messerli
Research Institute

Annual Report 2020

messerli Foundation

vetmeduni vienna

MEDICAL UNIVERSITY OF VIENNA

universität wien

Solution of the pictures:

01 Wolf | **02** Bird | **03** Dog | **04** Cow | **05** Dog | **06** Frog | **07** Human | **08** Pig | **09** Human | **10** Wolf | **11** Pig | **12** Bird

Imprint

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Contents

Statements 2020

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Heinz Faßmann

Federal Minister for Education, Science and Research

Responsibility towards and the responsible treatment of animals is a central societal concern. And it is precisely this responsibility that lies at the heart of the Messerli Research Institute‘s diverse areas of expertise. With its strategic focus on researching the animal-human relationship, which is characterised by lived interdisciplinarity and the promotion of transparency and knowledge transfer, the Messerli Research Institute represents a research centre with particular competence and international visibility. I congratulate the entire team on their achievements to date and wish them continued success.

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Petra Winter

Rector of the University of Veterinary Medicine Vienna

In the past year 2020, which was marked by the Corona pandemic, the stable partnership with our strong partner universities and the Messerli Foundation once again turned out to be a proven constellation. Thanks to this rock-solid basis, research on topics such as mental ageing in dogs or grief in the animal world could be successfully continued. In addition, a new centre for allergy research was created with the Danube Allergy Research Cluster. Particular mention should also be made of the FWF’s START funding for emerging top researchers, which was obtained by Alice Auersperg for her research on tool use by Goffin’s cockatoos.

© Minna Rossi

Heinz W. Engl

Rector of the University of Vienna

At the Messerli Research Institute, scientifically sound findings for the coexistence of humans and animals are developed and expanded. The impact on doctoral studies is particularly important: a world-class centre for training the next generation of researchers in cognitive biology can be created here, also with funding from the FWF’s DK programme. Another focus on the part of the University of Vienna is the ethics of the human-animal relationship. Furthermore, I hope that the joint efforts for an appointment on the topic of “Neuroscientific Foundations of Human-Animal Relations” will ultimately lead to success. This would significantly expand the Institute’s profile. The University of Vienna would like to express its special thanks to the Messerli Foundation for making this great project possible.

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Michaela Fritz

Vice Rector for Research and Innovation of the Medical University of Vienna

The year 2020 has focused on the interaction between animals and humans, the central research topic of the Messerli Research Institute, in particular the transmission of SARS-CoV-2 between animals and humans. A scientific highlight of the Institute in this challenging year was the decoding of the farmyard protective effect against allergies, and thus another example of the Messerli Research Institute's role as a bridge builder between human and veterinary medicine, between the humanities and the natural sciences, and for successful cooperation between universities.

© privat

Peter Sandøe

Chairman of the Scientific Advisory Board

It is soon the ten year anniversary of the Messerli Research Institute. There is a lot to celebrate! We have a vibrant research environment with three groups that both separately and through interdisciplinary collaboration have made numerous contributions to realizing the Messerli vision: Using science to improve the quality of life of animals and their human caretakers. However, this is also a time to initiate a process to ensure progress for the coming ten years. As chair of the Scientific Advisory Board, and together with the rest of the board, I hope to get this process up and running over the next year or two.

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Heinz Schweizer

Honorary President Messerli Foundation

The first annual report of the Messerli Research Institute was published ten years ago. Then as now, the Messerli Foundation was guided by the fundamental idea that only interdisciplinary scientific findings in the field of human-animal relations can sustainably promote animal welfare. We are pleased to note that since 2011, 7 habilitations, 38 PhDs and 163 master's degrees have been successfully completed. For the coming decade, we hope that an even stronger focus of the institute on interdisciplinarity, embedded in the research activities of other universities at home and abroad, will offer another generation of young scientists the opportunity to break new ground in the field of human-animal relations.

Editorial

2020

Erika Jensen-Jarolim

Head of Messerli Research Institute
2018-2020

© Erika Jensen-Jarolim

Covid-19 changed the rules of the game for everyone in 2020, including the Messerli Research Institute in Vienna. From mid-March, everyone was confronted with the pandemic on a scale that no one could have predicted. We soon understood how important personal encounters, handshakes or even hugs are to us and began to really miss them.

Throughout this time, I tried to provide all Messerlis with news that was customised for us. From a spelling mistake came an in-house brand with an extra "R". – Who doesn't remember the "popular" CoRvid updates?

However, the unexpected factual situation in 2020 also contained opportunities that we have made good use of. We made a quantum leap in 2020, from a purely technical point of view, which some of us never actually envisaged.

Blackboard Collaborate, Cisco Webex, Zoom, GotoMeeting, Teams or Google Hangout were rare terms from the Who Wants to Be a Millionaire show for most of us before the pandemic.

Now we were forced to learn how to use these online platforms, without which our teaching, meetings, reviews and much more would have become unthinkable. Especially regular time slots for communication in meetings became a conditio sine qua non, since one no longer happened to meet at the coffee machine anyway.

In the meantime, we are well versed in this and have already switched our entire teaching and examination system to virtual teaching since the summer semester of 2020 and hold all meetings online. This includes the internal team meetings, administrative JourFixe, staff meetings, Journal Clubs, the Messerli Institute Council and the Internal Audit as well as the holding of our international Messerli Advisory Board Meeting on 22 May or the virtual visit of our Foundation Boards on 2 December.

The organisation of the virtual Christmas party on 3 December was a particular challenge. With speeches, a multimedia quiz, gift presentations, an "Xmesserli Videos" with a talking dog, as well as many presentations by the children from the Messerli families, this experiment became a heart-warming event. It would never have been possible without the creative festivities committee and everyone who got so involved – thank you!

After three years, I can pass on the golden microphone as a sign of the change in leadership. It has been an exciting three years for me and I am grateful to everyone for so much support and real Messerli team spirit, which was not broken even by Covid-19.

Yours, Erika Jensen-Jarolim

If you are not lucky enough to grow up on a classic farm with cows,
you are three times more likely to develop allergic sensitization, even to milk proteins.

The Messerli Research Institute at a glance

2020

The Messerli Research Institute was founded in 2010, with support from the Messerli Foundation (Sörenberg, Switzerland), under the management of the University of Veterinary Medicine, Vienna in cooperation with the Medical University of Vienna and the University of Vienna. The professors for the first three units (Comparative Cognition, Comparative Medicine, Ethics and Human-Animal Studies) were appointed in autumn 2011. In March 2012, the institute was officially opened. The work of the Messerli Research Institute has four cornerstones:

- **Research:** The research is devoted to the interaction between humans and animals, as well as its theoretical principles in animal cognition and behaviour, comparative medicine and ethics.
- **Teaching:** Research findings are an integral part of the academic curriculum in a Master's programme and are also designed to provide guidelines for the responsible and acceptable treatment of animals.
- **Interdisciplinarity:** The institute's work is characterized by its broad interdisciplinary approach (biology, human medicine, veterinary medicine, philosophy, psychology, law) and strong international focus.
- **Knowledge transfer:** A cornerstone of the Messerli Research Institute is to make science-based findings known to the public. In this way, the institute also takes on the social mission of supporting people in their responsibility towards animals on a scientific basis.

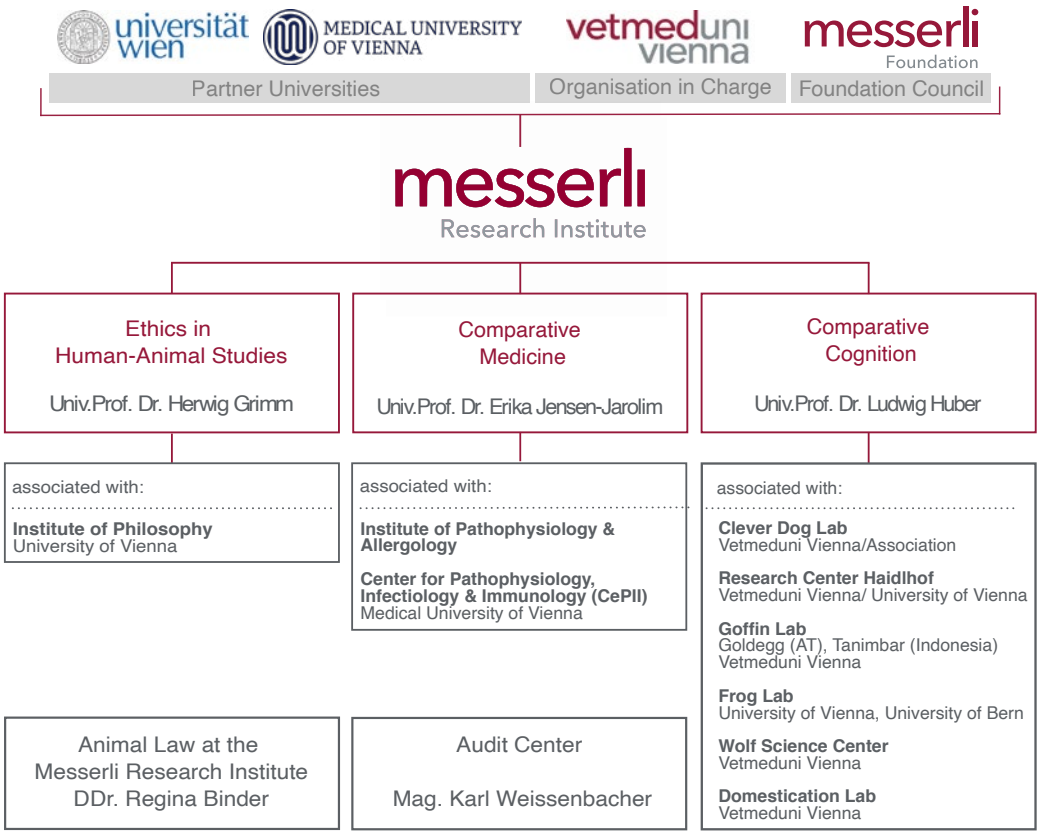
Photos f.l.t.r.: © Adobe Stock, Elmar Ebner / Vetmeduni Vienna, Ariane Veit / Vetmeduni Vienna, Karl Weissenbacher / Vetmeduni Vienna, Rooobert Bayer

Organisation chart

The Messerli Research Institute comprises three units, each with a full professorship. Two of these are double appointments linking Vetmeduni Vienna with the Medical University of Vienna, and one professorship with the University of Vienna.

