apl. Prof. Dr. Ute Radespiel

apl. Prof. Dr. rer. nat. Radespiel

Main interests

Behavioral Ecology

A central question in behavioral ecology is how extent species adapt behaviorally and ecologically to habitual fluctuations in their natural environment and to what extent ecological plasticity is linked to the distribution of species and to speciation. We address these questions in a long-term research program by a comparative and integrative approach applied to nocturnal lemurs which are good models for basal primates.

We aim to understand the traits (e.g. ecology, behavior) that shaped the distribution and adaptation of lemurs. We are also addressing the question of the basis of reproductive isolation of species. These analyses are focused on the genera Microcebus spp., Lepilemur spp. and Avahi spp. We perform field studies, supplemented by experimental studies, particularly in north-western, northern and eastern Madagascar, using comparable methods, to study the ecology, behavior, parasite infections and the genetics of species showing contrasting distribution, and to assess sensory, ecological and social determinants of species flexibility and its link to genetics.

Female dominance over males is generally defined as the ability of adult females to consistently evoke submissive behavior in adult males on an individual level. Female dominance is a rare trait in mammals and within primates, but seems to be widespread among the lemurs of Madagascar. How and why female dominance evolved in lemurs is discussed controversially. By focussing on natural and experimentally induced social interactions in nocturnal lemur taxa, we explore current hypotheses and analyze proximate factors governing female dominance in this primate group.

The sensitivity and specificity of pheromone perception depends on the olfactory receptor repertoire present in the epithelium of the vomeronasal organ and the main olfactory epithelium. We are interested in evaluating the functional VNO receptor repertoire of the nocturnal mouse lemur (Microcebus spp.) that are well known for their extensive use of olfactory marking behaviors. We study the variability, selection and phylogenetic ancestry of the VNO repertoire of mouse lemurs and the olfactory perception capacities of this small primate model.

Evolutionary biology, biodiversity and conservation

Lemurs underwent a broad-scale adaptive radiation after their initial colonization of Madagascar about 60 Mya. Extant lemur species consist of more than 100 species which inhabit the various forest habitats of the Island. Many species, in particular nocturnal species, have only been described recently, partly by our group. Whereas some species show quite limited geographic ranges, others show broad distributions. The underlying colonisation history and the factors driving this diversification are so far only poorly known. We aim to understand the factors that promoted this radiation and shaped the distribution, adaptation and genetic structures of lemurs. These analyses are focused
Nocturnal lemurs belong to the endangered primates due to anthropogenic habitat loss, fragmentation, habitat degradation and poaching. We perform field studies to study the abundance, ecology, parasite infections and the genetics of populations of lemurs undergoing different levels of threats in various parts of the island. Long-term study sites include the Ankarafantsika National Park (work since 1995) and the Mariarano forest (work since 2003) that both contain different habitat types, including xerophytic forests, dry deciduous forests, semi-humid gallery forests along rivers or lakeshores, coastal mangrove forests (Mariarano) and secondary vegetation formations that may develop after bushfires or selective wood extraction. This mosaic of habitat types offers many different ecological niches for lemurs and other forest dwelling organisms. Knowledge on the environmental flexibility of lemurs is still in its infancy, but urgently needed for conservation management. Comparative studies in various sites deliver important tools to monitor and manage the biodiversity in tropical forests. Furthermore, they will help to understand the evolution of the unique species diversity of lemurs in Madagascar and the origin and evolution of our own primate ancestry.

The development of effective conservation measures for endangered species requires a detailed knowledge of remaining individual numbers, the distribution of species, their ecological requirements, and the factors causing potential threats to their survival. Moreover, it is important to understand the degree of intra-specific differentiation (e.g. phenotypic, ecological, genetic) that can be the result of rather recent (i.e. anthropogenic) or ancient evolutionary processes (e.g., barriers, landscape). We aim to understand the population structure of different lemur species in view of drastic anthropogenic disturbances. Ancient and recent processes of genetic differentiation shall be identified in order to develop effective conservation measures.

