaivo F (2011) The impact of Cyclone Fanele on sifaka body condition and reproductions in the tropical dry forest of western Madagascar. Journal of Tropical Ecology 27:429–432. DOI: 10.1017/S0266467411000083

\*Carnes LM, Nunn CL, **Lewis RJ** (2011) Effects of the distribution of female primates on the number of males. PLoS ONE 6(5):e19853. doi:10.1371/journal.pone.0019853

\*Veilleux CC, **Lewis RJ** (2011) Effects of habitat light intensity on mammalian eye shape. Anatomical Record 294:905-914. DOI: 10.1002/ar.21368

**Lewis RJ** (2010) Grooming patterns in Verreaux’s sifaka. American Journal of Primatology 72(3):254-261. DOI: 10.1002/ajp.20776

**Lewis RJ** (2009) Chest staining variation as a signal of testosterone levels in male Verreaux's sifaka. Physiology & Behavior 96:586-592. DOI: 10.1016/j.physbeh.2008.12.020

**Lewis RJ** (2008) Social influences on group membership in *Propithecus verreauxi verreauxi*. International Journal of Primatology 29(5):1249-1270. DOI: 10.1007/s10764-008-9304-3

**Lewis RJ**, van Schaik CP (2007) Bimorphism in male Verreaux's sifaka in the Kirindy Forest of Madagascar. International Journal of Primatology 28(1):159-182. DOI: 10.1007/s10764-006-9107-3

**Lewis RJ** (2006) Scent marking in sifaka: No one function explains it all. American Journal of Primatology 68(6):622-636. DOI: 10.1002/ajp.20256

**Lewis RJ**, Kappeler PM (2005) Seasonality, body condition, and the timing of reproduction in *Propithecus verreauxi verreauxi*. American Journal of Primatology 67(3):347-364. DOI: 10.1002/ajp.20187

**Lewis RJ**, Kappeler PM (2005) Are Kirindy sifaka capital or income breeders? It depends. American Journal of Primatology 67(3):365-369. DOI: 10.1002/ajp.20190

**Lewis RJ** (2005) Sex differences in scent-marking in sifaka: Mating conflict or male services? American Journal of Physical Anthropology 128(2):389-398. DOI: 10.1002/ajpa.20206

**Lewis RJ**, Razafindrasamba SM, Tolojanahary JP (2003) Observed infanticide in a seasonal breeding prosimian (*Propithecus verreauxi verreauxi*) in Kirindy Forest, Madagascar. Folia Primatologica 74(2):101-103. DOI: 10.1159/000070006

**Lewis RJ** (2002) Beyond dominance: The importance of leverage. The Quarterly Review of Biology 77(2): 149-164. DOI: 10.1086/343899

#### REFEREED JOURNAL PUBLICATIONS AS TABULA *MICROCEBUS* CONSORTIUM

Ming J, Lin Z, Zhao J, Wan X, Tabula *Microcebus* Consortium [including **Lewis RJ**], Yang C, Wu AR. (2022) FIRM: Flexible integration of single-cell RNA-sequencing data for large-scale multi-tissue cell atlas datasets. Brief Bioinformatics. DOI: 10.1093/bib/bbac167

Zhao J, Wang G, Ming J, Lin Z, Wang Y, Tabula *Microcebus* Consortium [including **Lewis RJ**], Wu AR, Yang C. (2022) Adversarial domain translation networks for integrating large-scale atlas-level single-cell datasets. Nature Computational Science. 2: 317-330.

#### REFEREED BOOK CHAPTERS

**Lewis RJ**, Axel AC (2019) Using vegetation phenology and long-term demographic data to assess the impact of Cyclone Fanele on a lemur population in Madagascar. In A Behie, J, N Malone (eds) *Primate Research and Conservation in the Anthropocene* (pp. 216-236). Cambridge: Cambridge University Press. DOI: 10.1017/9781316662021.013

Nunn CL, **Lewis RJ** (2001) Cooperation and collective benefits: applying economic models of collective action to animal behavior. In R Noë, J. A.R.A.M. van Hooff, and P Hammerstein (eds.): Economics in Nature; Social Dilemmas, Mate Choice and Biological Markets, pp.42-66. Cambridge: Cambridge University Press. DOI: 10.1017/cbo9780511752421.005

#### REFEREED ENCYCLOPEDIA CHAPTERS

**Lewis RJ** (2018): Behavioral sampling. International Encyclopedia of Biological Anthropology. Wiley Blackwell. Pp. 165-167. DOI: 10.1002/9781118584538.ieba0047

**Lewis RJ** (2017): Sociobiology. International Encyclopedia of Primatology. Wiley Blackwell. Pp. 1329-1332. DOI: 10.1002/9781119179313.wbprim0407

**Lewis RJ** (2017): Behavioral sampling. International Encyclopedia of Primatology. Wiley Blackwell. Pp. 93-97. DOI: 10.1002/9781119179313.wbprim0083

**Lewis RJ** (2017): Sexual selection. International Encyclopedia of Primatology. Wiley Blackwell. Pp. 1281-1286. DOI: 10.1002/9781119179313.wbprim0060

**Lewis RJ** (2017): Mate choice. International Encyclopedia of Primatology. Wiley Blackwell. Pp. 774-776. DOI: 10.1002/9781119179313.wbprim0157

#### OTHER BOOK CHAPTERS

**Lewis RJ** (2016) Speaking of power. In E Palagi, I Norscia (eds): The Missing Lemur Link: An Ancestral Step in Human Evolution. Cambridge University Press: Cambridge. Pp. 234-237.

Markolf M, Kappeler P, **Lewis R**, Jacky IAY (2013) Site-Based Action Plan: Kirindy-Ambadira (Central Menabe). In C Schwitzer, R Mittermeier, N Davies, S Johnson, J Ratsimbazafy, J Razafindramanana, EE Louis Jr, S Rajaobelina (eds): Lemurs of Madagascar: A Strategy for Their Conservation 2013-2016. IUCN SSC Primate Specialist Group, Bristol Conservation and Science Foundation, Conservation International: Bristol, UK.

**Lewis RJ**, Lawler RR (2013) Verreaux's sifaka. In N Rowe (ed.): All the World's Lemurs, Lorises, Bushbabies, and Pottos: The Primate Suborder Strepsirhini (All the World's Primates Ebook Series). Charlestown, RI: Pogonias Press.

**Lewis RJ**, Lawler RR (2011) Verreaux's Sifaka. In N Rowe, M Myers (eds.): All the World's Primates, www.alltheworldsprimates.org. Primate Conservation Inc., Charlestown RI.

#### BOOK REVIEWS

**Lewis RJ** (2006) *Macaque Societies: A Model for the Study of Social Organization*, by B Thierry et al. New York, Cambridge University Press, 2004, 418 pp. [Book review] American Journal of Physical Anthropology 131(1):149-150. DOI: 10.1002/ajpa.20414

### FIELD REPORTS TO GOVERNMENT AGENCIES

- 2024 Madagascar National Parks, Report of Research Activities, 29p.
- 2024 CAFF/CORE Report: Activite de capture avec relache lemuriens sifaka (*Propithecus verreauxi*) Parc National Kirindy Mitea, 3p.
- 2024 Madagascar National Parks, Report of Research Activities, 12p.
- 2023 CAFF/CORE Report: Activite de capture avec relache lemuriens sifaka (*Propithecus verreauxi*) Parc National Kirindy Mitea, 5p.
- 2023 Madagascar National Parks, Report of Research Activities, 12p.
- 2022 CAFF/CORE Report: Activite de capture avec relache lemuriens sifaka (*Propithecus verreauxi*) Parc National Kirindy Mitea, 7p.
- 2022 Madagascar National Parks, Report of Research Activities, 26p.
- 2021 CAFF/CORE Report: Activite de capture avec relache lemuriens sifaka (*Propithecus verreauxi*) Parc National Kirindy Mitea, 13p.
- 2021 Madagascar National Parks, Report of Research Activities, 26p.
- 2019 Madagascar National Parks, Report of Research Activities, 11p.
- 2018 Madagascar National Parks, Report of Research Activities, 22p.
- 2017 Madagascar National Parks, Report of Research Activities, 15p.
- 2016 Madagascar National Parks, Report of Research Activities, 8p.
- 2016 Madagascar National Parks, Report of Research Activities, 20p.
- 2015 Madagascar National Parks, Report of Research Activities, 16p.
- 2015 Madagascar National Parks, Report of Research Activities, 18p.
- 2014 Madagascar National Parks, Report of Research Activities, 25p.
- 2013 Madagascar National Parks, Report of Research Activities, 15p.
- 2013 Madagascar National Parks, Report of Research Activities, 20p.
- 2012 Madagascar National Parks, Report of Research Activities, 33p.



- 2011 Madagascar National Parks, Report of Research Activities, 60p.
- 2010 Madagascar National Parks, Report of Research Activities, 14p.
- 2009 Madagascar National Parks, Report of Research Activities, 15p.
- 2008 The National Association for the Management of Protected Areas in Madagascar, Report of Research Activities, 14p.
- 2007 The National Association for the Management of Protected Areas in Madagascar, Report of Research Activities, 5p.
- 2007 The National Association for the Management of Protected Areas in Madagascar, Report of Research Activities, 10p.
- 2006 The National Association for the Management of Protected Areas in Madagascar, Report of Research Activities, 5p.

#### GRANTS AWARDED

*\*with/on behalf of graduate student; \*\* with/on behalf of undergraduate student*

#### **Schlumberger Foundation**

Faculty for the Future Fellowship. With Eliette Noromalala\*. August 2024-August 2024

#### **University of Texas Special Research Grant**

Parasite Communities of Mammals in and around Kirindy Mitea National Park, Western Madagascar. January-November 2024

#### **Re:Wild**

Parasite communities of sifaka (*Propithecus verreauxi*), sportive lemurs (*Lepilemur ruficaudatus*), and other mammals species inhabiting Kirindy Mitea National Park, Western Madagascar. With Eliette Noromalala\*. February 2024-December 2024.

#### **Primate Society of Great Britain**

Parasite communities of sifaka (*Propithecus verreauxi*) and sportive lemurs (*Lepilemur ruficaudatus*) inhabiting Kirindy Mitea National Park, Western Madagascar. With Eliette Noromalala\*. May-December 2023.

#### **Schlumberger Foundation**

Faculty for the Future Fellowship. With Eliette Noromalala\*. August 2023-August 2024.

#### **The Leakey Foundation**

Locomotor energetics in sifaka: Contexts and consequences of terrestrial locomotion using arboreal anatomy. Neysa Grider-Potter, Amanda McGrosky, **Rebecca Lewis**, Angel Zeininger, Daniel Schmidt, Roshna Wunderlich. May 2023 – October 2024.

#### **Campbell Foundation**

Lemur Conservation Via Citizen Science in Rural Madagascar. Rebecca Lewis. 2019.

**University of Texas Undergraduate Research Fellowship**

With Samantha Hilty\*\* to study chimpanzee ecology in Tanzania. May-Aug 2018.

**National Science Foundation**

Collaborative Research: The Function and Mechanism of Male Relationships in a Primate System. with Stacey Tecot. January 2018 – February 2022.

**University of Texas Research Grant**

Physiology and the Role of Females in Male Social Bonds. May – August 2017

**National Science Foundation Center Grant: “BEACON: An NSF Science and Technology Center for the Study of Evolution in Action.”**

**\$15,965**

Factors that Influence Gut Microbiota Diversity and Intestinal Bacteria Transmission Dynamics in Wild Lemurs. Lauren Meyers, **Rebecca Lewis**, Amanda Perofsky\*. August 2015-October 2016

**University of Texas COLA Undergraduate\*\* Research Apprenticeship**

Evolution of Sex Ratios in Primate Groups. January-May 2016

**University of Texas Special Research Grant**

Behavioral and morphological influences on paternity distribution in Verreaux's sifaka. December 2015-August 2016

**Margot Marsh Biodiversity Fund**

Inventory and Conservation Genetics of the Nocturnal Primate Community in the Kirindy Mitea National Park, Madagascar. **Rebecca Lewis**, Edward Louis Jr. October 2014-June 2016.

**The Leakey Foundation**

Behavioral and morphological influences on paternity distribution in Verreaux's sifaka. **Rebecca Lewis**, Anthony Di Fiore. May 2013-Aug 2014

**University of Texas Special Research Grant**

Seeing Red and Green: Color-Sensitive Foraging in Lemurs. Oct 2011-Aug 2012.

**University of Texas COLA Undergraduate\*\* Research Apprenticeship**

Behavioral Ecology of Verreaux's Sifaka in the Western Forests of Madagascar. May-Aug 2012.

**University of Texas Summer Research Assignment**

The Effects of a Cyclone on Verreaux's Sifaka in the Kirindy Mitea National Park. Jun-Jul 2010.

**Primate Conservation, Inc.**

The Effects of a Cyclone on Verreaux's Sifaka in the Kirindy Mitea National Park. Jan-Apr 2010.

**Rapaport King Scholarship**

With undergraduate Jessica Graves\*\* to study primate brain evolution. Oct 2010-May 2011.