On 1 July 2019, for organisational reasons, the Messerli Research Institute was merged with two other independent institutes in the newly founded Department of Interdisciplinary Life Sciences at Vetmeduni Vienna. At the same time, the Messerli spokesperson function – analogous to the other two institutes – was converted into a leadership function. In accordance with the rules of procedure of the Messerli Research Institute, the leadership rotates between the three Messerli professors every three years.

Important partners within the Messerli Research Institute include the coordination centre "Dog Trainer in accordance with animal welfare" and the research centre "Animal Law", as well as the Institute of Animal Welfare Science, with which the Institute has cooperated since the beginning within the framework of the Interdisciplinary Master in Human-Animal Studies. In addition, the Messerli Research Institute is associated with five other centres in cooperation with the two partner universities.



© Erika Jensen-Jarolim

The Team

Each of the three units of the Messerli Research Institute has one chair, scientific assistant positions, one administrative position and – in the case of the two natural science units – technical positions. Furthermore, there are an IT position and an administrative assistant supporting all three units. The Unit of Comparative Medicine has an additional administrative position to administrate the part of the unit at the Medical University of Vienna. In 2020, the Institute's staff comprises 39,5 positions on a full-time equivalent basis, of which 21,6 were permanently employed and 17,9 were financed by third-party sources. Further scientists, who are not counted at this point, work at the institute's associated centres.

The Foundation Board

Photos: © Messerli Foundation

From left to right:

- Adrian von Segesser, President of the Messerli Foundation
- Heinz Schweizer, Honorary President of the Messerli Foundation
- Hans Hengartner
- Dominique Ammann
- Felix Howald
- Ariane Schweizer Henniges

The members of the Messerli Foundation Board have been accompanying the Messerli Research Institute since its foundation with great commitment and goodwill. Thankfully, the prosperity of the Institute has become their personal concern.

The Scientific Advisory Board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From left to right:

- Peter Sandøe (University of Copenhagen, Denmark), Chair of the Scientific advisory board
- Nikola Biller-Andorno (University of Zurich, Switzerland)
- Sabine Werner (ETH Zurich, Switzerland)*
- Josep Call (University of St. Andrews, United Kingdom)
- Thomas Kündig (University of Zurich, Switzerland)

The Scientific Advisory Board of the MRI is the external advisory body to assure scientific quality, up-to-date research and focusing of the research at the MRI. The main issues are the strategic orientation of the research, the institute's international position and networking.

* Prof. Sabine Werner is also member of the scientific advisory board of the Messerli Foundation.

Goals

The Messerli Research Institute develops and broadens scientific findings for the cohabitation of humans and animals are developed and expanded. Current questions about the complex relationship between humans and animals and its principles are investigated from a biological, medical and ethical perspective.

Research in context

The Messerli Research Institute works at the interface between three universities in Vienna: the University of Veterinary Medicine Vienna, the Medical University of Vienna and the University of Vienna. It integrates the universities' existing knowledge and expertise into its own work. Alternatively, research and teaching at the three universities benefit from the institute's research findings and results.

Interdisciplinary research

Interdisciplinarity and a high degree of specialisation shape the Messerli Research Institute's unique profile. Each of the three units at the Messerli Research Institute works on its own specialised research topics, particularly within the framework of a number of competitively acquired projects, but also cooperates in numerous interdisciplinary research projects between the units as well as externally. Current research topics of the units are described in this annual report using selected examples.

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Comparative cognition

Tracing the thinking and feeling of animals

The understanding of animals as thinking and feeling beings is continuously increasing. This positive trend is due, among other things, to the efforts to provide a scientific foundation through research in the field of behavioural and cognitive biology. The staff of the Comparative Cognitive unit also strive to increase empirical knowledge about the cognitive, emotional and social abilities of domestic and wild animals with their non-invasive laboratory and field research.

Research priorities in 2020 were:

- Emotion and cognition of dogs and wolves
- Technical and social skills of kea and cockatoos
- Decision making in poison dart frogs
- Socio-cognitive abilities of domestic pigs

Staff

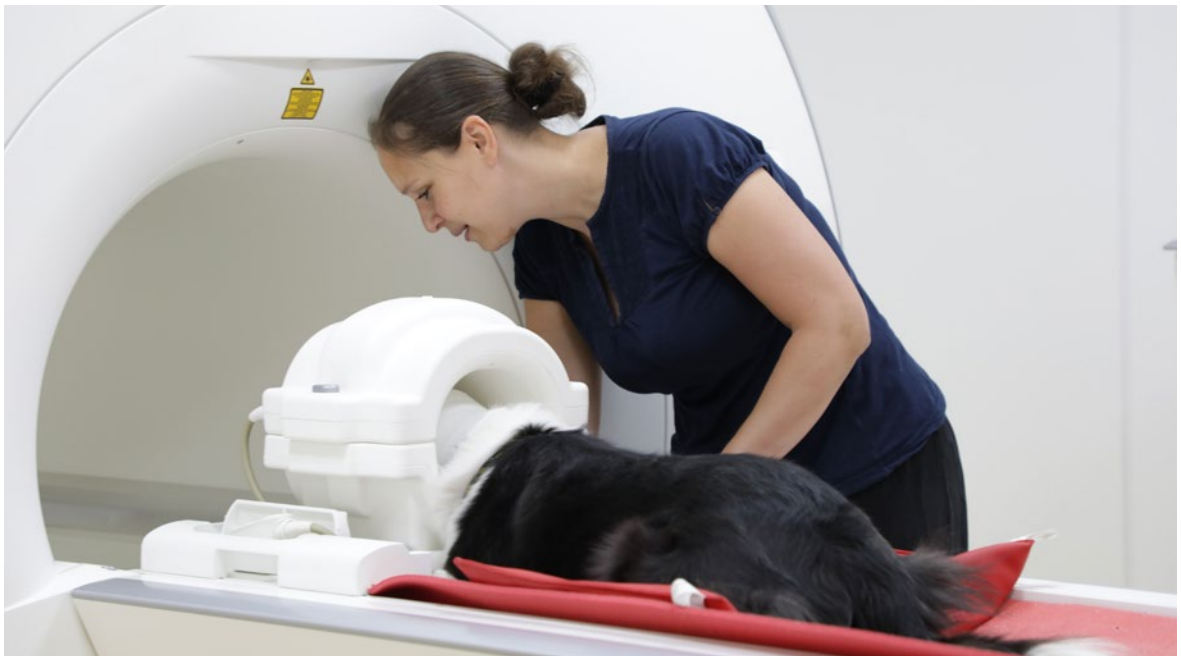
© Karl Weissenbacher / Vetmeduni Vienna

Research projects – highlights

Neuro-ethological research into the human-dog relationship

It has been known for some time that close relationships between humans and their dogs resemble the human mother-child bond. However, the underlying mechanisms have remained unclear until now, as one could only refer to behavioural studies. As part of a FWF doctoral programme (Cognition and Communication 2) and a new WWTF project (EVOSOCBRAIN), the world's first study on this topic was conducted using a multi-method approach. A behavioural preference test and an eye tracking test were combined with a neuroscientific study. Specially trained dogs were shown videos of familiar and unfamiliar faces with different emotions in a magnetic resonance imaging (MRI) scanner and the neuronal activities in the brain were measured. Regardless of the emotion, viewing the caregiver activated brain regions associated with emotion and attachment processing in humans. Interestingly, only relatively weak activations were found when other familiar people were presented. Strangers, on the other hand, only triggered activations in brain regions associated with visual and motor processing. Both the gaze sequence and preference test data supported the evidence found in the MRI for a superior role of the caregiver, even over familiar persons. Several publications, also on methodological innovations, demonstrate the great success of this new, neuro-ethological approach to the human-animal relationship.

The trained dog lies calmly and concentrated in the MRT under the guidance of Sabrina Karl.