In a recent project, we study habitat loss and fragmentation in the context of past and future environmental changes, across taxa and regions mainly in Madagascar with an international team of researchers (see project INFRAGECO and respective link to project web-page).

INFRAGECO

Marked climatic oscillations between glacial and interglacial periods had worldwide consequences for vegetation as well as animal population dynamics. The importance of these shallow-time (on geological and evolutionary timescales) geographic dynamics for shaping current biodiversity and biogeography patterns is increasingly stressed, although rarely analyzed in an innovative integrated manner. We aim to integrate records of vegetation and climate dynamics with inferred population dynamics to reconstruct the dynamics of forest landscapes and of populations of forest dwelling species over space and time in a primate model endemic to Madagascar.

Research Projects
Link: Research Projects
Members of working group
PhD/Doctoral students

Verena Schöler
Behavioural consequences and animal welfare implications of experimental housing conditions and vaccinations and infections with lyssaviruses in red foxes (Vulpes vulpes)

Jennifer Brunke
Habitat fragmentation in a tropical rainforest ecosystem: a case study on the genetic diversity of small mammal communities in the lower Kinabatangan floodplain in Borneo (Sabah, Malaysia)
Annika Kollikowski
Olfactory discrimination learning in small nocturnal primates (Microcebus murinus and M. lehilahytsara)

Frederik Kiene
Effects of habitat fragmentation on parasite communities in mouse lemurs (Microcebus spp.) in northwestern Madagascar

Helena Teixeira
Reconstructing the past: demographic fluctuations in dynamics landscapes modelled for mouse lemurs in Madagascar.

Diploma- / Master- / Bachelor students

Associated doctoral students

Bertrand Andriatsitohaina
Dominik Schüssler
Malcolm Ramsay

Alumni

Rina Evasoa, PhD
Verena Schuldenzucker, PhD
Ulf Konietzke, Msc.
Hauke Henkel, Msc.
Selina Jeschke, BSc.
Sina Rilling, BSc.
Sharon Kessler, PhD
Svenja Gerberding, BSc.
Laura Heck, MSc.
Kathrin Schiegel, BSc.
Jennifer Wittkowski, MSc.
Sarah Hohenbrink, PhD
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Johanne Kitzler, BSc
Jennifer Kosubek, MSc
Elena Steinmeier, BSc
Maren Koberstein-Schwarz, BSc
Katherina Bünemann, BSc
Dr. Lalandy Sehen
Sandra Thorén, PhD
Dr. rer. nat. Mathias Craul
Gillian Olivieri, PhD
Dr. vet.med. Franziska Quietzsch
Dr. Romule Rakotondravony
Dipl.Biol. Jan Dehne
Dinah Eßer, MSc
Dipl.Biol. Katja Guschanski
Dipl.Biol. Arite Heuck
Vivian Juerges, MSc
Dipl.Biol. Marina Juric
Dipl.Biol. Ina Leinweber
Dipl.Biol. Difei Li
Dipl.Biol. Philipp Mesecke
Dipl.Biol. Nicole Schneider
Dipl.Biol. Melanie Söhlke
Dipl.Biol. Pia Eichmüller
Dipl.Biol. Miriam Linnenbrink
Dipl. Biol. Dennis von der Wall
Christopher Meusel, BSc
Frank Roloff, BSc
Julia Haenel, BSc

Professional and scientific career

since 11.2009
Außerplanmäßige Professorin at the Institute of Zoology, TiHo Hannover

since 01.2006
Akademische Oberrätin at the Institute of Zoology, TiHo Hannover

06.2005
Habilitation at the University of Veterinary Medicine Hannover (venia legendi: Zoology)
09.2002 - 12.2005
Akademische Rätin (tenure) at the Institute of Zoology, TiHo Hannover

12.2001 - 09.2002
Hochschulassistentin (C1) at the Institute of Zoology, TiHo Hannover

01.2000 - 11.2001
Research fellow (Wiss. Mitarbeiterin) at the Institute of Zoology, TiHo Hannover

01.1999 - 12.1999
Post-doctoral fellowship at the Institute of Zoology, London and the Cardiff School of Biosciences, Cardiff, U.K.