**University of Texas Undergraduate Research Fellowship**

With undergraduate Jessica Graves\*\* to study primate brain evolution. Mar 2010-Aug 2011.

**Primate Conservation, Inc.**

The Effects of a Cyclone on Verreaux's Sifaka in the Kirindy Mitea National Park. Jan-Dec 2010.

**University of Texas Undergraduate Research Fellowship**

With undergraduate Gordon Ulmer\*\* to study saki monkey vocalizations in Peru. May-Aug 2008.

**University of Texas Research Grant**

The Collective Action Problem in Chimpanzees: A Model for the Evolution of Human Cooperation. Oct 2007-Aug 2008.

**University of Texas Undergraduate\*\* Research Apprenticeship**

The Collective Action Problem in Chimpanzees: A Model for the Evolution of Human Cooperation. Jan-May 2007.

**University of Texas Summer Research Assignment**

Stained Chests in Male Sifaka: A Signal of Male Reproductive Strategy? Jun-Jul 2006.

**Primate Conservation, Inc.**

Exploration of the Forests Near Mitsinjo, Madagascar as a Possible Location for a Long-term Field Study of Northwestern *Propithecus*. May-Aug 2005.

**National Science Foundation Dissertation Improvement Grant**

Sources of Variation in Male-Female Relationships in Verreaux's Sifaka (*Propithecus verreauxi verreauxi*): Intersexual Conflict and Power. Oct 2000-Apr 2002.

**Wenner-Gren Foundation Predoctoral Grant**

Sources of Variation in Male-Female Relationships in Verreaux's Sifaka (*Propithecus verreauxi verreauxi*): Intersexual Conflict and Power. Oct 2000-Apr 2002.

**Leakey Foundation General Research Grant**

Male-Female Relationships in *Propithecus verreauxi verreauxi* in the Kirindy Forest. Oct 2000-Apr 2002.

**Graduate Award for International Research**

Sources of Variation in Male-Female Relationships in Verreaux's Sifaka (*Propithecus verreauxi verreauxi*): Intersexual Conflict and Power. Jun-Aug 2000.

**Graduate Award for International Research**

Socially-Mediated Factors Affecting Seasonal Testicular Function in *Propithecus verreauxi*: Hormonal Mechanisms and Evolutionary Questions. Jun-Aug 1998.

**Latin American Studies Travel Grant**

The Socioecology of Common Marmosets and the Power Dynamics of Their Cooperative Polyandry Mating System. Jul-Aug 1997.

**Graduate Award for International Research**

The Socioecology of Common Marmosets and the Power Dynamics of Their Cooperative Polyandry Mating System. Jul-Aug 1997.

**HONORS AND AWARDS**

- 2020 *Nominee*, Raymond Dickson Centennial Endowed Teaching Fellowship, Department of Anthropology, University of Texas-Austin
- 2019 *Nominee*, Dads' Association Centennial Teaching Fellowship, College of Liberal Arts, University of Texas-Austin
- 2019 *Nominee*, Raymond Dickson Centennial Endowed Teaching Fellowship, Department of Anthropology, University of Texas-Austin
- 2018 College Research Fellowship, University of Texas-Austin
- 2014 Faculty Research Assignment, University of Texas-Austin
- 2005-2006 Fellow, Center for Women's and Gender Studies Faculty Development Program, University of Texas-Austin
- 2003-2004 R. L. Trivers Instructorship, Duke University
- 2003-2004 Julian Price Fellowship, Duke University
- 1996-2001 National Science Foundation Graduate Fellowship

**FIELD STATION, NONPROFIT, & COLONY MANAGEMENT**

- 2023-present **Founder, Board Member**, NGO Ankoatsifaka (Madagascar nongovernmental organization).
- 2021-present **Founder, President, and Board Member**, Ankoatsifaka Initiative for Dry Forests (AID Forests).
- 2006-2024 **Founder and Director**, Ankoasifaka Field Station, Kirindy Mitea National Park, Madagascar.
- 2005-2014 **Co-Founder and Co-Manager**, Mouse lemur colony, University of Texas-Austin.
- 1994-1995 **Director**, Joyce Powzyk's research camp, Mantadia National Park, Madagascar.

## RESEARCH EXPERIENCE / FIELDWORK

- 2021-present** Energetics of Sifaka Locomotion. Kirindy Mitea National Park, Madagascar. **Co-Principal Investigator**. In collaboration with Drs. Neysa Grider-Potter, Amanda McGrosky, Roshna Wunderlich, Daniel Schmitt, Angel Zeininger.
- 2019-present** Fossa Ecology. Kirindy Mitea National Park, Madagascar. **Co-Principal Investigator**. In collaboration with Drs. Margaret Crofoot, Damien Caillaud, and Teague O'Mara.
- 2019-present** Sifaka Collective Ecology. Kirindy Mitea National Park, Madagascar. **Co-Principal Investigator**. In collaboration with Drs. Margaret Crofoot, Damien Caillaud, and Teague O'Mara.
- 2006-present** Behavior and Ecology of Sifaka. Kirindy Mitea National Park, Madagascar. **Principal Investigator**.
- 2019-2020 Tarsier Visual Biology. Tuanan, Indonesia. **Co-Principal Investigator**. In collaboration with Drs. Alexander Huk, Christopher Kirk, Jacob Yates.
- 2014-2019** Inventory and Conservation Genetics of the Nocturnal Primate Community in the Kirindy Mitea National Park, Madagascar. **Principal Investigator**. In collaboration with Edward E. Louis, Jr., Hajanirina Rakotomanana, Elvis Rakotomalala.
- 2010–2018** Disease Ecology of Verreaux's Sifaka. Kirindy Mitea National Park, Madagascar. **Co-Principal Investigator**. In collaboration with Drs. Lauren Meyers, Amanda Perofsky, Damien Caillaud, Randy Junge, Fidisoa Rasambainarivo.
- 2004-2010** Cooperation in Chimpanzees (*Pan troglodytes*). Bastrop, Texas. **Principal Investigator**.
- 2000-2002** Sources of Variation in Male-Female Relationships in Verreaux's Sifaka (*Propithecus verreauxi verreauxi*): Intersexual Conflict and Power. Kirindy Forest, Madagascar. **Principal Investigator**, dissertation research under Carel van Schaik.
- 1998 Socially-Mediated Factors Affecting Seasonal Testicular Function in *Propithecus verreauxi*: Hormonal Mechanisms and Evolutionary Questions. Beza-Mahafaly Special Reserve, Madagascar. Assisted Diane Brockman and Patricia Whitten.
- 1997 Ecological Influences on the Social Organization and Reproductive Strategies in the Common Marmoset (*Callithrix jacchus*). Parque Nacional de Sete Cidades, Brazil. Assisted Leslie Digby.

- 1995-1996** A Comparison of Social Interactions in Pigtailed Monkeys and Rhesus Monkeys. Tulane Regional Primate Research Center. Covington, Louisiana. **Principal Investigator** in collaboration with Margaret Clarke and Marie Hunyen.
- 1994-1995 Socio-ecology of Two Sympatric Indriids: *Propithecus diadema diadema* and *Indri indri*, a Comparison of Feeding Strategies and Their Possible Repercussions on Species Specific Behaviors. Mantadia National Park, Madagascar. Assisted Joyce Powzyk.
- 1993-1994** Sex Differences in Control of Power in *Eulemur fulvus rufus*. Duke University Primate Center. **Principal Investigator** in collaboration with Frances White and Deborah Overdorff.
- 1992 Morphometrics of *Lemur catta* and *Eulemur fulvus rufus*. Duke University Primate Center. Assisted Michael Pereira.

#### INVITED PRESENTATIONS

- 2024 “Power: More Than Aggression and Dominance.” Evolutionary Anthropology, Duke University.
- 2021 “Aggression, Rank, and Power: Why the pecking order is about more than the ability to use force.” Groningen Institute for Evolutionary Life Sciences, University of Groningen, The Netherlands
- 2020 “Female Power in Primates.” Department of Anthropology, University of California-Davis.
- 2019 “Female Power in the Lemurs of Madagascar.” BashFest Symposium. Department of Astronomy. University of Texas-Austin.
- 2019 “Sifaka Behavioral Ecology.” Department of Biology, Universitas Nasional. Jakarta, Indonesia.
- 2018 “Power in Primates.” Symposium in Honor of Carel van Schaik. Institut für Anthropologie, University of Zurich. Zurich, Switzerland.
- 2018 “Maternal Energetic Stress Drives Patterns of Intergroup Encounters in Verreaux’s Sifaka” Symposium: International Primatological Society. Nairobi, Kenya.
- 2018 “Sexual dimorphism and the rise of male dominance.” Symposium: Causes, Context, and Consequences of Human Sexual Dimorphism. American Association of Physical Anthropologists. Austin, TX.

- 2016 “Comparative Analysis of Male Reproductive Strategies on Genus *Propithecus*.” Symposium: 50 Years of Sifakas: Evolutionary Perspectives and Conservation Advances. International Primatological Society. Chicago, Illinois.
- 2015 “The Evolution of Power in Primates.” Anthropologisches Institut & Museum Universität Zürich. Zurich, Switzerland.
- 2014 “Does female dominance facilitate female mate choice? An examination of mate choice in Verreaux’s sifaka (*Propithecus verreauxi*).” Symposium: Female Mate Choice in Non-human Primates and Humans. American Association of Physical Anthropologists. Calgary, Canada.
- 2014 “Male strategies for changing group membership in Verreaux’s sifaka.” Symposium: A change of scene: Group Takeovers and Alpha Male Replacements in Primates. American Association of Physical Anthropologists. Calgary, Canada.
- 2013 “Casting a Wide Net: The Benefits of Capture Data” International Prosimian Congress Workshop on Field Methods in Prosimian Biology: Capture, Anesthesia, Parasites and Disease. Ranomafana, Madagascar.
- 2012 “Alternative Reproductive Tactics: Reversible Bimorphism in a Lemur” Integrative Biology Seminar Series. University of Texas-Austin, Austin, Texas.
- 2010 “The Influence of Seasonal Scarcity on Power Dynamics in Verreaux’s sifaka (*Propithecus verreauxi*).” Symposium: Coping with Resource Scarcity: Diversity in Primate Adaptations. International Primatological Society. Kyoto, Japan.
- 2009 “Primate Social Relationships: Power, Conflict, and Cooperation.” Michale E. Keeling Center for Comparative Medicine & Research, UT MD Anderson Cancer Center. Bastrop, TX.
- 2006 “Biological Markets: The Role of Economics in the Evolution of Cooperation.” University of Texas-Austin Anthropology Seminar Series. Austin, TX.
- 2006 “Male-Female Relationships: Power, Conflict, and Cooperation.” Sam Houston State University Biology Department Seminar Series. Huntsville, TX.
- 2006 “Biological Markets: The Evolution of Cooperation.” University of Texas-Austin Dean’s Scholars. Austin, TX.
- 2006 “Male-Female Relationships: Power, Conflict, and Cooperation.” University of Texas-Austin Evolutionary Psychology Seminar Series. Austin, TX.
- 2004 “Intersexual Conflict in Scent-marking.” The Neglected Sense Symposium, International Primatological Society. Torino, Italy.

- 2003 “Bimorphism in Male Verreaux’s Sifaka (*Propithecus verreauxi verreauxi*): Chest Status as an Honest Signal of Male Quality?” Sexual Selection Symposium, American Society of Primatologists. Calgary, Canada.
- 2002 “Sources of Variation in Male-Female Relationships in White Sifaka (*Propithecus verreauxi verreauxi*).” LemurCon, Duke University Primate Center. Durham, NC.
- 2002 “Sifaka Sending Signals.” Kirindy Symposium, German Primate Center. Göttingen, Germany.

### CONFERENCE PRESENTATIONS

*\*graduate student co-author (26 presentations); \*\*undergraduate student co-author (11 presentations)*

Ramanamandimby P\*, Montgomery T, Tiedeman K, Núñez C\*, Schuerkmann A, Crofoot M, Walton Z, Caillaud D, Lutz M\*, Ratsimba HR, Ramamonjisoa B, Razanaka S, **Lewis R**, Axel A. Species classification of Madagascar tropical dry forest based on multispectral imagery from drone and Random Forest Classification. Earth Observation for Africa Symposium European Space Agency-ESRIN, September 2024, Frascati, Italy.

Lewis RJ, Abondano L, \*Van Kuijk SM, \*\*Destain H, Eppley TM, \*\*Taboada M, \*Bueno GL, \*\*Rodelas Tokun Haga DA, Tecot SR, Di Fiore. A Patterns of Paternity in Verreaux’s Sifaka (*Propithecus verreauxi*) at the Ankoatsifaka Research Station in Kirindy Mitea National Park. Madagascar. American Association of Biological Anthropologists, March 2024, Los Angeles, CA.

Romanello D\*, Rakotohary HM\*, Mirana JER\*, Lewis RJ. Effective primate conservation requires a focus on human well-being: The importance of evaluating the consequence of protected areas on human happiness. American Association of Biological Anthropologists, March 2024, Los Angeles, CA.