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Living among humans: Trackability and cooperativeness in dogs and wolves

International research had suggested that wolves, similarly to dogs, may also be willing to cooperate with humans if proper socialization with humans occurs. In a paper published with Hungarian colleagues in Scientific Reports, we confirmed this suggestion in young animals as long as no interesting resource was involved in the task and the animals were asked to execute a simple command. However, as soon as the task was to return a toy, canine pups cooperated with their human partner more often than the wolves who preferred to keep the toy for themselves. Importantly, in frame of an MSc study, we also reproduced these results in another sample of dogs and wolves raised at the Wolf Science Center.

These results, among others that Zsófia Virányi summarized this year in her habilitation thesis, suggest that domestication has not only increased the willingness of dogs to cooperate with humans but also altered their ways to do so. We propose that dogs have evolved a deferential temperament, and therefore pay close attention to human action and readily follow human lead. This new hypothesis sheds a different light not only on the evolution of dog behaviour and cognition, but also on the cognitive and emotional mechanisms of dog-human cooperation and communication, and calls for special care for the well-being of dogs when interacting with humans.

© Christian Mikes

© Erika Jensen-Jarolim

Comparative medicine

Goal: One Health

When the unit was founded in 2011, the term “comparative medicine” seemed infinitely broad, consisting of human plus veterinary medicine. In fact, coming from human (and mouse) allergology and immunology, we have virtually doubled our scientific and technological expertise since then. We now understand that our main topics also address environmental influences in humans and animals. In the Corona Year 2020, the transmission of SARS-CoV-2 between animals and humans was of particular interest to us. Therefore, from today’s perspective, the term “One Health” fits us much better.

However, the central question for us is always what is decisive in the development of allergy or immune tolerance, whether in humans or animals. We investigate proteins, including immunoglobulins, that modulate inflammation.

Staff

Research projects – highlights

Decoding the farmyard protective effect against allergies

In the team of comparative medicine, the cow became increasingly significant as an interface between humans, animals and the environment. It has great significance in the international history of coexistence between humans and animals, but especially in the context of dairy farming in Europe. While urbanisation requires animal husbandry on large farms, “steaming” cow stalls can still be found in Austria thanks to traditional alpine farming. Interestingly, it is precisely these traditional cow sheds and the drinking of raw milk that significantly protect against the widespread diseases of allergies, asthma and atopic dermatitis.

However, the high population density in conurbations required the introduction of processing methods for the storability of dairy products. In these processes, the milk is broken down into all its individual parts and loses many of its naturally healthy ingredients in the process.

In her top paper in the “Journal of Allergy and Clinical Immunology”, Franziska Roth-Walter was able to prove that the main whey protein beta-lactoglobulin (BLG) can cause completely different immune responses. In its native form, as in raw milk, it is loaded with “good” ligands from the cows’ plant food. Only in this loaded holo-form did BLG prevent the development and triggering of allergies in mice and in humans. It was possible to decipher the molecular mechanisms precisely: beta-lactoglobulin docks like a wheelbarrow receptor-mediated to immune cells, which take up the ligands and set their reaction profile to “tolerance”. This targeted micro-nutrition replenishes the depleted stores of regulatory immune cells in the allergy, and immune resilience develops. Franziska Roth-Walter also conducts clinical studies in human allergy patients on these mechanisms.

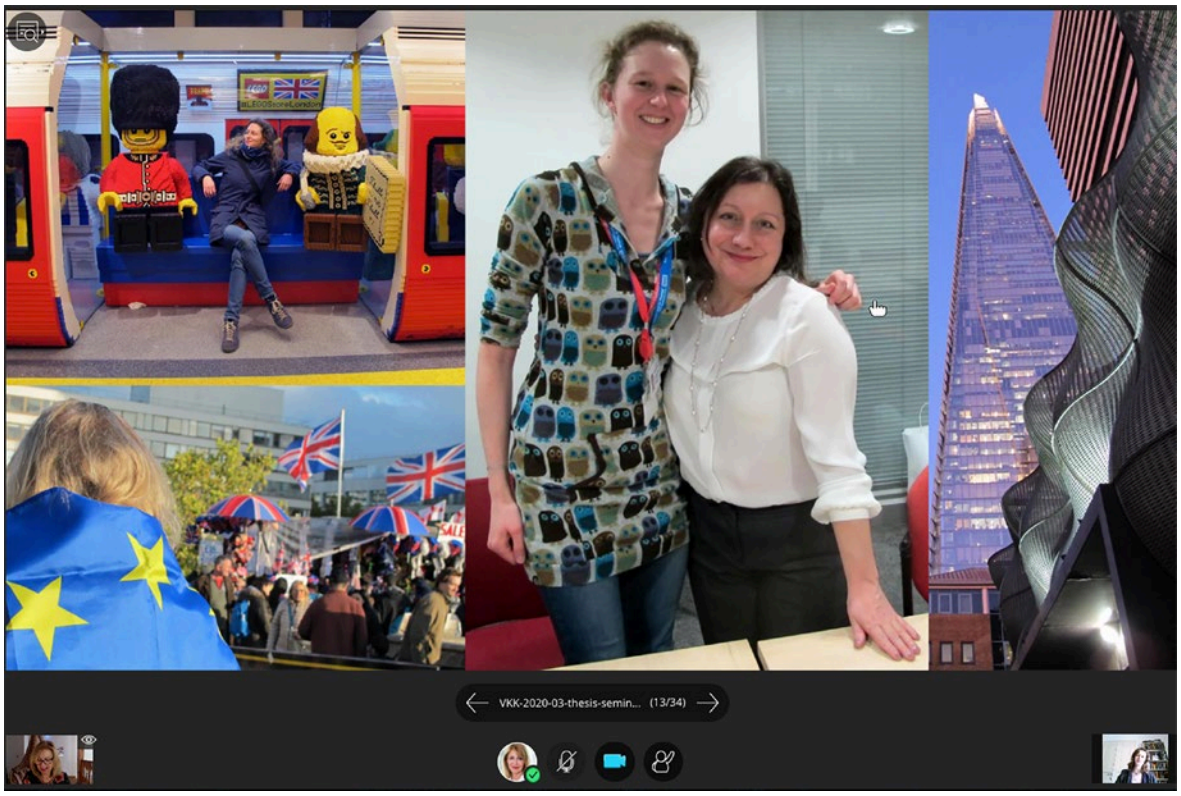
People and animals living together on the farm is good for health.

Pipeline with PIPE-cloned immunoglobulins

In order to understand how antibody responses influence allergies, Christina Pranger and Verena Köhler used a brand-new method, PIPE cloning, to generate immunoglobulins of the classes IgE, IgG1 and IgG4 in their PhD work in cooperation with Kings College London. While IgE plays a causal role in allergy, IgG1 and especially IgG4 could counteract this.

The generated immunoglobulins are therefore important tools for studies on milk and birch pollen allergy and have been published in the journal “Allergy”, as well as in the “International Journal of Molecular Sciences/Immunoglobulins in Inflammation”. Both PhD theses were carried out within the MCCA excellence doctoral programme and supported by the FWF. Christina Pranger was also supported by the Messerli Foundation.

Virtual exchange: Verena Köhler researched with Sophia Karagiannis, at Kings College London.

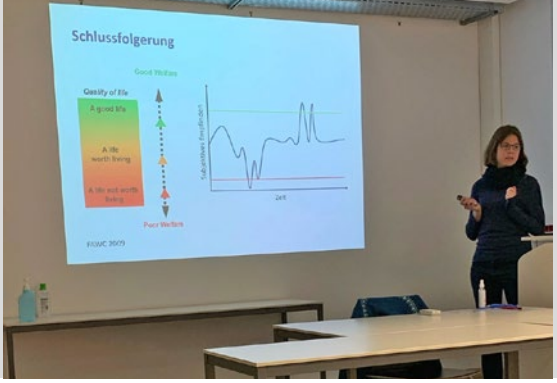


© Erika Jensen-Jarolim

Ethics and Human-Animal Studies

The Unit of Ethics of Human-Animal Studies deals with basic and applied questions about the responsible treatment of animals. Topics covered include veterinary practice, agricultural use of animals, pet ownership and animal experimentation, as well as questions about the moral permissibility of instrumentalisation and the ethical relevance of the cognitive relationship between humans and animals. In 2020, the challenges associated with the Corona pandemic prompted an online lecture series on animals in lockdown. This year also saw various national and international collaborations that also make the social relevance of our work visible, including the interdisciplinary research platform *Ethics in Equine Medicine*.

Staff



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Workshop with Sara Hintze (BOKU) on the quality of life of horses.

Research projects – highlights

Ethics in equine medicine

The newly founded interdisciplinary research platform Ethics in Equine Medicine started work at the beginning of 2020. The long-term cooperation between Gut Aiderbichl, the University Equine Hospital at Vetmeduni Vienna, the Clinical Unit of Anaesthesiology and Perioperative Intensive-Care Medicine of Vetmeduni Vienna and the Messerli Research Institute aims to research ethically relevant veterinary aspects of the human-horse relationship.

