



messerli
Research Institute

Annual Report **2012**

messerli

Research Institute

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Sonja Hammerschmid

Rector of the University of Veterinary Medicine, Vienna

Combining the efforts for humans and animals

The Messerli Research Institute can look back on a busy time. The year 2012 was one of debuts: the official opening, the opening of the Clever Dog Lab and the start of the new Master's program "Interdisciplinary Master in Human-Animal-Interactions" in October. This annual report shows clearly how the team of almost 40 people analyzes human-animal interactions and transfers the knowledge gained from this research to students and society. The Messerli Research Institute is unique – in terms of its contents, as well as its university policy.

Cooperation and interdisciplinarity: Three universities have come together in order to identify and combine all the disciplines necessary to analyze the complex relationship between humans and animals and its principles. The research location Vienna acquired an inter-university competence center researching into answers for a better understanding of animals and their different roles in society, as a result of this cooperation. Thus, not only the complexity and the explosive force of this relationship can be assessed, but resources and infrastructure can be pooled.



Private co-financing: The Messerli Research Institute meets the political requirements set to increase private financing at Austria's universities. The institute could be established and will develop sustainably thanks to the support by the Swiss Messerli Foundation.

Research in an up-and-coming field: Third-party funding and research projects established in 2012 form another basis for the Messerli Research Institute. Particularly noteworthy is the ERC Starting Grant, one of the most lucrative research awards made by the EU, given to cognitive scientist Friederike Range. This international award for excellent research confirms the direction the institute is heading in. I would like to wish the entire team great success and motivation for the future.

Wolfgang Schütz

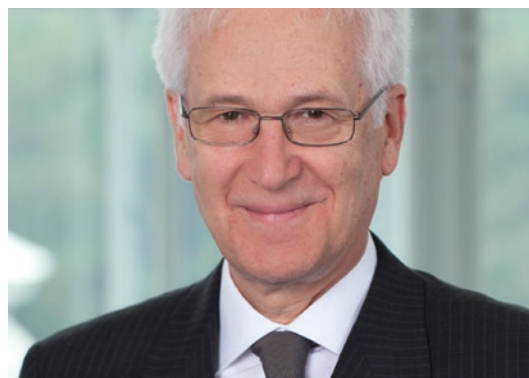
Rector of the Medical University of Vienna

Interdisciplinary research – positive effects for humans and animals

The Messerli Research Institute, launched by us, together with the Vetmeduni Vienna and the University Vienna in March 2012, is a perfect example of interdisciplinary thinking and action at Austria's universities, thanks to its broad and interdisciplinary approach, which includes biology, human medicine, veterinary medicine and philosophy.

The institute builds upon successful collaboration between three universities. This cooperation bridges the gap between human and veterinary medicine, as well as between the humanities and natural sciences. Such an interdisciplinary institute complements the research location Vienna well. The foundation of the institute underscores Vienna's top position in an international scientific context and confirms its excellent reputation.

Given its mandate for comparative research, the Messerli Research Institute can investigate common disease mechanisms in humans and animals faster, aiming towards the development of new therapies. The result is an interdisciplinary transfer of knowledge between human and veterinary medicine which has positive effects on the research at the three universities involved, as well as on humans and animals. This new Vienna-based institute is a center of excellence for all questions relating to human-animal interaction.



The foundation of the Messerli Research Institute is also a social mandate in line with the targets set by the Messerli Foundation. The assignment is to support people in their responsibility for animals and provide them with knowledge, resulting from the research done at the institute.

Heinz W. Engl

Rector of the University of Vienna

Focusing competences, pooling resources and infrastructure, interdisciplinary research, collaboration between universities and support for young scientists – these are the arguments put forward by the University of Vienna for cooperation with other Austrian universities and research institutions. This helps to bundle all the different competencies together, so that each partner benefits from them. The Messerli Research institute, founded in March 2012, is a successful example of this strategy. This institute is a symbol of interdisciplinary cooperation between the Swiss Messerli Foundation, the Medical University of Vienna, the University of Veterinary Medicine, Vienna, and the University of Vienna.

The Messerli Research Institute combines ethics and comparative medicine, as well as cognition and the behavior of animals, through its research into human-animal interaction and its principles. It stands out due to its interdisciplinarity (biology, human medicine, veterinary medicine, philosophy), as well as its international orientation. Its research results are expected to contribute to a continuous improvement in our dealings with animals on a scientific basis.

As the rector of the University of Vienna, I am pleased to see that the research location Vienna has gained an interesting and complementary institute that extends one of the fields of excellence of the University of Vienna – cognitive biology.