\* Liu AX, Hays A, \*King K, \*Gnanadesikan G, **Lewis RJ**, Tecot S. Urinary oxytocin and aggression in wild *Propithecus verreauxi* at Kirindy Mitea National Park, Madagascar. International Primatological Society, August 2023, Kuching, Malaysia.

\* Liu AX, Hays A, \*King K, \*Gnanadesikan G, **Lewis RJ**, Tecot S. Urinary oxytocin and aggression in wild *Propithecus verreauxi* at Kirindy Mitea National Park, Madagascar. American Society of Primatologists, June 2023, Reno, NV.

Veilleux C, **Lewis RJ**. Fat storage as a possible strategy for coping with drought in a seasonally-adapted lemur. Society for Integrative & Comparative Biology, January 2023, Austin, TX.

\*King K, Hays A, \*Liu AX, \*Gnanadesikan G, **Lewis RJ**, Tecot S. Urinary oxytocin and affiliative behavior in wild male *Propithecus verreauxi* at Kirindy Mitea National Park, Madagascar. Animal Behavior Society. July 2022, San Jose, Costa Rica.



\*King K, Hays A, \*Liu AX, \*Gnanadesikan G, **Lewis RJ**, Tecot S. Investigating urinary oxytocin and affiliative behavior in wild male *Propithecus verreauxi* at Kirindy Mitea National Park, Madagascar. American Society of Primatologists. August 2022, Denver, CO.

\*Bueno GL, **Lewis RJ**: Within-group sperm competition influences testes size in Verreaux's Sifaka (*Propithecus verreauxi*). American Association of Biological Anthropologists. March 2022, Denver, CO.

\*Harshbarger BM, **Lewis RJ**, Axel A: Seasonal variation in Verreaux's Sifaka ranging patterns based on resource availability. American Association of Biological Anthropologists. March 2022, Denver, CO.

\*Gnanadesikan GE, Hammock EAD, Tecot SR, **Lewis R**, MacLean EL: Developing a new extraction method to minimize interference in immunoassay of urinary oxytocin. International Society for Wildlife Endocrinology Virtual Conference August 2021.

**Lewis RJ**, Axel A, \*\*Williams C: Group composition is influenced by climate in Verreaux's sifaka (*Propithecus verreauxi*). American Journal of Physical Anthropology. Supplement 69:160. March 2020, Los Angeles, CA

Mann AE, Mazel F, Lemay M, Morien E, Kowalewski M, Di Fiore A, Link A, Goldberg T, Tecot S, Baden A, Gomez A, Sauther SL, Cuzzo F, Britton GAO, Dominy NJ, Stumpf R, **Lewis RJ**, Swedell L, Amato A, Wegener Parfrey L: What shapes the non-human primate gut microbiome? Insights from microbial eukaryotes. American Journal of Physical Anthropology. Supplement 69:173. March 2020, Los Angeles, CA

Asangba AE\*, Mugisha L, Rukundo J, **Lewis RJ**, Halajian A, Cortes-Ortiz L, Junge RE, Irwin MT, Karlson J, Perkin A, Bales KL, Leigh SR, Stumpf RM: A relatively conserved oral microbiome in non-human primates. American Journal of Physical Anthropology. Supplement 69:11-12. March 2020, Los Angeles, CA.

**Lewis RJ**, Axel A, \*\*Williams C: Verreaux's sifaka (*Propithecus verreauxi*) group size, group composition, & dispersal patterns are influenced by climate: The case study of a lemur inhabiting a tropical dry forest. Association of Tropical Biology and Conservation. August 2019, Antananarivo, Madagascar.

\*Rakotomalala JE, Rakotomanana HF, Louis, Jr. EE, **Lewis RJ**: Affects of forest structure on nocturnal lemur occurrence and microhabitat preference in the dry forest of southern Menabe, Morondava, Madagascar. Association of Tropical Biology and Conservation. August 2019, Antananarivo, Madagascar.

\*Lutz MC, Randrianarison RM, **Lewis RJ**, Caillaud D: Microhabitat preferences for affiliative behavior in two endangered sifaka species. Association of Tropical Biology and Conservation. August 2019, Antananarivo, Madagascar.

\*Asangba AE, Donahue M, \*Lamb A, **Lewis RJ**, Junge RE, Irwin M, Leigh SR, Wright PC, Stumpf RM: Testing factors influencing the lemur gut microbiome: host genetics or diet? American Journal of Physical Anthropology. Supplement 68:8-9. March 2019, Cleveland, OH.

**Lewis RJ**, \*\*Hitly S, \*\*Barnett SE: “Participation in intergroup encounters in Verreaux’s sifaka are influenced by maternal energetic stress” Texas Association of Biological Anthropologists. November 2018, San Marcos, TX.

\*Romanello D, **Lewis RJ**: “Intermediate forest recovery patterns following Cyclone Fanele in Kirindy Mitea National Park, Madagascar” Texas Association of Biological Anthropologists. November 2018, San Marcos, TX.

\*Voyt RA, Ortiz KM, Sandel AA, **Lewis RJ**: “Intersexual power dynamics in lemurs: “Female dominance” or “female leverage”?” Texas Association of Biological Anthropologists. November 2018, San Marcos, TX.

\*Asangba AE, Mugisha L, **Lewis RJ**, Halajian A, Leigh SR, Stumpf RM: “Comparing non-human primate microbiomes from multiple body habitats.” American Journal of Physical Anthropology. Supplement 66:13. April 2018, Austin, TX.

\*Perofsky AC, **Lewis RJ**, Ancel Meyers L: “Gut microbiome diversity across sympatric wild mammal populations of Madagascar reflects diet, habitat use, and host phylogeny.” American Journal of Physical Anthropology. Supplement 66:204. April 2018, Austin, TX.

\*Voyt R, **Lewis RJ**: “A test of the energy conservation hypothesis in Verreaux's sifaka (*Propithecus verreauxi*).” American Journal of Physical Anthropology. Supplement 66:291. April 2018, Austin, TX.

**Lewis RJ**, Kirk EC, Gosselin-Ildari AD: “Evolutionary Patterns of Sex-based Power: The Emergence of Male Dominance in Primates.” Texas Association of Biological Anthropologists. November 2017, San Antonio, TX.

\*Perofsky AC, **Lewis RJ**, \*Abondano LA, Di Fiore A, Ancel Meyers L: “Hierarchical social networks shape gut microbial composition in wild Verreaux’s sifaka.” Society of Molecular Biology and Evolution. July 2017, Austin, TX

\*Perofsky AC, **Lewis RJ**, \*Abondano LA, Di Fiore A, Ancel Meyers L: “Hierarchical social networks shape gut microbial composition in wild Verreaux’s sifaka.” Ecology and Evolution of Infectious Diseases. June 2017, Santa Barbara, CA.

**Lewis RJ**, Kirk EC, Gosselin-Ildari AD: “The Evolution of Power in Primates: The Rise of Male Dominance.” American Association of Physical Anthropologists, American Journal of Physical Anthropology. Supplement 64:262. April 2017, New Orleans, LA.

**Lewis RJ**, Banks B, Irwin M, Morelli T, Patel ER, Razafindramanana J, \*Zamora A, Wright PC: “Comparative Analysis of Male Reproductive Strategies on Genus

*Propithecus*." Texas Association of Biological Anthropologists. October 2016, Austin, TX.

\*Perofsky AC, **Lewis RJ**, \*Abondano LA, Di Fiore A, Ancel Meyers L: "Social networks shape gut microbial communities in wild Verreaux's sifaka." Annual BEACON Congress. August 2016, BEACON Center for the Study of Evolution in Action, East Lansing, MI.

\*Perofsky AC, **Lewis RJ**, \*Abondano LA, Di Fiore A, Ancel Meyers L: "Social networks shape gut microbial communities in wild Verreaux's sifaka." Epidemics International Conference on Infectious Disease Dynamics. December 2015, Clearwater Beach, FL.

**Lewis RJ**: "The evolution of subordination and social complexity: an analysis of power in Verreaux's sifaka." American Association of Physical Anthropologists, American Journal of Physical Anthropology. Supplement 60:203. March 2015, St. Louis, MO.

\*Leimberger KG, **Lewis RJ**: "Determinants of primate sex ratios: an analysis of demography in Verreaux's sifaka (*Propithecus verreauxi*)." American Association of Physical Anthropologists, American Journal of Physical Anthropology. Supplement 60:201. March 2015, St. Louis, MO.

\*Ortiz KM, **Lewis RJ**: "The influence of fighting ability and reproduction in intersexual relationships in Verreaux's sifaka (*Propithecus verreauxi*)." American Association of Physical Anthropologists, American Journal of Physical Anthropology. Supplement 60:201. March 2015, St. Louis, MO.

**Lewis, RJ**: "Submission versus subordination signals: An analysis of power in Verreaux's sifaka." International Primatological Society, August 2014, Hanoi, Vietnam.

Axel A, \*Cragle J, \*Davis R, \*Edwards E, \*Fulcher R, \*Rankin L, \*\*Stout J, \*Tuggle T, \*Wick S, Oberly R, **Lewis R**, and Andriamampandrisoa M.: "Collaborative remote sensing for conservation: identifying and mapping tropical dry forest fire damage in Kirindy Mitea National Park, Madagascar." American Society for Photogrammetry and Remote Sensing (ASPRS) Annual Conference, March 2014, Louisville, KY.

\*Ortiz KM, **Lewis RJ**: "Female-female social relationships and feeding competition in Verreaux's sifaka (*Propithecus verreauxi*)." American Journal of Physical Anthropology. Supplement 58:201. April 2014, Calgary, Canada.

**Lewis RJ**, \*Bannar-Martin KM: "The multi-year impact of Cyclone Fanele on Verreaux's sifaka." International Prosimian Congress, August 2013, Ranomafana, Madagascar.

Andriamampandrisoa TM, Nihagnandrainy F, **Lewis RJ**: "Kirindy Mitea National Park: Important resources for humans and lemurs." International Prosimian Congress, August 2013, Ranomafana, Madagascar.

**Lewis RJ**: "When animals disappear: An examination of factors influencing which individuals disappeared from a wild population of lemurs." American Association of Physical

Anthropologists, American Journal of Physical Anthropology. Supplement 56:179-180. April 2013, Knoxville, TN.

**\*\*Kling KJ, Lewis RJ:** “Intersexual proximity and female dominance in Verreaux's sifaka (*Propithecus verreauxi*).” American Association of Physical Anthropologists, American Journal of Physical Anthropology. Supplement 56:169. April 2013, Knoxville, TN.

Veilleux CC, Bolnick DA, Di Fiore A, Kirk EC, **Lewis RJ:** “Is there a role for color-sensitive foraging in folivorous sifaka (*Propithecus verreauxi*)?” American Association of Physical Anthropologists, American Journal of Physical Anthropology. Supplement 56:276. April 2013, Knoxville, TN.

**Lewis RJ, Caillaud D, Meyers LA:** “Demographic and social influences on ectoparasite transmission in wild Verreaux's sifaka (*Propithecus verreauxi*).” American Association of Physical Anthropologists, American Journal of Physical Anthropology. Supplement 54:192-193. April 2012, Portland, OR.

**\*\*Schoellmann C & Lewis RJ:** “Female dominance and feeding behavior in Verreaux's sifaka in the Kirindy Mitea National Park.” American Association of Physical Anthropologists, American Journal of Physical Anthropology. Supplement 54:122-123. April 2012, Portland, OR.

Caillaud D, Crofoot M, **Lewis RJ, Scarpino D, Meyers LA:** “Spatio-temporal distribution of food resources and group-level memory shape inter-group contact patterns in white-faced capuchins (*Cebus capucinus*) and Verreaux's sifaka (*Propithecus v. verreauxi*).” American Association of Physical Anthropologists, American Journal of Physical Anthropology. Supplement 54:110. April 2012, Portland, OR.

**\*Bannar-Martin KH, Lewis RJ:** “Ranging Behaviour of Verreaux's Sifaka (*Propithecus verreauxi*) in a Primary Forest (Kirindy Mitea National Park) in Madagascar.” American Society of Primatologists, September 2011, Austin, TX.

**Lewis RJ, \*Rakotondanaivo F:** “Impact of a Cyclone on the Body Condition and Reproduction of Verreaux's Sifaka (*Propithecus verreauxi*) in the Kirindy Mitea National Park of Western Madagascar.” American Society of Primatologists, September 2011, Austin, TX.

**\*Bannar-Martin KH, Lewis RJ:** “Damage and Mortality Effects of Cyclone Fanele on Sifaka Food Trees in Kirindy Mitea National Park, Madagascar.” American Association of Physical Anthropologists, American Journal of Physical Anthropology. Supplement 52:81. April 2011, Milwaukee, WI.

**\*\*Graves J, Kirk EC, Lewis RJ:** “Effects of Social Cohesion, Pair-bonding and Monogamy on Primate Brain Evolution.” American Association of Physical Anthropologists. American Journal of Physical Anthropology. Supplement 52:147-148. April 2011, Milwaukee, WI.