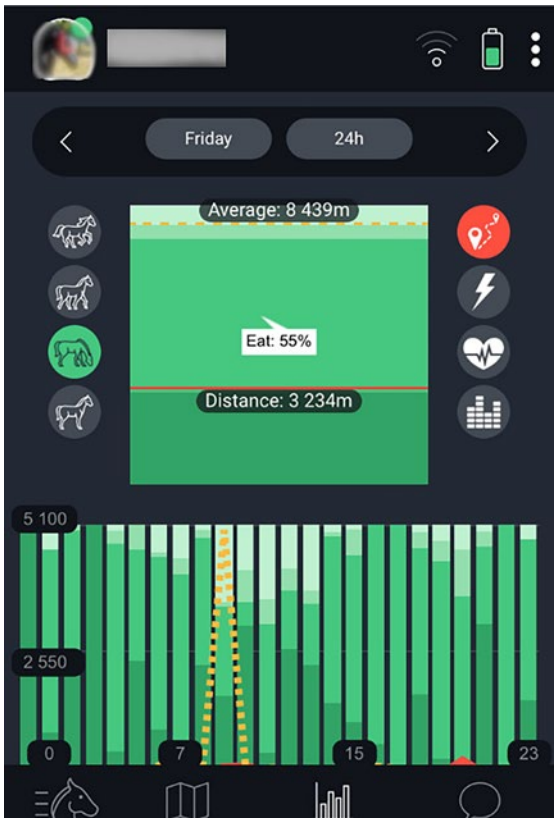
The cooperation started with two PhD projects on the quality of life of chronically ill and/or old horses as a criterion in the context of decisions about therapy and euthanasia. The PhD project of Mariessa Long in the Unit of Ethics and Human-Animal Studies examines the quality-of-life concept in relation to old and/or chronically ill horses from a theoretical and empirical perspective. Furthermore, the focus is on the development of an ethics tool to support responsible decision-making processes in this context. Zsófia Kelemen's PhD project focuses on the practical aspects of developing and validating quality of life indicators for chronically ill and/or old horses and is based at the University Equine Hospital.

With this project we want to support responsible decision-making in an increasingly important area of the human-horse relationship.

Project team of the Vetmeduni Vienna in January 2020. (f.l.t.r. Jessika-M. Cavalleri, Mariessa Long, Herwig Grimm, Florien Jenner, Ulrike Auer).

© Herwig Grimm / Vetmeduni Vienna

Example data of an activity tracker for horses.



© Zsofia Kelemen

Transnational study on modern small animal medicine

As part of her PhD project, Svenja Springer 2020 conducted a large-scale transnational study on the topic of *modern small animal medicine* in Austria, Denmark and Great Britain. In cooperation with the University of Copenhagen and the University of Glasgow, a questionnaire study was designed with the aim of shedding light on attitudes of small animal veterinarians from Austria, Denmark and the UK regarding developments in small animal practice and how these are reflected in clinical decision-making processes. The study focused on topics such as the development of diagnostic and therapeutic technologies and methods, health insurance for dogs and cats, as well as the use of the internet by pet owners and its influence on veterinary practice.

The successful cooperation of the three universities will be maintained within the framework of a follow-up study, whereby relevant topics and aspects of modern small animal medicine will be investigated from the perspective of small animal owners.

© Isabelle Grubert

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Examination and Coordination Centre

Assistance and therapy dogs

The Examination Centre at the Messerli Research Institute to implement §39a of the Austrian Disability Act, assistance and therapy dogs, is internationally unique and recognised. Numerous invitations for lectures by the head of the Testing Centre, Karl Weissenbacher, at international congresses such as the EGDF Congress, ESAAT Conference and national congresses could not be accepted due to the SARS-Covid-19 situation.

The innovative work in the European Committee for Standardization (CEN) to develop a single European norm in the field of assistance dogs was continued successfully. The working group “Lifelong well-being of assistance dogs”, under the leadership of Karl Weissenbacher, successfully continued its work under difficult conditions and sent a draft to the national organisations of the CEN member countries for approval.

© Karl Weissenbacher / Vetmeduni Vienna

In the national standards institute Austrian Standards, Karl Weissenbacher was elected chairman of Committee 196, Technical aids for people with disabilities. In the scientific field, one diploma thesis was completed and one diploma thesis and one master’s thesis were started.

In the very own area of examinations, 593 therapy assistance dog teams and 43 assistance dog teams were successfully tested in 2020 despite an almost six-month moratorium on examinations.

Staff

Dog trainer in accordance with animal welfare

The Examination and Coordination Centre has become an indispensable public information office for media such as print, online, radio and TV. Likewise, Ombudspersons' offices for animal protection, regional governments and ministries contact the Centre for information regarding dog-related issues. Therefore, Karl Weissenbacher was co-opted into the permanent work of the Animal Protection Council.

In 2020, 135 trainers were newly examined, 102 of whom passed the examination. The number of active dog trainers qualified in animal welfare is now 352. A total of more than 13,000 hours of further training were recognised, thus improving the quality and level of knowledge of trainers in Austria.

University Course Applied Cynology

The sixth university course started in October 2018 and will be completed at the end of the winter semester 2021. The start of the seventh course was postponed to summer semester 2022 due to the pandemic.

© Karl Weissenbacher / Vetmeduni Vienna

Animal Law at the Messerli Research Institute

Animal law is an issue in teaching and research at the Messerli Research Institute, particularly focusing on general animal welfare legislation and animal testing legislation. This field is headed by Regina Binder, who also heads the Information and Documentation Office for Animal Welfare and Veterinary Law at the University of Veterinary Medicine, Vienna. The Unit of Ethics and Human-Animal Studies and the Unit of Comparative Medicine have several areas of interdisciplinary collaboration with this field. This collaboration comprises mainly teaching in the Master's programme IMHAI and the scientific discussion of questions arising from current publications and projects. The normative foundation of the various forms of human-animal interaction and their relationship to empirical findings in natural science are central in this cooperation.

© Herwig Grimm / Vetmeduni Vienna

Interdisciplinary Master in Human-Animal Interactions (IMHAI)

In October 2020, the ninth cohort began the Master's programme offered by the Messerli Research Institute, which provides students with both theoretical and practical training in topics closely related to the Institute, its goals and its research. The lecturers from the three Messerli units are supported by lecturers from the Institute of Animal Husbandry and Animal Welfare (Head: Jean-Loup Rault) and the Domestication working group at the Konrad Lorenz Institute of Ethology (Head: Friederike Range). This internationally oriented Master's programme, which is taught in English and is unique worldwide in its interdisciplinary composition, is designed to give students the ability to assess the design of the human-animal relationship on a scientific basis and with ethical reflection, and to contribute to improvements by means of innovative ideas and concepts.

The knowledge acquired at the beginning of the programme in lectures and conversations is deepened in seminars and later methodically supplemented in practical courses (for example "Into Science: Practical course in behavioural and cognitive sciences") and in the laboratory. The knowledge and skills enable the students to independently carry out and defend a first scientific project as part of their Master's thesis. Upon successful completion of the degree, graduates will subsequently have the skills to assess, design and improve human-animal relationships in an evidence-based and ethically sound manner in many socially relevant areas, but also in an academic career. In October 2021, the IMHAI programme will be launched in a new version, even more focused on scientific research and academic careers.

© Isabelle Grubert

In 2020, 17 graduates completed their studies:

- **Catherine Cords**, “Tactile and auditory human-cattle interactions: Effects on behavioural reactions towards humans and during isolation” (Supervisor Susanne Waiblinger)
- **Johanna Freyborn**, “On Justified and Unjustified Analogies in Animal Ethics” (Supervisors Herwig Grimm, Judith Benz-Schwarzburg)
- **Alina Gieseke**, “Two Farm Animal Sanctuary Models and Their Potential to Provide Justice to Domestic Animals in Past, Present, and Future” (Supervisor Susana Monsó)
- **Melanie Koglmüller**, “Cooperation in free-ranging Kune Kune pigs (Sus scrofa domesticus)? (Supervisors Ludwig Huber, Marianne Wondrak)
- **Anna Korath**, “Comparing allergenic pollen exposure on horse grounds and the urban human environment” (Supervisor Erika Jensen-Jarolim)
- **Kristina Kull**, “Habituation to enrichment objects in kea (Nestor notabilis)” (Supervisor Raoul Schwing)
- **Richard Long**, “Animals and the Harm of Moral Thwarting: Assessing the Impact of Scientific Research on Moral Subjects” (Supervisor Judith Benz-Schwarzburg)
- **Viola Magierski**, “The effects of mother-bonded rearing in dairy farming on animals’ social traits” (Supervisor Susanne Waiblinger)
- **Giulia Pedretti**, “The effect of intranasal oxytocin on dog-owner social interactions: behavioural synchrony and joint attention” (Supervisor Sarah-Marshall-Pescini)

> *The IMHAI program gave me the opportunity to dive deeper into topics that I had priorly only been able to look at from the outside.*
>
> Alina Gieseke

> *I‘m happy I had a chance to be a part of IMHAI programme, as it gave me a chance to learn about similar topics from different view-points – a truly valuable interdisciplinary experience!*
>
> Kristina Kull

> *The IMHAI programme opens perspective and provides skills on different fields related to Human-Animal Interactions to enterprising students who are willing to put theoretical reflections and practical skills to good use.*
>
> Giulia Pedretti

- **Natalie Popovova**, “Instrumentalisation of Animals – Is the training and use of working dogs a morally problematic type of instrumentalisation” (Supervisor Martin Huth)
- **Katrin Portele**, “Measuring Equine Locomotion in Personality tests: Validation of the Equisense Motion (Supervisor Susanne Waiblinger)
- **Annette Reddingius**, “Learning from different demonstrators in Kune Kune pigs” (Supervisors Ludwig Huber, Ariane Veit)
- **Susanne Siegmann**, “Cooperative behaviour in naked mole-rats” (Supervisor Dustin Penn)
- **Mariessa Stademann**, “Clinical Ethics Support Services in a Small Animal Veterinary Hospital” (Supervisors Herwig Grimm, Svenja Springer)
- **Elisabeth Suwandschieff**, “Do I know you?” Categorising individuals on the basis of familiarity in Kea (Nestor notabilis)” (Supervisors Raoul Schwing, Ludwig Huber)
- **As well as two other theses:** “Social bonds in pigs” (supervisor Jean Loup-Rault) and “Telomere dynamics in naked mole-rats” (Supervisor Dustin Penn).