02.1998 - 12.1998
Research fellow at the Institute of Zoology, TiHo Hannover

05.1996 - 12.1998
Research assistant (Wiss. Mitarbeiterin) at the Institute of Zoology, TiHo Hannover

01.1995 - 04.1996
Research assistant at the German Primate Center, Göttingen

Education and further qualification

02.2008 - 02.2010
Participation in Professional Teaching (200 hrs, organized by: TiHo Hannover)

02.1998
Doctoral degree (Dr.rer.nat.) at the University of Hannover. Doctoral thesis: Soziale Organisation des Grauen Mausmakis (Microcebus murinus)

10.1985 - 04.1990
Studies in Biology (Diplom) at the Georg-August University of Göttingen. Diploma thesis: Die räumlichen und sozialen Strukturen innerhalb einer Familie von Weißbüschelei (Callithrix jacchus ERXLEBEN 1777) unter dem experimentellen Einfluss der zeitweiligen Abwesenheit der Eltern

10.1983 - 09.1985
Studies of Biology (Diplom) at the University of Regensburg

Awards & grants

- DFG-Sachbeihilfen (DFG RA 502/23-1, 2020-2023)
- BMBF (INFRAGECO: 2017-2020)
- DFG-Sachbeihilfen (DFG RA 502/20-1, 2017-2020)
- Research grant by the VolkswagenStiftung (PhD grant; 2010-2013)
- DFG-Sachbeihilfen (DFG RA 502/7-11, 2003-2011)
- Research grant by BIOPAT e.V. (2008)
- Research grant by the Bundesamt für Naturschutz (BfN) (2007)
- Scientific exchange grant by the DAAD (2008-2009, 2011)
- Scientific exchange grant by the VolkswagenStiftung (2006-2007)
- Research grant by Conservation International (2002)
- Post-doctoral scholarship by the DAAD (1999)

Publications

Publications 2020:


Publications 2019:


I. Articles in peer-reviewed journals

Articles in peer-reviewed journals before 2019

Abstracts of international conferences 2017-1999

Contributions to books
Contributions to books

Editorial board panel

- International Journal of Primatology
- Madagascar Conservation & Development
- Primate Biology
- Genes

Review for

Funding agencies

Leakey Foundation (USA), Primate Conservation Inc., European Union, The Leverhuime Trust (U.K.), Deutsche Forschungsgemeinschaft, Alexander von Humboldt Stiftung, Deutscher Akademischer Austauschdienst, Austrian Science Fund, National Research Foundation (S. Africa), Research Fund of Netherlands

Professional journals


Activities in scientific societies

2018 -
Secretary General of the Society for Tropical Ecology (gtö)

2014 - 2018
Member of the scientific board of the Society for Tropical Ecology (gtö)

01.2010 - 12.2013
Chair of the Gesellschaft für Primatologie e.V.

since 2006
Member of the IUCN SSC Primate Specialist Group

2001 - 2005
Council member of the Gesellschaft für Primatologie e.V.

09.2000 - 12.2001
Council member of the European Federation of Primatology

Membership in scientific societies

- Deutsche Zoologische Gesellschaft
- Ethologische Gesellschaft
- GERP (Groupe d Étude et de recherche sur les primates de Madagascar)

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Teaching and field trips

- Seminar on "Current Aspects of Tropical Ecology"
- Lecture and course on **Funktionsmorphologie der Tiere** (Winter term; BSc)
- Lecture series **Verhaltensbiologie** (Summer term; Vet, BSc)
- Lecture series **Verhaltensbiologie** (Winter term; BSc)
- Lecture series **Biodiversity, Behaviour and Evolution** (Winter term; MSc)
- Course on "Behavioural Ecology" (Summer term; BSc, MSc)
- "Berufspraktikum Tropenökologie"
- "Vertiefungspraktikum Tropenökologie" (BSc)
- Forschungsmodul "Behavioural Ecology & Conservation Genetics" (MSc)

Opportunities for thesis work - academic research collaboration with Operation Wallacea, for details see [here](#).