**Lewis RJ:** “The Influence of Seasonal Scarcity on Power Dynamics in Verreaux's Sifaka (*Propithecus verreauxi*).” Texas Association of Biological Anthropologists. November 2011, Waco, TX.

**\*\*Graves J, Kirk EC, Lewis RJ:** “Effects of Social Cohesion, Pair-bonding and Monogamy on Primate Brain Evolution.” Texas Association of Biological Anthropologists. November 2010, Waco, TX.

**Lewis RJ, Marenco MC, \*\*Butcher M, Lambeth SP, Schapiro SJ:** “The Influence of Shared Benefits on Cooperation in Chimpanzee (*Pan troglodytes*) Groups.” American Association of Physical Anthropologists, American Journal of Physical Anthropology Supplement 50:154. April 2010, Albuquerque, NM.

**Lewis RJ, Marenco MC, \*\*Butcher M, Lambeth SP, Schapiro SJ:** “The Influence of Shared Benefits on Cooperation in Chimpanzee (*Pan troglodytes*) Groups.” Texas Association of Biological Anthropologists, November 2009, Austin, TX.

**Lewis RJ:** “Ceremonial Sacrifice, Cyclone, & Sifaka: A Discussion of Culture, Ecology, & Primates.” University of Texas Anthropological Society. September 2009, Austin, TX.

**\*Toborowsky CJ, \*Barr WA, Lewis RJ:** “Does Environmental Unpredictability Drive Lemur Life Histories?” American Association of Physical Anthropologists, American Journal of Physical Anthropology Supplement 48:256. April 2009, Chicago, IL.

**Lewis RJ:** “Chest Staining Variation As a Signal of Testosterone Levels in Male Verreaux’s Sifaka.” American Association of Physical Anthropologists, American Journal of Physical Anthropology Supplement 48:175. April 2009, Chicago, IL.

**Lewis RJ:** “The Evolution of Cooperation: Mechanisms of Collective Action in Chimpanzees.” University of Texas Anthropological Society. April 2009, Austin, TX.

**Lewis RJ:** “Chest Staining Variation As a Signal of Testosterone Levels in Male Verreaux’s Sifaka.” Texas Biological Anthropologists Consortium. November 2008, College Station, TX.

**Lewis RJ, Kirk EC:** “Female Dominance and Monomorphism: Are Patterns of Intersexual Dominance Influenced by Sexual Dimorphism?” American Association of Physical Anthropologists, American Journal of Physical Anthropology Supplement 46:140. April 2008, Columbus, OH.

**\*Carnes LM, Lewis RJ:** “Grooming Reciprocity in Verreaux’s Sifaka (*Propithecus verreauxi verreauxi*).” American Association of Physical Anthropologists, American Journal of Physical Anthropology Supplement 46:76. April 2008, Columbus, OH.

**\*\*Butcher M, Lewis RJ, Lambeth S, Owens M, Shapiro S:** “Mechanisms To Overcome the Collective Action Problem in Captive Chimpanzees.” Texas Biological Anthropologists Consortium. November 2007, Austin, TX.

**Lewis RJ**, Kirk EC: “Female Dominance and Monomorphism: Are Patterns of Intersexual Dominance Influenced by Sexual Dimorphism?” Texas Biological Anthropologists Consortium. November 2007, Austin, TX.

**Lewis RJ**: “Feeding Competition in Verreaux’s Sifaka: Does a Folivore Compete for Leaves?” University of Texas Anthropological Society. September 2007, Austin, TX.

**Lewis RJ**, Kirk EC: “Female Dominance and Monomorphism: Are Patterns of Intersexual Dominance Influenced by Sexual Dimorphism?” Prosimians Conference. July 2007, Ithala, South Africa.

\*Nagy H, **Lewis RJ**: “Verreaux’s Sifaka (*Propithecus verreauxi verreauxi*) of Kirindy Mité National Park, a New Field Site in Madagascar.” American Association of Physical Anthropologists, American Journal of Physical Anthropology Supplement 44:176-177. March 2007, Philadelphia, PA.

**Lewis RJ**: “‘Female Dominance’ in Lemurs: A Framework for Understanding Female Power.” American Association of Physical Anthropologists. American Journal of Physical Anthropology Supplement 44: 155. March 2007, Philadelphia, PA.

**Lewis RJ**, \*\*Gosselin-Ildari A: “Grooming Serves a Social Function in Sifaka (*Propithecus verreauxi*) in Kirindy Forest, Madagascar.” American Society of Primatologists, American Journal of Primatology 68:85. August 2006, San Antonio, TX.

**Lewis RJ**: “Field Primatology: What It’s Really Like.” University of Texas Anthropological Society. March 2006, Austin, TX.

**Lewis RJ**: “Sex Differences in Vigilance in Verreaux’s Sifaka: Are Males Providing a Predator-Detection Service?” American Association of Physical Anthropologists, American Journal of Physical Anthropology Supplement 40:138. April 2005, Milwaukee, WI.

**Lewis RJ**: “Stained v. Clean Males: Female Power Maintains Male Bimorphism in Verreaux’s Sifaka (*Propithecus verreauxi verreauxi*).” American Association of Physical Anthropologists, American Journal of Physical Anthropology Supplement 38:135. April 2004, Tampa, FL.

**Lewis RJ**: “Seasonality, Body Condition, and the Timing of Reproduction in Verreaux’s Sifaka in Western Madagascar.” American Society of Primatologists, American Journal of Primatology 62:38. June 2004, Madison, WI.

**Lewis RJ**: “Sex Differences in Scent-marking in Sifaka: Mating Conflict or Mate Guarding?” American Association of Physical Anthropologists, American Journal of Physical Anthropology Supplement 36:398. April 2003, Tempe, AZ.

**Lewis RJ**: “Beyond Dominance: A Theory of Power, American Association of Physical Anthropologists.” American Journal of Physical Anthropology Supplement 30:210. April 2000, San Antonio, TX.

Alberts SC, **Lewis RJ**: “The Evolution of Sex-biased Dispersal: Inbreeding Avoidance and Resource Acquisition.” Animal Behavior Society, August 2000, Atlanta, GA.

**Lewis RJ** , Hunyen M, Clarke M: “The Effects of Leverage on Pigtailed Monkey (*Macaca nemestrina*) and Rhesus Monkey (*Macaca mulatta*) Social Dynamics.” Duke University Biological Sciences Graduate Student Symposium, November 1997, Durham, NC.

**Lewis RJ**, Hunyen M, Clarke M: “Social Interactions and Activity Patterns of Adult Female Pigtailed and Rhesus Monkeys.” Joint International Primatological Society and American Society of Primatologists, American Journal of Primatology 42:128. August 1996, Madison, WI.

#### PRESENTATIONS TO GOVERNMENT AGENCIES

- 2022 Madagascar National Parks, Report of Research Activities
- 2014 Madagascar National Parks, Report of Research Activities
- 2011 Madagascar National Parks, Report of Research Activities
- 2010 Madagascar National Parks, Report of Research Activities
- 2009 Madagascar National Parks, Report of Research Activities
- 2007 The National Association for the Management of Protected Areas in Madagascar, Report of Research Activities
- 2006 The National Association for the Management of Protected Areas in Madagascar, Report of Research Activities

#### SERVICE ON GRADUATE STUDENT COMMITTEES

##### **Ph.D. Student Committees Chaired (University of Texas-Austin) (3)**

2022-present	Eliette Noromalala	Anthropology	Ph.D. candidate
2022-present	Gabrielle Bueno	Anthropology	Ph.D. candidate
2020-2024	Domenic Romanello	Anthropology	Ph.D. 2024
2009-2015	Katherine Bannar-Martin	Anthropology	Ph.D. 2015

##### **Ph.D. Student Committees – Member (University of Texas-Austin) (17)**

2023-present	Riley Derby	Anthropology	Ph.D. candidate
2022-present	Isabelle Clark	Anthropology	Ph.D. candidate
2019-present	Johanna Paez Crespo	Anthropology	Ph.D. candidate
2018-present	Rachel Voyt	Anthropology	Ph.D. candidate

2016-present	Silvy van Kuijk	Anthropology	Ph.D. candidate
2018-2021	Anna Sedlacek	Psychology	Ph.D. 2021
2016-2020	Laura Abondano	Anthropology	Ph.D. 2020
2018-2019	Addison Kemp	Anthropology	Ph.D. 2019
2012-2018	Kelsey Ellis	Anthropology	Ph.D. 2018
2011-2018	Amanda Perofsky	Integrative Biology	Ph.D. 2018
2013-2014	Laith Al-Shawaf	Psychology	Ph.D. 2014
2010-2013	Amber Heard	Anthropology	Ph.D. 2017
2006-2012	Carrie Veilleux	Anthropology	Ph.D. 2012
2008-2010	Hani Freeman	Psychology	Ph.D. 2010
2005-2008	Stacey Tecot	Anthropology	Ph.D. 2008
2005-2008	Magda Muchlinski	Anthropology	Ph.D. 2008
2005-2006	Jennifer Guinn	Psychology	Ph.D. 2006
2005-2006	Joyce Parga	Anthropology	Ph.D. 2006

**Masters Student Committees Chaired (University of Texas-Austin) (8)**

2020-2022	Gabrielle Bueno	Anthropology	M.A. 2022
2018-2019	Domenic Romanello	Anthropology	M.A. 2019
2016-2018	Rachel Voyt	Anthropology	M.A. 2018
2013-2016	Katherine Ortiz	Anthropology	M.A. 2016
2013-2015	Kara Leimberger	Anthropology	M.A. 2015
2009-2012	Kelsey Ellis	Anthropology	M.A. 2012
2009-2010	Kim Valenta	Anthropology	
2007-2009	Carl Toborowsky	Anthropology	M.A. 2009
2006-2009	Laurel Carnes	Anthropology	M.A. 2009

**Other U.S. Student Committees (5)**

2021-present	Arielle Liu	Anthropology, Univ. Arizona	M.A. 2023
2021-present	Katherine King	Anthropology, Univ. Arizona	M.A. 2023
2018-present	Meredith Lutz	Anthropology, U California-Davis	Ph.D. candidate
2020-2021	Julia Dickerson	Anthropology, Stony Brook Univ.	M.A. 2021
2011-2013	Leilani Case	Anthropology, Texas State Univ.	M.A. 2013

**International Students Advised (University of Antananarivo, Madagascar) (3)**



2022-present	Ravaka Rambelason	Animal Biology	Ph.D. candidate
2013-2022	Elvis Rakotomalala	Animal Biology	Ph.D. 2022
2007-2012	Felaniony Rakotondranaivo	Animal Biology	M.A. candidate
2001-2006	Nadine Harilanto	Animal Biology	M.A. 2006

**INTERNATIONAL GRADUATE STUDENT RESEARCH SUPERVISED (Univ. of Antananarivo) (10)**

2019	Sylvia Sitraka	University of Antananarivo, Madagascar
2019	Fanomezantsoa Razafimalala	University of Antananarivo, Madagascar
2019	McAntonin Andriamahaiavana	University of Antananarivo, Madagascar
2018	Jary Razafindraibe	University of Antananarivo, Madagascar
2018	Julie Ratovoson	University of Antananarivo, Madagascar
2018	Tamby Ranaivoson	University of Antananarivo, Madagascar
2018	Diary Razafimandimby	University of Antananarivo, Madagascar
2012-2013	Elvis Rakotomalala	University of Antananarivo, Madagascar
2007	Malalationa Razafidrakoto	University of Antananarivo, Madagascar
2006	Jean Andriamparany	University of Antananarivo, Madagascar

**UNDERGRADUATE STUDENT HONOR’S/CAPSTONE THESIS SUPERVISOR (6)**

2021-2022	Phoebe Anderson, Anthropology: “Optimal group size in Vereaux’s sifaka.”
2020	Analina Tunnell, Environmental Sciences: “Sleep sites in Verreaux’s sifaka.”
2018-2019	Celeste Williams, Anthropology: “Comparing group size and vegetation variation in Verreaux’s sifaka ( <i>Propithecus verreauxi</i> ).”
2017-2018	Samantha Hilty, Environmental Sciences: “Influence of seasonality and group size on the home ranging patterns of a species of Verreaux’s sifaka.”
2011-2012	Crystal Schoellmann, Biology: “Female dominance and feeding behavior in Verreaux’s sifaka in the Kirindy Mitea National Park.”
2009-2010	Jessica Graves, Anthropology: “Primate and Carnivore Brain Evolution”; <u>won the student prize at the TABA Conference 2010.</u>

**UNDERGRADUATE STUDENT HONOR’S THESIS READER (3)**

2017	Elizabeth Coggeshall, Anthropology: “Gut Microbiome Analysis of Three Genera of New World Monkeys”
2012	Katherine Kling, Plan II Thesis: “Conservation Education”
2006	David Kuten, Plan II Thesis: Evolutionary Psychology of <i>King Lear</i>

**UNDERGRADUATE STUDENT INDEPENDENT RESEARCH SUPERVISED (15)**

- 2023-2024 Joy Richardson: “Chest staining in male Verreaux’s sifaka”
- 2021 Paige Noelle: “Differences in sifaka males in single-male and multimale groups”
- 2017-2019 Annai Wang: “Using elo-ratings to assess social status in Verreaux’s sifaka”
- 2017-2019 Honorine Destain: “Verreaux’s sifaka genetics”
- 2017-2018 Sierra Barnett: “Intergroup encounters in Verreaux’s sifaka”
- 2016-2019 Nisa Semione: “Verreaux’s sifaka behavior”
- 2016-2019 Samantha Hilty: “Home range use in Verreaux’s sifaka”
- 2016 Riley Derby: “Evolution of sex ratios in primate groups”
- 2013 Jenna Vonhofe: “The costs of maternal care in Verreaux’s sifaka”
- 2011 Crystal Schoellmann: “Female dominance and feeding behavior in sifaka”
- 2008 Gordon Ulmer: Field study of saki monkey vocalizations”
- 2007 Michael Madole: “The Evolution of Primate Mating Systems”
- 2005 Ashley Goslin-Ildari : “Grooming Behaviors in Verreaux’s Sifaka”
- 2005 Ashley Sommers “The Evolution of Sex-Dependent Power in Primates”
- 2000 Amy Vickers-Smith: “Reconciliation in Sifaka,”

#### **UNDERGRADUATE STUDENT RESEARCH VOLUNTEERS (60)**

2023-2024: 3 students; 2020-2021: 1 student; 2019-2020: 7 students; 2018-2019: 3 students; 2017-2018: 8 students; 2017-2016: 4 students; 2015-2016: 5 students; 2014-2015: 2 students; 2013-2014: 4 students; 2012-2013: 6 students; 2011-2012: 6 students; 2010-2011: 5 students; 2009-2010: 5 students; 2008-2009: 4 students; 2007-2008: 5 students.