> *Starting the IMHAI master was the best decision I ever made, and it laid the foundation for my dedication to animal behaviour and cognition which I am lucky enough to pursue further in my PhD.*
>
> Elisabeth Suwandschieff

> *The IMHAI provided a fascinating opportunity to study the human-animal relationship from various perspectives and via different disciplines.*
>
> Mariessa Long

> *I feel incredibly lucky to have been able to spend the last years learning so much about topics that I find compelling and that I consider to be of great importance.*
>
> Richard Long

> *By studying IMHAI you learn different aspects of the human-animal relationship and if you have not done it before, you definitely start to think out of the box during this study.*
>
> Katrin Portele

The doctor's hat of Marianne Wondrak.

Further courses

Staff members of the Comparative Cognition unit taught courses at both the University of Veterinary Medicine, Vienna and the University of Vienna. In addition, the theses of students from these universities, as well as from foreign universities, were supervised. The following theses were completed: Karin Reiterer (Vetmeduni Vienna), Astrid Böhm (University of Vienna), Laura Bonnet (University Paris XIII, France), Amelie Heraud (University of Strasbourg, France) and Peter Seban (University of Bratislava, Slovakia). In total, 26 Master's and 13 PhD students were supervised at the unit in 2020.

The members of the Comparative Medicine unit participate in the mentoring programme for veterinary students to teach them scientific ways of thinking, which they will need at the latest for their diploma theses. The other teaching offers of Comparative Medicine at both universities (Vetmeduni Vienna and Medical University of Vienna) are listed in the Scientific Self Evaluation Report: e.g. basic immunology lectures, in the doctoral programmes, main lectures Block 13 of the medical students.

The staff of the Ethics and Human-Animal Studies taught topics in practical and theoretical philosophy and veterinary ethics at the Vetmeduni Vienna and the University of Vienna. They also taught at the University of Teacher Education of Lower Austria, the University of Teacher Education of Styria, the FU Berlin, in a philosophical-theological-biological seminar at the University of Vienna, in the university course in animal-assisted therapy and the animal keeper school at Vetmeduni Vienna. In 2020, a total of 28 master's/diploma theses were supervised (7 IMHAI, 7 Vetmeduni, 14 Uni Vienna) and 12 of these were completed (5 IMHAI, 2 Vetmeduni, 5 Uni Vienna).

PhD and doctoral students

DK programme Cognition and Communication 2

The FWF-funded doctoral programme "Cognition and Communication" (deputy speaker: Ludwig Huber) was already in its fourth and final year in 2020. Members of the Messerli Research Institute supervised projects on comparative brain research into dogs and humans (Sabrina Karl), on vocal learning in keas (Mélissa Sebilleau), on the personality of frogs (Mélissa Peignier) and on sequential tool use in Goffin's cockatoos (Theresa Rößler).

DK-programme Molecular, Cellular and Clinical Allergology (MCCA)

This excellence programme, originally funded by the FWF, was affiliated with the newly launched Danube Allergy Research Cluster (DARC) in 2020 to combine research and teaching. The faculty members are internationally renowned experts with strong connections to the global research community. The rectification of the first DARC PhD cohort took place in August 2020 and Mrs. Aila Fakhimahmadi was competitively recruited for Comparative Medicine.

PhD students in the Comparative Cognitive unit

Two PhD students graduated with distinction: Amelia Wein-Schwing ("Vocal production in kea parrots (*Nestor notabilis*)"), and Marianne Wondrak ("Socio-cognitive abilities of free-ranging pigs (*Sus scrofa domesticus*), their indicators of welfare and ethical implications"). PhD projects on social learning (Ariane Veit), on the neurobiology of social cognition in dogs (Lucrezia Lonardo) and on comparing tool innovation in Goffin cockatoos and children (Antonio Osuna-Mascaro, Poppy Lambert, Jennifer Colbourne) are still in progress.

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Amelia Wein with a kea.

PhD students in the Unit of Comparative Medicine

The Comparative Medicine unit currently has 7 PhD students, including 3 in MCCA, and 4 international visiting PhD students from Egypt and Iran. The topics arise from the main research fields of allergology and immunology, as well as from the unit's competitively funded projects with FWF and the state of Lower Austria. The work deals with the analysis of IgE profiles of diseased allergy sufferers, the cloning of allergens and immunoglobulins, and their influences on the cellular immune response in humans and animals.

Doc.Fund: Forms of Normativity – Transitions and Intersections

The FWF-funded project "Forms of Normativity" (FoNTI) is based at the Institute of Philosophy at the University of Vienna and employs ten PhD students who approach the broad topic of normativity in innovative projects. Herwig Grimm acts as a member of the project team and supervises two PhD students in the programme together with Angela Kallhoff and Bernhard Schmid.

PhD students in the Unit of Ethics and Human-Animal Studies

In the Unit of Ethics of Human-Animal Studies, six scientists were supervised in various PhD programmes in 2020: Birte Wrage (Moral Capacity of Animals) and Mariessa Long (Quality of Life of Horses as a Criterion for Therapy Decisions) in the PhD programme of Vetmeduni Vienna, Jessica Bicking (Forms of Normativity), Andreas Aigner (Psychoanalysis and Animal Ethics) and Sarah Espinosa (Ethics of Scarce Resources) in the PhD programme of the University of Vienna, and Svenja Springer (Professional Morality in Veterinary Medicine) in the PhD programme of the University of Copenhagen in collaboration with Vetmeduni Vienna. Andreas Aigner completed his doctoral studies with distinction in spring 2020.

Engagement in committees

Highlights 2020

Ludwig Huber is a member of the Scientific Advisory Boards of the Institute for Advanced Sciences Berlin (WIKO) and of the Schönbrunn Zoo in Vienna as well as a member of the Supervisory Council of the Jane Goodall Institute Austria. At the Vetmeduni Vienna he was a member of the Scientific Advisory Boards of the Animals for Therapy curriculum and the university course Cynology as well as the Coordination Board of the Teaching and Research Farm Kremesberg (VetFarm). Together with Zsófia Virányi, he is a member of the Scientific Commission of the Examination and Coordination Centre for assistance and therapy dogs and dog trainers in accordance with animal welfare and head of the Clever Dog Lab association. Zsófia Virányi is also Secretary General of the Wolf Research Centre Association. Eva Ringler is a member of the Council of the European Society of Herpetology. Raoul Schwing is founder and board member of the ÖGT Section for Exotics.

Ludwig Huber (far right) next to Jane Goodall (2nd from left) and the two other members of the Supervisory Board of the Jane Goodall Institute Austria.

© Bernhard Eder

As head of the Messerli Research Institute, Erika Jensen-Jarolim was in charge of communication with the Scientific Advisory Board of the institute and the Messerli Foundation. She was the 1st Vice-President of the Austrian Society of Allergology and Immunology (ÖGAI) in 2020. Isabella Pali-Schöll is Chair of the Interest Group of Comparative Allergology in the European Academy of Allergy and Clinical Immunology (EAACI), Franziska Roth-Walter is Secretary General of the Task Force for Immunopharmacology of the EAACI. Erika Jensen-Jarolim is Chair of the Task Force of Allergo-Oncology in the EAACI and a member of the Board of the Allergen Immunotherapy Interest Group.

In 2020, the staff of the Ethics and Human-Animal Studies were engaged in panels at local, national and international level: in the Ethics and Animal Welfare Committee, the Vet Innovation Circle, the Curriculum Commission of Vetmeduni Vienna, the Swiss Federal Ethics Committee on Non-Human Biotechnology (ECNH), the Scientific Advisory Board of the Association Tierschutz macht Schule (Animal Protection goes School), the Scientific Commission of the Examination and Coordination Centre for assistance dogs, the Austrian Commission for Animal Testing, the Animal Protection Council of Berlin, the Scientific Advisory Board of the Institute TTN in Munich, the European Society for Food and Agricultural Ethics and others.

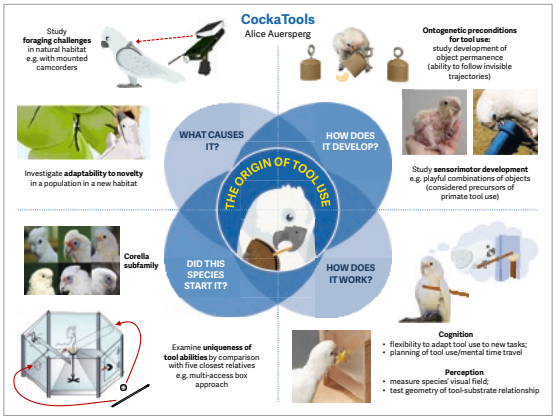
Erika Jensen-Jarolim with Vera Russwurm.