#### **RESEARCH AND CONSERVATION EMPLOYMENT**

- 1996 **Research Technician.** *Tulane Regional Primate Research Center.* Covington, Louisiana.
- 1993 **Director.** *Green Corps.* New Haven, Connecticut.

#### **UNIVERSITY SERVICE**

- 2017-2018 *Reviewer, Vice-President of Research’s Research and Creative Grants Committee, UT-Austin*
- 2015-2016 *Reviewer, College of Liberal Arts Faculty Research Assignment Committee, UT-Austin*
- 2012-2016 *Reviewer, College of Liberal Arts Undergraduate Research Scholarship Committee, UT-Austin*
- 2010-2011 *Member, College of Liberal Arts Gender Council, University of Texas-Austin*

### DEPARTMENTAL SERVICE

- 2023-present *Chair*, Promotion and Tenure Committee
- 2022-2023 *Member*, Biological Anthropology Search Committee
- 2021-2023 *Member*, Admissions Committee
- 2021-2022 *Member*, Graduate Studies Steering Committee
- 2020-2021 *Member*, Recruitment and Retention of Diverse Faculty Committee
- 2020-2021 *Member*, Undergraduate Studies Committee
- 2018-2020 *Member*, Computers and Website Committee
- 2017-2020 *Member*, Promotion and Tenure Committee
- 2016-2017 *Member*, Biological Anthropology Search Committee
- 2016-2017 *Chair*, Awards Committee
- 2016-2017 *Member*, Socio-Cultural Anthropology Search Committee
- 2016-2017 *Chair*, LabSpace Committee
- 2015-present *Primary Faculty Administrator*, Primatology Transcript Recognized Minor
- 2015-2017 *Member*, Awards Committee
- 2015-2018 *Member*, Admissions Committee
- 2015-2016 *Member*, Socio-Cultural Anthropology Search Committee
- 2014-2016 *Chair*, Biological Anthropology Search Committee
- 2013-2016 *Mentor*, Research Fellow and Lecturer Dr. Mariah Hopkins
- 2013-2015 *Member*, Promotion and Tenure Committee
- 2012-2013 *Organizer*, Informal Physical Anthropology Seminar Series
- 2011-2012 *Member*, Merit Committee
- 2009 *Member*, Physical Anthropology Search Committee
- 2008 *Panel Discussant*, New Directions in Anthropology Conference Roundtable
- 2006-2009 *Co-Founder* and *Co-organizer*, Informal Physical Anthropology Seminar Series
- 2006-2008 *Member*, Curriculum Committee
- 2005-2006 *Member*, Awards Committee

### PROFESSIONAL SERVICE

- 2020-present *Editorial Board*, American Journal of Biological Anthropology
- 2020 *Panelist*, National Science Foundation

- 2017-present *Member*, IUCN's Species Survival Commission Primate Specialist Group
- 2017-2019 *Member*, International Primatological Society *ad hoc* committee for the capture and release of wild primates
- 2016-2019 *Member*, Scientific Committee, Association for Tropical Biology and Conservation
- 2014-2015 *Member*, Student Awards Committee, American Association of Physical Anthropologists
- 2014 *Member*, Scientific Committee, International Primatological Society
- 2009-2010 *Vice-President*, Texas Association of Biological Anthropologists
- 2008-2009 *Secretary*, Texas Biological Anthropologists Consortium (later renamed as Texas Association of Biological Anthropologists)
- 2007-2008 *Founding President*, Texas Biological Anthropologists Consortium (later renamed as Texas Association of Biological Anthropologists)
- 2007 *Conference Organizer*, Texas Biological Anthropologists Consortium, Austin, TX
- 2003-2006 *Member*, Membership and Finance Committee, American Society of Primatologists

**Grant Proposal *ad hoc* Reviewer:**

National Science Foundation, National Geographic Society, The Leakey Foundation, Primate Conservation, Inc.

**Research Journal *ad hoc* Reviewer:**

*Science*, *Royal Society Open Science*, *Frontiers in Ecology and Evolution*, *Behavioral Ecology*, *PLoS One*, *Behavioral Ecology and Sociobiology*, *International Journal of Primatology*, *American Journal of Physical Anthropology*, *Behaviour*, *American Journal of Primatology*, *Animal Behavior*, *Ecological and Environmental Anthropology*, *Folia Primatologica*

**Edited Volume Reviewer:**

A Behie, J et al. (2019) Primate Research and Conservation in the Anthropocene. Cambridge: Cambridge University Press.

Clancy KBH et al. (2013) Building Babies: Primate Development in Proximate and Ultimate Perspective. *Developments in Primatology: Progress and Prospects* 37. New York: Springer.

Kappeler PM, van Schaik CP (2006) Cooperation in Primates and Humans: Evolution and Mechanisms. New York: Springer.

Noë R, van Hooff JARAM, Hammerstein P (2001) Economics in Nature: Social Dilemmas, Mate Choice, and Biological Markets. Cambridge: Cambridge University Press.

van Schaik CP, Janson CP (2000) Infanticide in Males and Its Implications. Cambridge: Cambridge University Press.

**Promotion and Tenure Reviewer:**

Department of Anthropology	Hunter College, CUNY
School of Forestry and Wildlife Sciences	Auburn University
Department of Anthropology	University of California-Davis
Department of Biology	Marshall University

**PROFESSIONAL SOCIETIES**

Texas Association of Biological Anthropologists, American Association of Biological Anthropologists, American Society of Primatologists, International Primatological Society

**CONSULTING**

- 2021 Wildspace Productions. Consultant for a Netflix documentary including wild Decken's sifaka.
- 2020 "Queens," National Geographic. Consultant for a documentary TV series on female mammals.
- 2019 "The Lemur & The Lioness," Discover Magazine. Consultant for popular science article on leadership in animals.
- 2019 Tours Opérateurs Professionnels de Madagascar: consulting on ecotourism in Kirindy Mitea National Park.
- 2019 Bitch: A Revolutionary Guide to Sex, Evolution and the Female Animal. Consultant for a popular science book by Lucy Cooke.
- 2014 Madagascar National Parks: ecotourism in Kirindy Mitea National Park.
- 2012 International Union for Conservation of Nature: lemur conservation.
- 2011 Discovery Channel: sifaka infanticide for Barbara Pierson
- 2010 ICON films: *Cryptoprocta ferox* film for Sophie Morgan
- 2003 National Geographic Magazine 203(4): The Rise of Mammals: The Mothers of Us All
- 2001 BBC Life of Mammals Episode 8: In the Trees

**INVITED PANELIST**

- 2017 JANE, Austin Film Society showing of documentary about Jane Goodall
- 2008 UT Graduate Student Assembly on New Directions in Anthropology
- 2008 Socratic Seminar, Liberty in the Scientific Enlightenment
- 2007 Liberty Fund, The Evolution of Moral Sentiments

### **PUBLIC OUTREACH**

- 2020 Hot Science, Cool Talks at Home, University of Texas-Austin.
- 2020 Learning Activities for Mature People. Osher Lifelong Learning Institute. Austin, Texas
- 2019 Learning Activities for Mature People. Osher Lifelong Learning Institute. Austin, Texas
- 2019 Darwin Day Lectures for Children. Center for Inquiry. Austin, Texas.
- 2017 Hot Science, Cool Talks Lecture Series, University of Texas-Austin.
- 2017 Darwin Day Lectures. Center for Inquiry. Austin, Texas.
- 2017 Darwin Day Lectures for Children. Center for Inquiry. Austin, Texas.
- 2012 Darwin Day Lectures. Center for Inquiry. Austin, Texas.
- 2011 Food For Thought Lecture Series. Center for Inquiry. Austin, Texas.
- 2006 EarthWatch. Belo-sur-Mer, Madagascar.

### **MEDIA COVERAGE**

- 2024 <https://www.newscientist.com/article/2434477-male-lemurs-grow-bigger-testicles-when-there-are-other-males-around/>
- 2024 <https://www.forbes.com/sites/kimelsesser/2024/03/25/new-study-says-females-dominate-in-many-primate-species-offers-insights-for-humans/>
- 2024 <https://www.scientificamerican.com/article/females-dominate-males-in-many-primate-species/>
- 2020 <https://www.discovermagazine.com/planet-earth/from-animals-to-human-society-what-we-learn-when-women-lead>
- 2019 Bitch: A Revolutionary Guide to Sex, Evolution and the Female Animal. Chapter 9 “Primate Politics”



**CONVENTION ON  
INTERNATIONAL TRADE IN  
ENDANGERED SPECIES OF  
WILD FAUNA AND FLORA**


**IMPORT  
PERMIT**

Page 1 of 4  
1. Original Permit/Certificate No.  
**20US124346/9**  
2. Valid  
**02/18/2021**

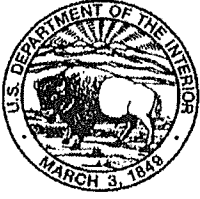
3. Permittee (name and address, country)  
UNIVERSITY OF TEXAS-AUSTIN  
2201 SPEEDWAY STOP C3200  
AUSTIN, TX 78712  
U.S.A.

4. Consignor (name and address, country)  
REBECCA LEWIS  
SIFAKA RESEARCH PROJECT  
B.P. 89  
MORONDAVA 619  
MADAGASCAR

5. Special Conditions  
**MUST COMPLY WITH ENCLOSED GENERAL PERMIT CONDITIONS AND ATTACHED SPECIAL CONDITIONS.**  
**U.S. ENDANGERED SPECIES [50 CFR 17.22].**  
**PERMIT MAY BE COPIED FOR MULTIPLE SHIPMENTS; PERMITTEE TO RETAIN ORIGINAL COPY.**  
**PERMITTEE MUST COMPLETE BLOCKS 11 (QUANTITY), AND SHIPMENT #: \_\_\_\_\_, PRIOR TO EACH SHIPMENT.**  
  
*-May not be used for commercial purposes. For live animals, only valid if the transport conditions comply with the CITES Guidelines for Transport of Live Animals or, in the case of air transport, with IATA Live Animals Regulations.*

5a. Purpose of Transaction  
**S**  
6. U.S. Management Authority  
Department of the Interior  
U.S. FISH AND WILDLIFE SERVICE  
DIVISION OF MANAGEMENT AUTHORITY  
BRANCH OF PERMITS, MS: IA  
5275 LEESBURG PIKE  
FALLS CHURCH VA 22041-3803  
  
**02/19/2020**  
Issuing Date United States Management Authority  
AUTHORITY: Endangered Species Act of 1973 (16 USC 1531 et. seq.)

7/8. Common Name and Scientific name (genus and species) of Animal or Plant	9. Description of Part or Derivative, including identifying marks or numbers (age/sex if live)	10. Appendix No. and Source
<b>A.</b> Common Name VERREAUX'S SIFAKA ----- Scientific Name PROPTHECUS VERREAUXI	9. IMPORT: UP TO 60 VIALS TOTAL CONTAINING 2mm x 2mm PRESERVED EAR TISSUE SAMPLES IN 1.5 ml EPENDORF TUBES WITH 1 ml OF EDTA.	10. 1 W 11. Quantity (including units) NO 12. Country of Origin MADAGASCAR
<b>B.</b> Common Name [REDACTED] ----- Scientific Name [REDACTED]	9. [REDACTED]	10. [REDACTED] 11. Quantity (including units) [REDACTED] 12. Country of Origin [REDACTED]
<b>C.</b> Common Name [REDACTED] ----- Scientific Name [REDACTED]	9. [REDACTED]	10. [REDACTED] 11. Quantity (including units) [REDACTED] 12. Country of Origin [REDACTED]
<b>D.</b> Common Name [REDACTED] ----- Scientific Name [REDACTED]	9. [REDACTED]	10. [REDACTED] 11. Quantity (including units) [REDACTED] 12. Country of Origin [REDACTED]
<b>E.</b> Common Name [REDACTED] ----- Scientific Name [REDACTED]	9. [REDACTED]	10. [REDACTED] 11. Quantity (including units) [REDACTED] 12. Country of Origin [REDACTED]



# United States Department of the Interior



FISH AND WILDLIFE SERVICE  
International Affairs  
5275 Leesburg Pike, MS: IA  
Falls Church, VA 22041-3803

Page 2 of 4  
20US124346/9

## **SPECIAL PERMIT CONDITIONS** **University of Texas—Austin**

### For all Samples:

1. The permittee must notify, in writing, any persons collecting specimens or samples under this permit about the limitations and conditions of this permit. Copies of this notification shall be included with the annual report [see Condition 11(h), below].
2. No animals may be intentionally killed for the purpose of collecting specimens, and no remuneration, either financial or in-kind, may be offered for the taking of animals from the wild (i.e., killing or trapping) or for the collection of samples from free-ranging wildlife (i.e., through live-trapping). This condition does not preclude legitimate collection and transportation expenses (e.g., hiring staff, freight costs). It does, however, apply to paying bounties or incentive pay for the removal of animals from the wild or the collection of samples from animals in the wild. Also, once samples are collected, the samples are not to be used for commercial purposes.
3. Animals may only be captured in cooperation with local wildlife authorities, and where necessary, approval of landowners or land managers must be obtained before sampling. No samples may be obtained from specimens that are permanently removed from the wild for the sole purpose of collecting samples, or for other than scientific or management purposes, unless approved and carried out by appropriately permitted wildlife authorities.
4. Prior to beginning any collections, explicit written approval for the collection must be obtained from appropriate wildlife authorities. A copy of this approval must be maintained for the duration of this permit and it must be available for review if requested.
5. All invasively collected samples must be collected by the permittee, on-site field biologists, or experienced zoo staff trained in the appropriate techniques and pre-approved in writing by permittee. These written approvals may only be issued by the permittee or their designee, and must remain on file at a designated repository at the permittee's institution for a period of 5 years. A list of the approved personnel must be included in the annual report (see Condition 11).

02/19/2020

Date

  
Management Authority

U.S. Management Authority



6. Importation of samples collected prior to the issuance of this advice is authorized if they were collected by qualified individuals properly trained in the collection techniques, and adequate documentation is available on when, where, and by whom the samples were collected (see Condition 3).
7. All imports conducted under this permit must be accompanied by valid CITES export documentation from the country of export or re-export. At the time of import, the export document and a completed copy of this permit must be presented to a U.S. Fish and Wildlife Service Wildlife Inspector for clearance of the shipment.

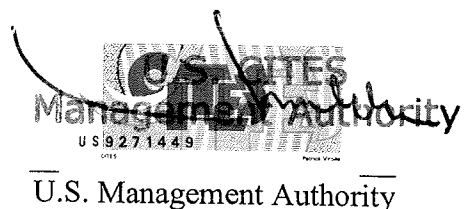
Samples Collected from Live Animals:

Care must be taken when handling live animals to minimize any possibility of injury to the animals. If, for any reason, any animal in the wild dies or incurs a debilitating injury as a result of being restrained for sample collection or while having the sample collected, further collection of samples must be suspended until methods are evaluated and, if appropriate, modified to prevent further incidences of injury or death. If two or more animals die or incur debilitating injuries within a 6-month period, sample collection must be suspended and the Division of Scientific Authority contacted in writing within 1 week of the second death for a review of procedures before further sampling is authorized. (Point of contact: Dr. Rosemarie Gnam, Chief, Division of Scientific Authority, 5275 Leesburg Pike, MS: IA, Falls Church, VA 22041; tel 703-358-1708; fax 703-358-2276). Any problems should be described in the annual report [see Condition 11(i), below].

8. Blood and tissue samples collected in an invasive manner from wild animals may be imported provided all other conditions of this permit are met. Individual sampling is to be abandoned if it is not successful by the second attempt.
9. Samples must not be taken from live Verreaux's sifaka at any time or in any way that might interfere with significant biological functions, such as mating.

02/19/2020

Date

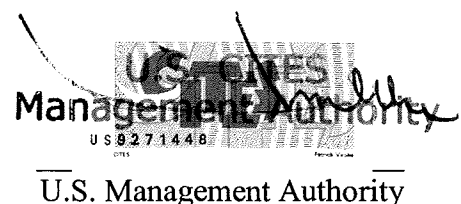


Annual Report:

10. The permittee must provide an annual report at the time of permit renewal, or if no renewal is needed, at the time all activities under this permit have been completed {within 30 days of the expiration of this permit). The annual report must include a record of all samples imported under this permit, as well as the following information:
- a. Species;
  - b. Types of specimens (i.e., blood, tissue, plasma, etc.);
  - c. Size and quantity of specimens;
  - d. Source of specimens (i.e., wild)
  - e. Date sample(s) were collected;
  - f. Date sample(s) were shipped;
  - g. Location(s) of collection (region/country);
  - h. Person(s) who collected the sample(s), copies of notices about the limitations and conditions of this permit, and relationship to permittee;
  - i. Summary of any mortalities or debilitating injuries that may have occurred as a result, directly or indirectly, of the collection activities;
  - j. List of persons approved for invasive collection (see Condition 1);
  - k. Authorizing government agency, including the CITES export permit number (or copy of the export permit);
  - l. Copies of all cleared "Declaration for Importation or Exportation" Forms (3-177); and
  - m. Copies of any scientific publications that resulted from research conducted with samples imported under this permit.

02/19/2020

Date



# CITES/ESA Multi-Use import application # CS7902422 / PER11948527

Vargas, Darcy <darcy\_vargas@fws.gov>

Thu 2024-08-01 2:30 PM

To:rjlewis@austin.utexas.edu <rjlewis@austin.utexas.edu>

Bcc:Jacobs, Rachel L <rachel\_jacobs@fws.gov>

Good afternoon,

We hope you are doing well.

The referenced application, requesting to set up a multi-use permit to import *Propithecus verreauxi* samples, has been reviewed. The *Propithecus verreauxi* is listed in Appendix-I of CITES and as endangered in the ESA. Due to the ESA listing status of this species, it requires that the application be published in the federal register. However, before we set up the application for the federal register publication, we need to ensure that your application is complete. Therefore, please reply to the following:

1. The full description of tissue samples being requested to be imported is unclear. This application package only requests to import "tissue" samples, but this application also references your previous permit # 20US124346/9, which provided a more specific authorization for the import of "PRESERVED EAR TISSUE SAMPLES IN 1.5 ml EPPENDORF TUBES WITH 1 ml OF EDTA." As such, please clarify the type of samples that are being requested to be imported, and include the up to quantity for each specific type of sample, including the amount of 'sample' within each tube or vial.

2. Please provide your latest annual report associated with the previous permit 20US124346/9, as per the conditions outlined on that permit (page 4).

- Were samples imported under that permit? If so, please provide the report on the imported samples.

3. Regarding the samples that have already been collected, were there any mortalities or debilitating injuries as a result, directly or indirectly, of the collection activities?

4. Please provide CVs for the veterinarians and any other field technicians (e.g., darters) that are involved in the sample collection, per question # 12 of the 3-200-37.e application form.

In accordance with 50 CFR 13.11(e), if the requested information is not received by this office by September 15, 2024 (45 calendar days of the date of this email), your application will be abandoned and administratively closed. Once a file is closed, you will need to submit a new application, and all required fees, for the Service to consider your proposed activity.

Kind regards,

Darcy Vargas 🍌

Biologist

US Fish and Wildlife Service

MS: IA

5275 Leesburg Pike

Falls Church, VA 22041-3803

[www.fws.gov](http://www.fws.gov)



Lewis, Rebecca J <rjlewis@austin.utexas.edu>

Wed 2024-08-07 6:00 PM

To: Vargas, Darcy <darcy\_vargas@fws.gov>

📎 2 attachments (223 KB)

Santatra CV (2024-18-7) 10.26.05.pdf; CV Fidisoa Rasambainarivo.pdf;

**This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.**

Dear Dr. Vargas,

Thank you for your email. I'm glad to see that you are still working for the USFWS. You were very helpful to me years ago. I'm not sure whether you meant for me to reply in this email or to amend my information to the documents already submitted. So I will reply here. Please let me know if I should respond differently.

1. The full description of tissue samples being requested to be imported is unclear. This application package only requests to import "tissue" samples, but this application also references your previous permit # 20US124346/9, which provided a more specific authorization for the import of "PRESERVED EAR TISSUE SAMPLES IN 1.5 ml EPPENDORF TUBES WITH 1 ml OF EDTA." As such, please clarify the type of samples that are being requested to be imported, and include the up to quantity for each specific type of sample, including the amount of 'sample' within each tube or vial.

Under 10 (c) (ii) I state that small bits of ear tissue are collected from each animal. Two tissue samples are collected via a 2 mm or 3 mm biopsy punch. This tissue sample is stored in a 1.5ml eppendorf tube filled with approximately 1ml of EDTA (a DNA preservative). Because I am requesting a master file, I found it difficult to figure out how to report both what I have collected and what I intend to collect in the future. I apologize if I did not strike this balance correctly.

Between 2019 and 2024, I collected 60 tubes with  $15 \text{ mm}^2$  of tissue each (see above). For each year in the future beginning 2025, I will collect two 2 mm or 3 mm diameter biopsies per individual resulting in approximately  $15 \text{ mm}^2$  of tissue in each tube for 20 individuals/year. Thus, I am requesting initially to import the 60 tubes of already collected samples. Then, annually beginning with the June capture in 2025, I am requesting to be able to import 20 tubes with  $15 \text{ mm}^2$  of tissue in each tube.

Thus, in 2024 (if the permit is approved in time), I would like to import 60 tubes of  $15 \text{ mm}^2$  of tissue.

In 2025, I would like to import 20 tubes of  $15 \text{ mm}^2$  of tissue.

In 2026, I would like to import 20 tubes of  $15 \text{ mm}^2$  of tissue.

In 2027, I would like to import 20 tubes of 15 mm<sup>2</sup> of tissue.  
And so forth for as long as I can include on a master permit.

2. Please provide your latest annual report associated with the previous permit 20US124346/9, as per the conditions outlined on that permit (page 4).

- Were samples imported under that permit? If so, please provide the report on the imported samples. No, due to COVID-19 shutdown, I was unable to import any samples. The samples collected in 2019 are included in the current import request. No samples were able to be collected in 2020. Normally I would submit a report saying that the permit was not used when I submit the new application, but I was unsure how to go about that with the shift in application/reporting system.

3. Regarding the samples that have already been collected, were there any mortalities or debilitating injuries as a result, directly or indirectly, of the collection activities?

No, no mortalities or debilitating injuries occurred during the collection of these samples.

4. Please provide CVs for the veterinarians and any other field technicians (e.g., darters) that are involved in the sample collection, per question # 12 of the 3-200-37.e application form.

I have attached the CVs of the 2 vets who work on this project. The darter is a local man who does not have a CV because he only speaks the local dialect of Malagasy (Sakalava) and is illiterate. His name is Ramira Razafimandimby (nickname: Bernard). He, like a previous darter on the project (Enafa), was originally a poacher, but the veterinarian Dr. Fidisoa Rasambainarivo (see attached CV) worked with him in 2021 to train him to use his hunting skills to capture (rather than kill) lemurs. Bernard uses a blow pipe, darts, and anesthetic that I provide. After his initial training with Dr. Rasambainarivo, he darted 5 adult sifaka males and all 5 darts hit the 5 lemurs in exactly the same (and the safest) location. Dr. Rasambainarivo noted that Bernard was incredibly precise. Since that time, Bernard has been the darter for my long-term project and other researchers at the Ankoatsifaka Research Station. Researchers have conducted four captures together from 2022 through 2024. During that time, he successfully darted 101 sifaka.

Please let me know what else I can do to help you evaluate my application. I apologize for any oversights as I try to figure out how to navigate this new system of requesting a master file.

Thanks,  
Becca Lewis

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**From:** Vargas, Darcy <darcy\_vargas@fws.gov>  
**Sent:** Thursday, August 1, 2024 1:31 PM  
**To:** Lewis, Rebecca J <rjlewis@austin.utexas.edu>  
**Subject:** CITES/ESA Multi-Use import application # CS7902422 / PER11948527

Good afternoon,

We hope you are doing well.