© Erika Jensen-Jarolim

Grants and Awards

2020

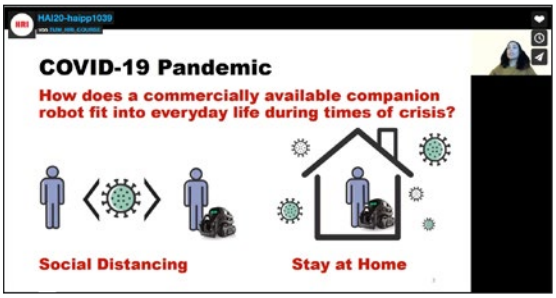
- **Alice Auersperg** received one of seven START awards for top emerging researchers from the FWF from Science Minister Faßmann. She was able to succeed in the highly competitive selection process among 111 applications and obtain funding of 1.2 million euros for research into innovative tool use in a parrot.



Alice Auersperg receives a START Award from the FWF 2020.

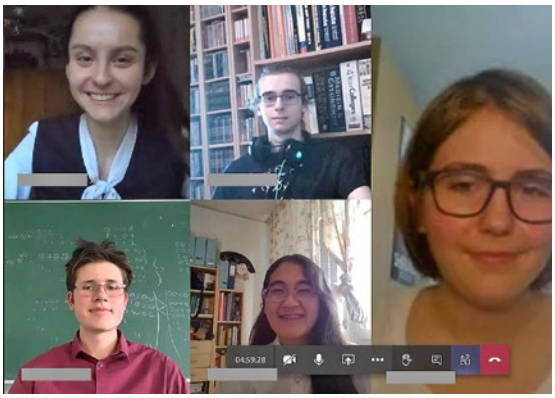
© FWF-Luiza Puiu

- **Christiana Tsiourti** received the **Best Poster Award** at the International Conference on Human- Agent Interaction (Sydney, Australia).
- **Martina Darwich**, who did her pre-scientific work in the Kea Lab under the supervision of Raoul Schwing via an FFI internship, won the **Dr. Hans-Riegel Prize in Biology** for her work.
- **Galateja Jordakieva**, former PhD student of the Unit of Comparative Medicine, was honoured with the **Research Promotion Award of Erste** der österreichischen Sparkassen AG, the Medical Association for Vienna, for her publication “Country-wide medical records infer increased allergy risk of gastric acid inhibition”, published in Nature Communications from 2019.



© Christiana Tsiourti / Vetmeduni Vienna

Christiana Tsiourti during her online lecture.



© University of Vienna

Martina Darwich during the online award ceremony.

© Tim Hasenöhrl

Galalateja Jordakieva receives the research funding award.

Cooperation & International Engagement

The most important cooperation partners in 2020

Associated centres

Institute for Pathophysiology and Allergy Research (ipa) at the Centre for Pathophysiology, Infectiology and Immunology (CePii) at Meduni Vienna

The Comparative Medicine team also worked in its lab at the AKH, at the Institute for Pathophysiology and Allergy Research at Meduni-Wien, where the technical equipment for the research focus on immunology is available, including state-of-the-art laboratory equipment, as well as facilities for animal husbandry. This institute has been designated a Center of Excellence in Allergy by the World Allergy Organization. This inspiring environment has also been central to the new Danube Allergy Cluster (speaker Rudolf Valenta) since 2020, with an affiliated doctoral college MCCA (head Winfried Pickl). The team of the Comparative Medicine unit is proud to have contributed to the allergy focus of Meduni Vienna for years.

Institute of Philosophy of the University of Vienna

The Institute of Philosophy at the University of Vienna is relatively large and highly visible internationally and can draw on the many areas of competence of its members. It considers itself obliged to offer courses which cover the breadth of the discipline and, at the same time, meets high standards of subject specialisation. Through Herwig Grimm's honorary professorship, the teaching and supervisory activities and the cooperation within the framework of the FWF project "Forms of Normativity" (doc.funds) and the "Vienna Doctoral School of Philosophy" as well as the teaching activities of Martin Huth and Samuel Camenzind, there is an intensive exchange and regular cooperation with the Institute of Philosophy at the University of Vienna. Judith Benz-Schwarzburg teaches regularly within the Philosophical-Theological-Biological Seminar of the University of Vienna. In 2020, this also involved the role of animals in the Corona Crisis.

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Clever Dog Lab

Due to the pandemic, research on canine intelligence and behaviour could only continue intermittently in 2020. Nevertheless, there were numerous highlights: the first data from over 100 dogs were collected for the newly founded international research collaboration Many Dogs. A new publication showed that dogs especially imitate the actions of their owners. In another publication, we studied for the first time how dogs' personalities change with age. Here we identified four older dogs in a sample of 217 Border Collies whose aimless, stereotyped wandering suggested that this behaviour might predict developing dementia. The eye tracking lab collected and published the first data on anticipatory looking in dogs. Further eye tracking studies on dogs' expectations about their physical environment were conducted. In addition, the first study on contactless and automated measurement of dog behaviour (so-called 3D tracking) took place. This technique was used in a pilot study to investigate how dog behaviour changes when owners leave the room.

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Research Station Haidlhof

The Kea Lab was approved for an FWF individual project in 2020 on the topic of motor imitation in the Kea mountain parrot. The project then allowed the employment of a new PhD student, Elisabeth Suwandschieff, a former IMHAI student, who was able to submit and successfully defend her master's thesis on face recognition at Kea in the spring of 2020. In addition, Kristina Kull (IMHAI) and Amelia Wein-Schwing (PhD) successfully completed their theses.

The Clever Pig Lab's focus in 2020 was on social learning: Ariane Veit's PhD thesis progressed well and three students' theses were integrated into her work under her co-supervision. Melanie Koglmüller (IMHAI) and Annette Reddingius (IMHAI) were able to successfully complete their master's thesis and Marianne Wondrak her dissertation. Construction work on a new test hut with a large test room and modern camera surveillance was completed and the first tests could be started.

Goffin Labs in Goldegg (A) and Tanimbar (Indonesia)

The Goffin Labs received a START project from the FWF in June 2020, which will start this in spring 2021. Goffin studies within an ongoing FWF individual project, an FWF Schroedinger project and a WWTF project could be carried out despite the pandemic, except for planned direct comparisons with human children. This year there were five new publications in scientific journals (including PNAS; Scientific Reports). Among other things, it could be shown that Goffin cockatoos can reconstruct certain physical object properties of a template from memory and that the cockatoos' ability to find solutions to new problems is not a product of human influence. The Tanimbar team also discovered an unusual and complex new form of tool use and, unfortunately, that the PBFD virus seems to be common in parrots, at least on the main island of the archipelago.

Florian Vogel, the head of animal care at Haidlhof, checking the weight of a kea.

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Mark O'Hara together with the Tanimbar Forestry Department during an examination of an animal suffering from PBFD in the field.