The referenced application, requesting to set up a multi-use permit to import *Propithecus verreauxi* samples, has been reviewed. The *Propithecus verreauxi* is listed in Appendix-I of CITES and as endangered in the ESA. Due to the ESA listing status of this species, it requires that the application be published in the federal register. However, before we set up the application for the federal register publication, we need to ensure that your application is complete. Therefore, please reply to the following:

1. The full description of tissue samples being requested to be imported is unclear. This application package only requests to import "tissue" samples, but this application also references your previous permit # 20US124346/9, which provided a more specific authorization for the import of "PRESERVED EAR TISSUE SAMPLES IN 1.5 ml EPPENDORF TUBES WITH 1 ml OF EDTA." As such, please clarify the type of samples that are being requested to be imported, and include the up to quantity for each specific type of sample, including the amount of 'sample' within each tube or vial.

2. Please provide your latest annual report associated with the previous permit 20US124346/9, as per the conditions outlined on that permit (page 4).

- Were samples imported under that permit? If so, please provide the report on the imported samples.

3. Regarding the samples that have already been collected, were there any mortalities or debilitating injuries as a result, directly or indirectly, of the collection activities?

4. Please provide CVs for the veterinarians and any other field technicians (e.g., darters) that are involved in the sample collection, per question # 12 of the 3-200-37.e application form.

In accordance with 50 CFR 13.11(e), if the requested information is not received by this office by September 15, 2024 (45 calendar days of the date of this email), your application will be abandoned and administratively closed. Once a file is closed, you will need to submit a new application, and all required fees, for the Service to consider your proposed activity.

Kind regards,

Darcy Vargas 

Biologist

US Fish and Wildlife Service

MS: IA

5275 Leesburg Pike

Falls Church, VA 22041-3803

[www.fws.gov](http://www.fws.gov)

[www.cites.org](http://www.cites.org)

(703) 358-2399

# Fidisoa Rasambainarivo, DVM, MSc, PhD

*Assistant Professor, Biology Department, East Carolina University, Greenville, NC, USA*

*Scientific Director, Mahaliana Labs, Antananarivo, Madagascar*

[rasambainarivof23@ecu.edu](mailto:rasambainarivof23@ecu.edu)

[www.fidylab.com](http://www.fidylab.com)

## Professional experience

2023 - Present: Assistant professor, Biology Department, East Carolina University.

2018 - Present : Co-founder and Scientific Director, Mahaliana Labs

2019 - 2023 : Postdoctoral Research Associate, Princeton University

2019 - 2023 : Research associate, Saint Louis Zoo WildCare Institute, Saint Louis Zoo.

2018 - 2023 : Lecturer (Epidemiology), Department of Veterinary Sciences and Medicine, University of Antananarivo

2008 – 2011 : Staff veterinarian, Madagascar Fauna and Flora Group, Ivoloïna Zoological Park

## Education

2013 – 2018:

**PhD in Biology (Ecology, Evolution and Systematics) University of Missouri Saint Louis**

*Wildlife and Domestic Animal Health: interactions and disease transmission in and around protected areas in Madagascar.* Advisor: Patricia Parker, PhD

2011 - 2013 :

**MSc in veterinary sciences (option: Epidemiology)**

**Faculté de médecine vétérinaire- Université de Montréal, Canada**

*Prevalence of potentially zoonotic parasites at the human wildlife interface in the Ranomafana National Park ecosystem in Madagascar.*

Advisors: Stéphane Lair DMV, DES, Dipl. ACZM & Julie Arsenault DMV, MSc, PhD

2007:

**Internship in conservation medicine Saint Louis Zoo, Duke Lemur Center, University of Missouri Columbia, USA**

Advisors: Randall E Junge, DVM MS Dipl. ACZM, Cathy Williams DVM Dipl. ACAW

2002 - 2008 :

**Doctor of veterinary medicine Department of veterinary sciences and medicine, University of Antananarivo, Madagascar**



## Publications

### Journal articles

1. **Rasambainarivo, F. T.**, Randrianarisoa, S., Rasolofoniaina, O. A., Rice, B. L., & Metcalf, C. J. E. (2024). Assessing the impact of preventative measures to limit the spread of *Toxoplasma gondii* in wild carnivores of Madagascar. *Conservation Biology*, e14300.
2. Bonadonna, G., Ramilijaona, O. M., Raharivololona, B. M., Andrianarimisa, A., Razafindraibe, H., Freeman, K., ... & Milich, K. M. (2024). Response of diademed sifaka (*Propithecus diadema*) to fosa (*Cryptoprocta ferox*) predation in the Betampona Strict Nature Reserve, Madagascar. *Ecology and Evolution*, 14(4), e11248.
3. Sheen, J.K., **Rasambainarivo, F.**, Saad-Roy, C.M. et al. (2024) Markets as drivers of selection for highly virulent poultry pathogens. *Nat Commun* 15, 605.
4. Rabarison, J. H., Rakotondramanga, J. M., **Rasambainarivo, F.**, ... & Dussart, P. (2023). Excess mortality associated with the COVID-19 pandemic during the 2020 and 2021 waves in Antananarivo, Madagascar. *BMJ Global Health*, 8(7), e011801.
5. **Rasambainarivo, F.**, Ramiadantsoa, T., Raherinandrasana, A., Randrianarisoa, S., Rice, B. L., Evans, M. V., ... & Metcalf, J. C. (2022). Prioritizing COVID-19 vaccination efforts and dose allocation within Madagascar. *BMC public health*, 22(1), 1-9.
6. Wampole, E. M., Gerber, B. D., Farris, Z. J., Razafimahaimodison, J. C., Andrianarisoa, M. H., Ralazampirenena, C. J., **Rasambainarivo F...** & Larney, E. (2022). Madagascar Terrestrial Camera Survey Database 2021: A collation of protected forest camera surveys from 2007–2021.
7. Ramiadantsoa, T., Metcalf, C. J. E., Raherinandrasana, A. H., Randrianarisoa, S., Rice, B. L., Wesolowski, A., ... & **Rasambainarivo, F.** 2021. Existing human mobility data sources poorly predicted the spatial spread of SARS-CoV-2 in Madagascar. *Epidemics*, 100534.
8. Andriamandimby, S. F., Brook, C. E., Razanajatovo, N., Randriambolamanantsoa, T. H., Rakotondramanga, J. M., **Rasambainarivo, F.**, ... & Dussart, P. 2021. Cross-sectional cycle threshold values reflect epidemic dynamics of COVID-19 in Madagascar. *Epidemics*, 100533.
9. Baker RE, Mahmud AS, Miller IF, Rajeev M, **Rasambainarivo F**, Rice BL, Takahashi S, Tatem AJ, Wagner CE, Wang LF, Wesolowski A. Infectious disease in an era of global change. *Nature Reviews Microbiology*. 2021 Oct 13:1-3.
10. Rice, B.L., Annapragada, A., Baker, R.E., Bruijning, M., Dotse-Gborgbortsi, W., Mensah, K., Miller, I.F., Motaze, N.V., Raherinandrasana, A., Rajeev, M., Rakotonirina, J., Ramiadantsoa T., **Rasambainarivo F.** and Metcalf, C.J.E., 2021. Variation in SARS-CoV-2 outbreaks across sub-Saharan Africa. *Nature Medicine*, 27(3), pp.447-453.
11. **Rasambainarivo, F.**, Rasoanomenjanahary, A., Rabarison, J.H., Ramiadantsoa, T., Ratovoson, R., Randremanana, R., Randrianarisoa, S., Rajeev, M., Masquelier, B., Heraud, J.M. and Metcalf, C.J.E., 2020. Monitoring for outbreak associated excess mortality in an African city: Detection limits in Antananarivo, Madagascar. *International Journal of Infectious Diseases*.
12. Blanco, M.B., Greene, L.K., **Rasambainarivo, F.**, Toomey, E., Williams, R.C., Andrianandrasana, L., Larsen, P.A. and Yoder, A.D., 2020. Next-generation technologies applied to age-old challenges in Madagascar. *Conservation genetics*, 21(5), pp.785-793

13. Irwin, M.T., Samonds, K.E., Raharison, J.L., Junge, R.E., Mahefarisoa, K.L., **Rasambainarivo, F.**, Godfrey, L.R. and Glander, K.E., 2019. Morphometric signals of population decline in diademed sifakas occupying degraded rainforest habitat in Madagascar. *Scientific reports*, 9(1), pp.1-14.
14. **Rasambainarivo, F.**, Andriamihajarivo MN, Dubovi E, Parker PG., 2018 Patterns of exposure of carnivores to selected pathogens in the Betampona Natural Reserve landscape, Madagascar. *Journal of Wildlife Disease*.
15. **Rasambainarivo, F.**, Farris, Z. J., Andrianalizah, H., & Parker, P. G., 2017. Interactions between carnivores in Madagascar and the risk of disease transmission. *EcoHealth*, 14(4), 691-703.
16. Brown, K. A., Farris, Z. J., Yesuf, G., Gerber, B. D., **Rasambainarivo, F.**, Karpanty, S., & Johnson, S. E., 2016. Modeling co-occurrence between toxic prey and naïve predators in an incipient invasion. *Biodiversity and Conservation*, 1-19
17. Pomerantz, J., **Rasambainarivo, F.T.**, Dollar, L., Rahajanirina, L.P., Andrianaivoarivelo, R., Parker, P., Dubovi, E., 2016. Prevalence of antibodies to selected viruses and parasites in introduced and endemic carnivores in western Madagascar. *Journal of Wildlife Disease*.
18. Alexander, A.B., Poirotte, C., Porton, I.J., Freeman, K.L., **Rasambainarivo, F.**, Olson, K.G., Iambana, B., Deem, S.L., 2016. Gastrointestinal parasites of captive and free living lemurs and domestic carnivores in Eastern Madagascar. *Journal of Zoo and Wildlife Medicine* 47:141-49.
19. Zohdy, S., Grossman, M. K., Fried, I. R., **Rasambainarivo, F. T.**, Wright, P. C., & Gillespie, T. R. (2015). Diversity and prevalence of diarrhea-associated viruses in the lemur community and associated human population of Ranomafana National Park, Madagascar. *International Journal of Primatology*, 36(1), 143-153.
20. Bodager, J. R., Parsons, M. B., Wright, P. C., **Rasambainarivo, F.**, Roellig, D., Xiao, L., & Gillespie, T. R. (2015). Complex epidemiology and zoonotic potential for *Cryptosporidium suis* in rural Madagascar. *Veterinary parasitology*, 207(1-2), 140-143.
21. DC. Bublitz, Wright, PC., Bodager, JR., **Rasambainarivo, F.**, Bliska, JB., Gillespie, TR., 2014. Epidemiology of Pathogenic Enterobacteria in Humans, Livestock, and Peridomestic Rodents in Rural Madagascar. *PloS one* 9:e101456.
22. **F. Rasambainarivo**, RE Junge, and RJ Lewis. Biomedical evaluation for Verreaux's sifaka from Kirindy Mitea National Park. *Journal of Zoo and Wildlife Medicine* 45:247-55.
23. - **F. Rasambainarivo**, TR. Gillespie, PC. Wright, J. Arsenault, A. Villeneuve, and S. Lair. Survey of *Giardia* and *Cryptosporidium* in lemurs from the Ranomafana National Park. *Journal of Wildlife Diseases*. 2013 49(3):741-743.
24. - **F. Rasambainarivo** and RE Junge. A 12-Month Survey of Gastrointestinal Helminth Infections of Lemurs Kept in Two Zoos in Madagascar. *Journal of Zoo and Wildlife Medicine* 2010 41(4):638-642.
25. - RE Junge, CJ. Dutton, F Knightly, CV Williams. **FT. Rasambainarivo**, and EE. Louis. Comparison of biomedical evaluation for white fronted brown lemurs (*Eulemur fulvus albifrons*) from four sites in Madagascar. *Journal of Zoo and Wildlife Medicine* 2008 39(4): 567–575.

Book chapters:

- **Rasambainarivo, FT** and Steven M Goodman., Diseases Risk to Endemic Animals from Introduced Species on Madagascar. In Miller, R. E., Lamberski, N., & Calle, P. (Eds.). (2018). Fowler's Zoo and Wild Animal Medicine Current Therapy, Volume 9. Elsevier Health Sciences.
- **Rasambainarivo, F.**, & Zohdy, S. (2022). Pathogen pollution: Pathogen transmission between introduced and endemic species on Madagascar. In Goodman (Eds). (2022) The New Natural History of Madagascar, 298. Princeton University Press.

## Conference presentations and invited seminars

- October 2023: Seminar speaker, Department of Anthropology, University of Texas-Austin, Austin TX.
- October 2023: Poster presentation, Midwest Primate Interest Group, Washington University in Saint Louis, Saint Louis, MO
- September 2023: Seminar speaker, Population Biology Ecology and Evolution program, Emory University, Atlanta GA.
- 2022: Seminar speaker, University of Georgia, Odum school of ecology, Athens, GA
- 2021: Seminar speaker, Living Earth Collaborative Initiative - Washington University in Saint Louis, Saint Louis, MO
- 2021: Seminar speaker, New York Consortium in Evolutionary Primatology (NYCEP), New York, NY
- 2021: Seminar speaker, Evolutionary Anthropology Department, Duke University, Durham, NC
- 2019: Poster presentation, Association for Tropical Biology and Conservation annual conference, Antananarivo, Madagascar
- 2019: Poster presentation, Annual Ecology and Epidemiology of Infectious Disease conference, Princeton NJ, USA
- 2018: Seminar speaker Saint Louis Academy of Science and Saint Louis Zoo's "conservation conversations" lecture series (invited), Saint Louis, MO, USA
- 2017 Poster presentation Ecology and Evolution of Infectious Disease Annual conference, Santa Barbara, CA, USA
- 2016 Poster presentation Wildlife Disease Association Annual conference, Ithaca, NY, USA
- 2016 Oral presentation 50<sup>th</sup> anniversary of Duke Lemur Center, Durham, NC, USA
- 2014 Oral presentation American Association of Zoo and Wildlife Veterinarian Annual Conference, Orlando, FL, USA
- 2013 Oral presentation International Prosimian Conference, Ranomafana, Madagascar
- 2012 Poster presentation Wildlife Disease Association Annual conference, Lyon France
- 2011 Oral presentation Wildlife Disease Association Annual conference, Québec city, Canada

## Grants and Research awards

- 2022: High Meadows Environmental Institute, Princeton University: "Health and conservation at the human-domestic animal-wildlife interface in Madagascar"
- 2017: Field Conservation- Saint Louis Zoo: "Establishing a local molecular ecology and veterinary Laboratory for the conservation of the Fauna of Madagascar"
- 2016: University of Missouri-Saint Louis Jenni Higashigushi memorial award for biodiversity conservation
- 2016: Field Research for conservation: "Patterns of home range and space use of fosa in the Betampona Natural Reserve ecosystem, Madagascar: implication for the conservation of Madagascar's largest carnivore"
- 2015: Field Conservation – Saint Louis Zoo: "Conservation Medicine Workshop: Expanding veterinarians' perception of their role in biodiversity conservation".
- 2015: Rufford Small Grants. Patterns of interactions and disease transmission at the livestock-wildlife interface in the Betampona Natural Reserve
- 2014: Field Research for Conservation - Saint Louis Zoo: "Leptospirosis at the interface between domestic animals and wildlife of the Betampona Natural Reserve, Madagascar".
- 2014: Whitney Harris World Ecology Center: Henry B. Cowhey Scholarship in Tropical Conservation and Jane and Stanley Birge Tropical Research Scholarship: "Transmission of Leptospira between animal species at the interface between livestock and wildlife in Betampona Natural Reserve, Madagascar"
- 2013: International Prosimian Conference, Ranomafana, Madagascar. Best student oral presentation.
- 2009: Chicago Board of Trade Endangered Species Fund: Development of a Conservation Medicine Club at the University of Antananarivo

## Teaching Experience

### Lectures and workshop

2019 - present:

Epidemiology, lecturer, 5<sup>th</sup> year veterinary students  
Department of Veterinary Sciences and Medicine, University of Antananarivo,  
Madagascar

2019 - present :

MolEcol & R: Molecular biology and diagnosis  
Instructor: Designed and delivered lectures and exercises for introductory molecular biology and diagnostics methods for Biology, Public Health and Veterinary students in Madagascar

2018 - Present :

E2M2: Ecological and Epidemiological Modeling in Madagascar.  
Instructor: Designed and delivered lectures and exercises for introductory programming workshop for Biology, Public Health and Veterinary students in Madagascar (Network Modeling, Occupancy Modeling, Spatial Analysis)

2022 : Guest lecture in Epidemiology (GHP351) Princeton University

2021 : Guest lecture in Infectious disease dynamics (IB114) University of California-Berkeley  
2021 : Guest lecture on “One Health” in Primate Conservation (ANTH203) at Yale University  
2017 : Anatomy and Physiology, Teaching Assistant, Undergraduate biology major.

### Advising and mentoring

2022- present :

High Meadows Environmental Institute Summer Internship (Princeton University) :  
Madagascar Internship organizer and co-mentor : “*Biodiversity Conservation and Health at the Human Domestic Animal Wildlife Interface in Madagascar*”.

2019 :

High Meadows Environmental Institute Summer Internship (Princeton University) :  
Madagascar Internship organizer and co-mentor : *Sustaining Diverse Income Streams in an Urban Setting: Poultry Farming and Newcastle Disease in Antananarivo, Madagascar*

2020-2022 :

Patrick Ross University of Missouri Saint Louis - Msc committee member

2022 - Current

Elise Paietta Duke University - PhD committee member

2022 - Current

Dejah Smith East Carolina University - Msc committee member

2021 - 2022

Herivalisoa Andrianarivo University of Antananarivo - DVM thesis advisor: *Molecular Epidemiology of canine parvovirus in Antananarivo, Madagascar*

2019 - 2021

Santatriniaina Randrianarisoa University of Antananarivo - DVM thesis advisor:  
*Prevalence of avian mycoplasmosis (Mycoplasma gallisepticum) in poultry at live bird markets in Antananarivo, Madagascar*

### Professional societies membership and editorial duties

Member of Wildlife disease association (WDA)

Member of American Association of Zoo Veterinarians (AAZV)

Member of Malagasy veterinary Association (ONDVM)

Reviewer for Biological Conservation, Journal of Zoological and Wildlife Medicine, , International Journal of Infectious Diseases and Ticks and Tick-borne diseases.

2024 - Present: Research advisory committee member: Duke Lemur Center

2023 - Present: Advisory Board Member: TriCEM: Triangle Center for Evolutionary Medicine

2021 - Present: Board member : AID Forests (Ankoatsifaka Initiative for Dry Forests)

2013 - Present: Veterinary Advisor Madagascar Fauna and Flora Group

### Additional Skills

- R statistical software for data analysis and visualization
- [www.covid19mg.org](http://www.covid19mg.org): Principal data analyst and developer of a dashboard for the analysis and monitoring of the COVID-19 pandemic in Madagascar.
- ArcGIS and qGIS for spatial data analysis

- Molecular ecology and diagnostics
- Wild Animal capture (darting)

#### Languages

- Malagasy: fluent
- French: fluent
- English: fluent

## Santatra Randrianarisoa

Lot II B 52 MA Amboditsiry, Antananarivo, Madagascar

E-mail: [santatrandria6@gmail.com](mailto:santatrandria6@gmail.com)

Links: [Personal website](#) | [Twitter](#)

Phone: +261 34 43 227 97

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### Education

**University of Antananarivo** | Antananarivo, Madagascar 2014-2022

Faculty of Medicine | Veterinary Department

Doctor of Veterinary Medicine (DVM)

**Jean Joseph Rabearivelo High School** | Antananarivo Madagascar 2013

High School Degree

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### Professional experience

**Duke Lemur Center** | Durham, North Carolina | USA March - May 2024

Veterinary Intern and Research Scientist

- o Training on lemur clinic
- o Developing research project on investigating lemur infectious diseases in Madagascar

**Mahaliana Labs** | Amboditsiry, Antananarivo Madagascar 2022-Present

Veterinarian, Lab Manager

- o Field sampling collection and wild animal health examination
- o Molecular analysis of biological samples (Blood, Tissue, Feces, Urine, Soil)

**Mahaliana Labs** | Amboditsiry, Antananarivo Madagascar 2019-2021

Research assistant

- o Wild animal capture (lemurs, rodents)
  - o Field sampling collection and wild animal health examination
  - o Molecular analysis of biological samples (Blood, Tissue, Feces, Urine, Soil)
  - o Contribution on data collection and dashboard building of [Covid19 disease in Madagascar](#)
-

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## Professional membership and service

Wildlife Disease Association (WDA)	March 2024- Present
American Association of Zoo Veterinarians (AAZV)	2022-Present
National Order of the Veterinarian Doctors in Madagascar	2022-Present

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## Training and workshop

<b>Triangle Center of Evolutionary Medicine</b>   Raleigh, NC, USA	May 2024
<ul style="list-style-type: none"> <li>o Epidemiology and One Health</li> <li>o Metabolism and microbiome</li> <li>o Phylogenetic analysis</li> <li>o Social network analysis</li> <li>o Disease modeling</li> </ul>	
<b>Mahaliana Labs Madagascar &amp; Saint Louis Zoo</b>   Madagascar	2022
<ul style="list-style-type: none"> <li>o Molecular diagnostic of chelonians infectious disease (Adenovirus, Herpesvirus and Mycoplasma)</li> </ul>	
<b>University of La Réunion</b>   UMR PIMIT   La Réunion	2022
<ul style="list-style-type: none"> <li>o Morphospecies identification on binocular loop</li> <li>o DNA barcoding of arthropods vectors</li> <li>o Molecular detection of vector-borne pathogens</li> </ul>	
<b>Institut Pasteur of Madagascar &amp; Centre Valbio</b>   Madagascar	2020
Epidemiological and Ecological Modeling in Madagascar (E2M2)	
<b>Mahaliana Labs &amp; Princeton University</b>   Antananarivo, Madagascar	2019
Molecular Ecology and Epidemiology with R software	

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## Publications

### Journal articles

- Rasambainarivo FT, **Randrianarisoa S**, Rasolofoniaina OA, Rice BL, Metcalf CJE. Assessing the impact of preventative measures to limit the spread of *Toxoplasma gondii* in wild carnivores of Madagascar. *Conserv Biol.* 2024 May 27:e14300. doi: 10.1111/cobi.14300. Epub ahead of print. PMID: 38801293.



- Rasambainarivo F, Ramiadantsoa T, Raherinandrasana A, **Randrianarisoa S**, Rice BL, Evans MV, Roche B, Randriatsarafara FM, Wesolowski A, Metcalf JC. Prioritizing COVID-19 vaccination efforts and dose allocation within Madagascar. *BMC Public Health*. 2022 Apr 12;22(1):724. doi: 10.1186/s12889-022-13150-8. PMID: 35413894; PMCID: PMC9002044
  
- Andriamandimby SF, Brook CE, Razanajatovo N, Randriambolamanantsoa TH, Rakotondramanga JM, Rasambainarivo F, Raharimanga V, Razanajatovo IM, Mangahasimbola R, Razafindratsimandresy R, **Randrianarisoa S**, Bernardson B, Rabarison JH, Randrianarisoa M, Nasolo FS, Rabetombosoa RM, Ratsimbazafy AM, Raharinosy V, Rabemananjara AH, Ranaivoson CH, Razafimanjato H, Randremanana R, Héraud JM, Dussart P. Cross-sectional cycle threshold values reflect epidemic dynamics of COVID-19 in Madagascar. *Epidemics*. 2022 Mar;38:100533. doi: 10.1016/j.epidem.2021.100533. Epub 2021 Nov 29. PMID: 34896895; PMCID: PMC8628610.
  
- Ramiadantsoa T, Metcalf CJE, Raherinandrasana AH, **Randrianarisoa S**, Rice BL, Wesolowski A, Randriatsarafara FM, Rasambainarivo F. Existing human mobility data sources poorly predicted the spatial spread of SARS-CoV-2 in Madagascar. *Epidemics*. 2021 Dec 3;38:100534. PMID: 34373863; PMCID: PMC8351785.
  
- Rasambainarivo F, Rasoanomenjanahary A, Rabarison JH, Ramiadantsoa T, Ratovoson R, Randremanana R, **Randrianarisoa S**, Rajeev M, Masquelier B, Héraud JM, Metcalf CJE, Rice BL. Monitoring for outbreak-associated excess mortality in an African city: Detection limits in Antananarivo, Madagascar. *Int J Infect Dis*. 2021 Feb;103:338-342. doi: 10.1016/j.ijid.2020.11.182. Epub 2020 Nov 26. PMID: 33249289.

### Thesis Manuscript

- **Randrianarisoa S**. *Mycoplasma gallisepticum* infection of local chicken in the market of Antananarivo, Madagascar. University of Antananarivo. Veterinary Department [Veterinary thesis]. March 2022.

### Research presentation and invited talks

Duke Lemur Center - Presentation

May 2024

**Title:** “*Zoonotic diseases in captive lemurs, non-native small mammals and domestic animals at Ivoloïna zoo in Madagascar*”

Madagascar Biodiversity and Conservation - Seminar series

February 2023

**Title:** “*Prevalence of chicken chronic respiratory disease in the markets of Antananarivo Madagascar*”

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**GRANTS****(\$20,000) Wild Animal Health Fund**

2022-2023

**Project: “One Health in the Manombo Special Reserve of Madagascar”**Dr Eric Baitechman, Dr.Fidisoa Rasambainarivo, **Santatra Randrianarisoa,**

Dr. Rachel Johnston

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**EXTRACURRICULAR AND VOLUNTEER WORK**

Volunteer | Zoo Veterinarian Assistant

May 2019

Ivoloina Zoo Toamasina, Madagascar

Volunteer (President of the Election Committee) | Veterinary Student Association

2017

University of Antananarivo | Faculty of Medicine

Head of Communication | Veterinary Student Association

2015-2019

University of Antananarivo | Faculty of Medicine

Proficient in French (20 years)

Proficient in English (8 years)