© Berenika Mioduszewska / Vetmeduni Vienna

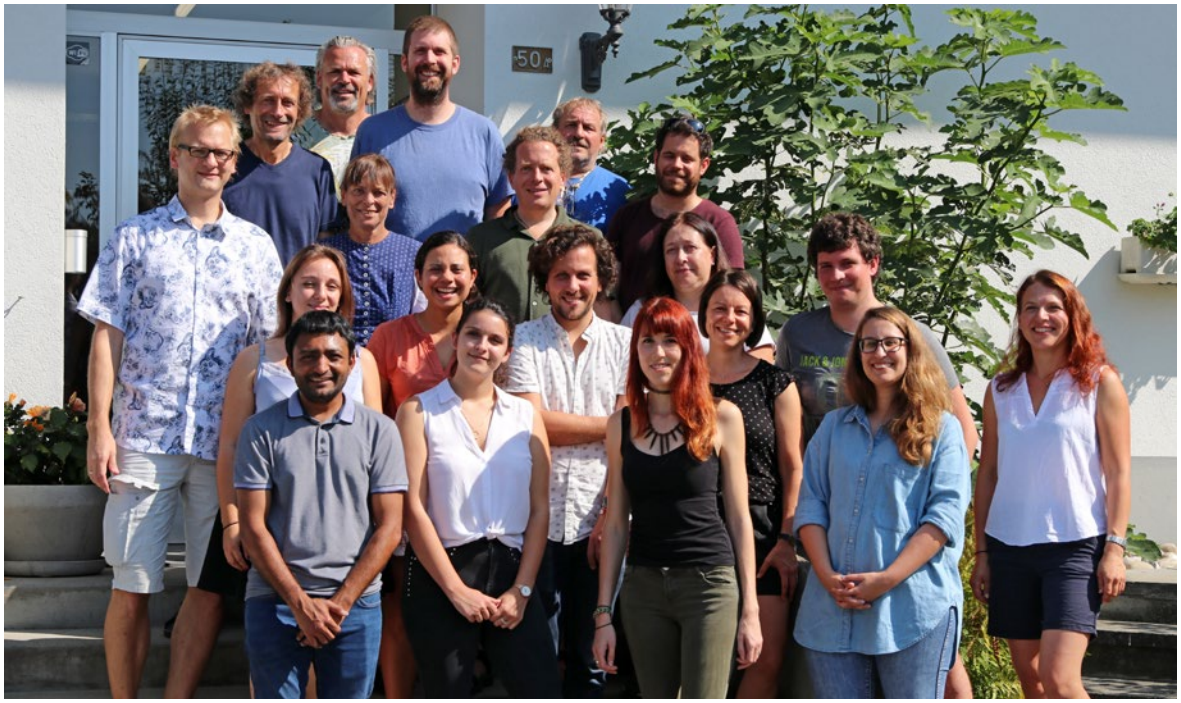
Frog Lab

At the beginning of the year, the frog laboratory at the Biocentre Althanstrasse was still associated with the Messerli Research Institute through Eva Ringler, a scientist in the Comparative Cognition unit. In this lab, frogs of the species Allobates femoralis were kept under species-appropriate conditions and their brood care behaviour was researched in special terrariums. In July 2020, the lab moved to Switzerland, as Eva Ringler took over the professorship of behavioural ecology at the Institute of Ecology and Evolution at the University of Bern and the associated Hasli Station. Poison dart frogs have found a new home at Hasli Station, where they are being researched together with chameleons by Eva Ringler and her new team. Eva Ringler will remain scientifically connected to us in the future.

© Eva Ringler

Ethological Station of the University of Bern.

Eva Ringler and her new department “Behavioral Ecology” at the University of Bern.



© Max Ringler

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Wolf Science Center (WSC)

This year brought a lot of success but sorrow and challenges to the Wolf Science Center. The last member of the first generation of WSC animals has left us: after Shima and Aragorn, Kaspar also died on 17 December due to old age. The pandemics put a lot of restriction on our visitor programmes; for instance, the brand-new seminar on Domestication we planned for this year we had to postpone to 2021. At the same time, a great number of papers have been published and exciting projects have gained funding, including a project comparing the physical cognition of dogs and wolves that we have already started to work on. Finally, a short workshop series took place in order to initiate collaboration with other colleagues at the Vetmeduni Vienna where we presented our first results on how the dogs, wolves and humans inhabiting the WSC share their microbiomes.

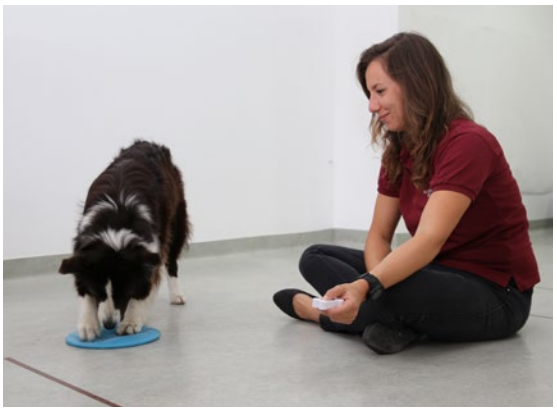
The wolf Kaspar from the first generation of WSC wolves.

© Rooobert Bayer

Companion Animal Behaviour Working Group

For the Working Group, this year began with an exciting internal event: its members presented their goals and plans to the Rectorate set up as a strategic workshop in February. As data collection proceeded less successfully under the difficult conditions of this year, we focused on preparing project applications and publications. One of the highlights of the year was a paper on cognitive aging in a large sample of dogs of various breeds, investigating whether life-long training and an enriched diet can delay cognitive decline in dogs over 6 years of age. In another publication we addressed the training practice of not rewarding dogs after every click, and found that such partial rewarding not only does not increase the success of shaping a new behaviour but may even lead to negative affective states in dogs.

Scientist Giulia Cimarelli during clicker training.



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Cooperation with our partner universities

University of Veterinary Medicine Vienna

- Clinical Unit of Anaesthesiology and Perioperative Intensive-Care Medicine
- Clinical Unit of Diagnostic Imaging
- Institute of Animal Welfare Science
- Institute of Laboratory Animal Science
- Institute of Medical Biochemistry
- Institute of Population Genetics
- Konrad Lorenz Institute of Ethology
- Tierpflegeschule (Animal Keeper School)
- University Clinic for Horses
- University Clinic for Ruminants
- University Clinic for Swine
- University Hospital for Small Animals, Dermatology, Oncology
- VetCore

University of Vienna

- Cognitive Science Platform
- Department of Behavioural Biology and Human-Animal Relationships Research Group
- Department of Cognitive Biology
- Faculty of Psychology
- Institute of Philosophy

Medical University of Vienna

- Austrian Pollen Warning Service
- Center for Biomedical Engineering and Physics
- Center for Pathophysiology, Infectiology and Immunology
- Department of Child and Adolescent Psychiatry
- Department of Dermatology
- Department of Ear, Nose and Throat Diseases
- Department of Psychiatry and Psychotherapy
- Department of Radiology and Nuclear Medicine
- Immunology Research Cluster

Other national research partners

- Animals as therapy/science and training centre
- Austrian Academy of Sciences
- Austrian Institute of Technology Tulln
- Catholic-Theological Private University Linz
- Gut Aiderbichl
- Karl Landsteiner Univ. Krems
- Network Berufliche Assistenz, Vienna
- Technical University of Vienna
- University of Natural Resources and Applied Life Sciences, Vienna
- Zoo Schönbrunn
- Zoo Wels

Further international research partners

The Unit of Comparative Cognition has many research partners in Europe: Belgium (Ghent), Germany (Berlin, Frankfurt, Göttingen and Leipzig), France (Rennes, Strasbourg), the UK (Birmingham, Bristol, Edinburgh, Exeter, Lincoln Oxford and St Andrews), Italy (Milan, Padua, Parma, Rome and Rovereto), Netherlands (Leiden, Utrecht), Norway (Trondheim), Sweden (Lund) and Hungary (Budapest). In addition, the unit cooperates with partners in French Guiana (Saut Pararé), Indonesia (Cibinong, West Java, Bogor), Japan (Tokyo), New Zealand (Auckland, Christchurch) and the USA (Atlanta, Berkeley, Duke, Los Angeles, Minnesota, Nebraska, and Stanford). Of particular importance is the cooperation agreement with the Indonesian Academy of Sciences (Institute of Biology), renewed in 2020, for joint research into Goffin's cockatoos on Yamdena Island of the Tanimbar archipelago.

Most of the research partnerships of the Comparative Medicine unit again resulted from networks through international societies: World Allergy Organization (WAO), European Academy of Allergy and Clinical Immunology (EAACI) and American Academy of Allergy, Asthma and Immunology (AAAAI). We were pleased to continue the successful cooperation with the Comparative Oncology Trial Consortium (COTC) of the National Cancer Institute.

The Unit of Ethics of Human-Animal Studies cooperates with researchers at university institutions. Amongst others, in Denmark with the University of Copenhagen, in Germany with the 3R-Zentrum Gießen (ICAR3R), with the Institute of Philosophy of the TU Darmstadt and the Faculty of Theology of the HU Berlin, and in Switzerland with the University of Basel, the University of Zurich and the Vetsuisse Faculty of the University of Bern. There were also collaborations with the University of Skopje, University of Ljubljana and University of Zagreb within the framework of a project submission on teaching in veterinary ethics, as well as with York University Toronto (Canada) and University Ohio (USA) within the framework of the project "Morality in animals".

Cooperation with networks and societies

Members of the Comparative Cognition, scientists are represented both in international societies (Europe: Ethological Society, The Association for the Study of Animal Behaviour, Canine Science Forum, European Association of Zoos and Aquaria; USA: American Psychological Association, Comparative Cognition Society, Psychonomic Society; New Zealand: Kea Conservation Trust New Zealand) and cross-border networks (Animal Welfare Research Network, Many Primates, new since 2020: Atlas of Comparative Cognition, Many Dogs).

"Science on the blue Danube": The Danube Allergy Research Cluster (DARC), newly launched in 2020, is an excellence network of the medical and veterinary universities of Vienna, the University of Natural Resources and Applied Life Sciences, AIT Tulln and Karl Landsteiner University Krems, funded by the Lower Austrian government and the FWF. In the consortium, 16 different groups are researching the diagnosis, treatment and prevention of allergic diseases, including Comparative Medicine with a research project on Alternaria moulds.

The Unit of Ethics and Human-Animal Studies maintains collaborations in the field of human-animal ethics, among others with the European Society for Food and Agricultural Ethics,

ECAWBM, the International Society of Livestock Husbandry, the Evolution of Normativity Network, the Animals and Society Institute, Cultural and Literal Animal Studies, Minding Animals Germany/International, the Network Veterinary Ethics and the VETART – arts forum.

Guest researchers at the Messerli Research Institute

The following guest researchers were active at the Unit of Ethics in Human-Animal Studies in 2020:

Elena Noe (Free University Berlin), Carlo Salzani (University of Vienna), Konstantin Deininger (Munich School of Philosophy), Paola Fossati (University of the Studies of Milan, Italy).

© privat

Konstantin Deininger, one of the visiting researchers of the Unit of Ethics of Human-Animal Studies in 2020.

Guest researcher Paola Fossati of the University of Milan.

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Society & Public Relations

The Institute contributes to the promotion of scientifically sound and ethically justifiable treatment of animals in our society. Therefore, the Messerli Research Institute is committed to bringing knowledge gained from research to the public debate, in line with the principles defined in its mission statement.

Media highlights

In 2020, the media widely reported once again on particular successes in comparative cognition research. The special abilities of the Goffin cockatoos to create tools and find innovative solutions were not only exploited by the media in the course of the START Prize. There were also many reports on the Kune Kune pigs, on dogs and wolves, on Kea parrots and on Christoph Völter's primate research in Africa and Germany.

The work of the Comparative Medicine unit was picked up in numerous media reports. The highlight were undoubtedly reports on the development of an anti-allergy lozenge, the "Kuhstallpille", based on the research work of Comparative Medicine in the ZDF format "Lesch's Kosmos" and on hr television, as well as an invitation by Erika Jensen-Jarolim to the Barbara Karlich Show on the subject of "Between Allergy and Hysteria".

Filming Entenfellners Tier Welt (Servus TV) in the Clever Dog Lab.

© Alexandra Eder / Vetmeduni Vienna

Lesch's Kosmos: Karin Bayer is the ideal allergy sufferer and talented actress.

© Erika Jensen-Jarolim

Erika Jensen-Jarolim with Barbara Karlich and the allergic guests of the evening.

© ORF

Christian Dürnberger from the Unit of Ethics and Human-Animal Studies spoke to Agriculture Minister Elisabeth Köstinger and Hannes Royer about animal welfare and animal use in the podcast of “Land schafft Leben”. Herwig Grimm was a speaker at a panel discussion on caging of laying hens and animal welfare organised by VIER PFOTEN and moderated by Maggie Entenfellner. Judith Benz-Schwarzburg spoke in Ö1 radio programmes about animals in zoos and about art projects that address the future of animal use.

© VIER PFOTEN

Panel discussion organized by VIER PFOTEN and moderated by Maggie Entenfellner. Right in the picture: Herwig Grimm.

Minister Elisabeth Köstinger and Christian Dürnberger as guests on the podcast of “Land schafft Leben” with Hannes Royer.

© BMLRT Paul Gruber

Events

2020

Due to the Corona-related travel restrictions and contact bans, there were no events or major Institute-wide events at the Messerli Research Institute in 2020. Thus, the visits of the Institute's Scientific Advisory Board (on 4 June) and the Foundation Council (on 13 May and 2 December) were also cancelled and replaced by online conferences.

Due to the Corona pandemic, there were mainly virtual events in 2020. This applied to internal events as well as international congresses. We regret that our young team members did not have the opportunity this year to present their work in live meetings and to get to know all the scientific and social facets of conferences and congresses.

While many courses of the IMHAI Master's programme have been held virtually since March due to the loo 19 pandemic, an exception was made for the Welcome Day of the new cohort: under the highest security precautions, a few students were received on site, while another part followed the opening via internet. In addition, few practical courses, e.g. "Into Science" and excursions in the Comparative Cognition unit were also held in presence.

All congresses relevant to comparative medicine have been converted to virtual or, less frequently, hybrid formats.

The Messerli Research Institute welcomes the new students of the IMHAI Master's programme in a hybrid way.

The 2020 online lecture series on Animals in Lockdown, organised by Kerstin Weich and Herwig Grimm, was dedicated to the question of what impact the Corona virus and official protection measures had and have on animals and human-animal relations. The lecturers were Birte Wrage as well as Alexander Rabitsch, Maximilian Benatar (Berlin Zoological Garden), Shruti Ragavan (Bangalore, India) and Roland Borgards (Frankfurt am Main, Germany).

Under the title *Doing animal health in a more-than-human world*, the first meeting of the *Network of Veterinary Humanities* took place in October 2020, organised by Kerstin Weich and Julia Gutjahr (University of Hamburg). The keynote speaker of the multidisciplinary meeting, which focused on the increasing interest of the humanities and social sciences in veterinary medicine, was Luděk Brož (Prague).

© Erika Jensen-Jarolim

© Herwig Grimm / Vetmeduni Vienna

First meeting of the *Network of Veterinary Humanities*; in the picture: Kerstin Weich (left) and Julia Gutjahr (right).

Screenshots of online lectures on the topic of "Animals in Lockdown".

New 3D Lab for Dogs

The technological innovation in the Clever Dog Lab 2020 was the installation and calibration of a new surveillance system consisting of eight industrial cameras from the Austrian company Loopbio (http://loopbio.com) in one of the two large test rooms. This camera system, installed by Max Hofbauer (CEO Loopbio) and our IT system administrator Peter Füreder (special, permanent mounting system: Wolfgang Berger), will in future enable the three-dimensional reconstruction of the position of various, freely selectable body parts of a dog moving freely in space. The 3D reconstruction is carried out after complex calibration by means of machine learning (Deep Learning) and provides automated and more detailed access to the contactless measurement of dog behaviour. In particular, this technology can be used to make statements about how the position and posture of a dog changes in the course of a test situation. In a pilot test conducted by Dario Starić (University of Zagreb, Croatia) in summer 2020 and supervised by Christoph Völter, the technology was used very successfully for the first time. Here, the dogs were able to move freely in a room that was equipped with several everyday objects. The dogs were alone in the room or together with their owners and/or an unknown person. With the help of the new camera system, the movement profile and posture of the dogs was reconstructed as they explored the room.

3D camera system with Loopy software in the Clever Dog Lab.

First test with the dog's caregiver.

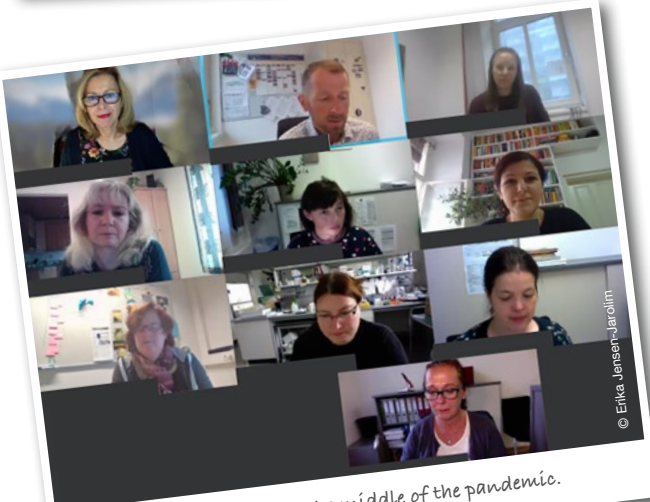
Social Events 2020

The year 2020 began energetically with a clean-up campaign.

The Comparative Medicine team, just before the pandemic.

The Comparative Medicine team in the pandemic during the summer excursion.

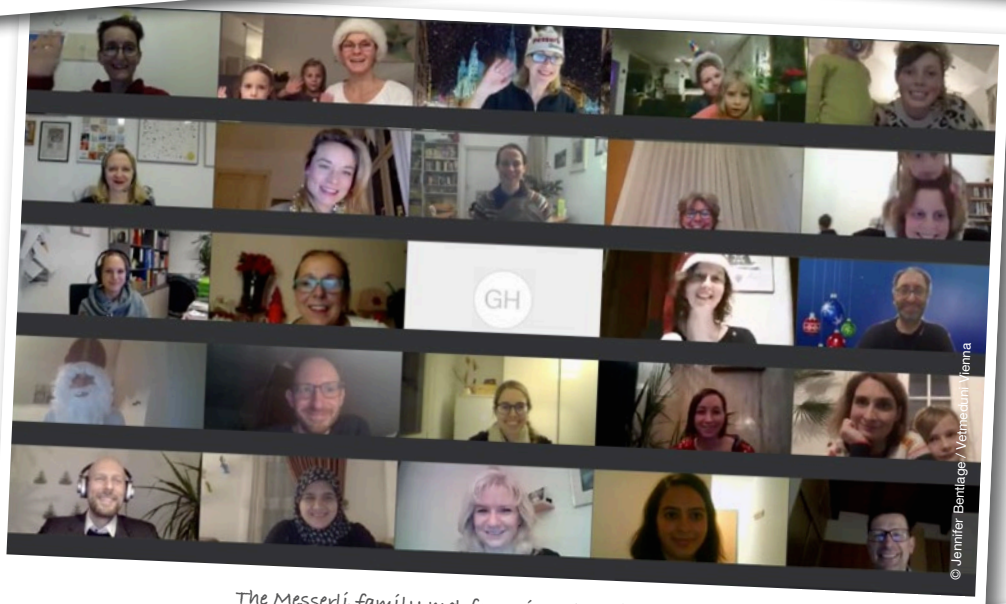
The Clever Dog Lab locks up again after the first lockdown!



Internal audit in the middle of the pandemic.

Virtual Messerli Meeting with the foundation on 2 December 2020.

The Christmas dog "Mia" sweetened our celebration with international Christmas greetings with her acting skills.



The Messerli family met for a virtual Christmas party.

Because of the contact bans, a Christmas party was organised in the Kea Lab just for the Keas, complete with Christmas tree cake specially designed for these parrots.

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