Karlheinz Töchterle

Federal Minister of Science and Reserach

Knowledge obliges

The status of animals in society – of wild animals as well as livestock and pets – has changed significantly in recent decades. This change raises new scientific questions on social awareness and has initiated urgent debates on the sustainability in human-animal interactions.

The interaction of science and society is obvious in this development: research findings shape society. They are important pillars for scientific progress and socio-cultural innovation. It is a matter of particular concern to me to emphasize the important social role of the three universities in political and public discussions. Human-animal interaction affects many people. Therefore, the Messerli Research Institute has a special responsibility, transferring knowledge to society and developing the fundamentals of science-based animal welfare. The combination of teaching and research at the institute ensures that human-animal interaction and animal welfare benefit from research findings in a sustainable way.

Furthermore, the Messerli Research Institute has been able to establish itself as a major player in the national research landscape in a short time and establish core aspects of the institute's plan: scientific excellence through an ERC Starting Grant and an impressive number of publications, cooperation through the research network between the three universities with a strong international impact, interdisciplinarity through combining natural sciences, humanities and medicine, transdisciplinarity through, for example, expertise



provided by the development of a set of criteria to objectivise the harm-benefit analysis in the framework of the Animal Experiments Act 2012, and a public-private partnership by raising private funds in an exemplary manner. The institute's strategy was already successful in its first year. Other raised funds and positive feedback on both national and European levels speak for themselves.

I wish the team of the Messerli Research Institute and its partners from the fields of science, business and society all the best for the future. I am convinced that the institute will also play a leading role in realizing sustainability in human-animal interaction in the future.

Heinz Schweizer

Vice President of the Messerli Foundation

In 2010, the Messerli Foundation made an agreement with the three Universities in Vienna to establish and head the Messerli Research Institute. The force behind it was the vision to analyze human-animal interaction scientifically in an interdisciplinary way and to use the findings for the well-being of animals.

In 2011 the preparatory operations were completed: Three professors were appointed, research aims and teaching were developed and the facilities were adapted.

The year 2012 was the first full year. A team of almost 40 people performed well which is illustrated by this report. The Messerli Foundation is proud of the results and wants to give thanks to all the people involved.

Only a harmonious and highly motivated team is able to perform so well in such a short period. It is worth mentioning that the Master's program on Human-Animal interaction has already started in autumn term 12/13.

Internal cooperation of different disciplines without any reservation and cooperation with partners from elsewhere is the basis for making the Messerli Research Institute a center of competence in the international research landscape for the well-being of animals.





Knowledge and responsibility

Univ.Prof. Dr. Ludwig Huber

Spokesperson of the Messerli Research Institute

The year 2012 was the first full year for the Messerli Research Institute. The institute was officially opened in March 2012, after staffing all permanent positions and moving to the new building in spring. Many honored guests gave us an early round of applause. Even more, we are very pleased that important targets have been brought on track.

All three units landed large research projects or extended existing ones. We are proud of three FWF Doctoral Schools, a sub-project in a FWF Special Research Area, four FWF Stand-Alone Projects, three WWTF projects, several industrial projects, two projects funded by Federal Ministries and one prestigious ERC Starting Grant – the only one at all three universities involved in the institute in 2012.



Therefore, the institute could already position itself in the global research landscape in its first year.

We were also able to develop an international profile in teaching. Our “Interdisciplinary Master in Human-Animal Interactions” started with a first group of motivated students in October 2012, following intensive preparation and careful recruitment. The teachers at the institute are also involved in the veterinary medicine program and in several curricula at the partner universities. They supervise more than 15 PhD students at three universities. Visiting professors and many guests from abroad – teachers and researchers – are also contributing to our increasing international visibility.



Guests and staff at the opening of the Messerli Research Institute

Thus, we have made our results available to society and scientific policy consultation. We have supported a science-based and ethically acceptable treatment of animals through our presence in the media and at public events, by consulting authorities (e.g. the Austrian Parliament) and by actively imparting knowledge. A good example is our participation in public events focused on the disputed amendment of the Animal Experiments Act, which led to an invitation by the Federal Ministry of Science to develop a set of criteria for the evaluation of animal experiment proposals. Furthermore, the Federal Ministry of Health placed the coordinating office for the quality seal “Dog trainer in accordance with animal welfare” at the Messerli Research Institute. These public assignments show the confidence in the institute in regards to science-based animal welfare and necessary improvements in human-animal interactions. A responsibility we want to meet in the upcoming years.



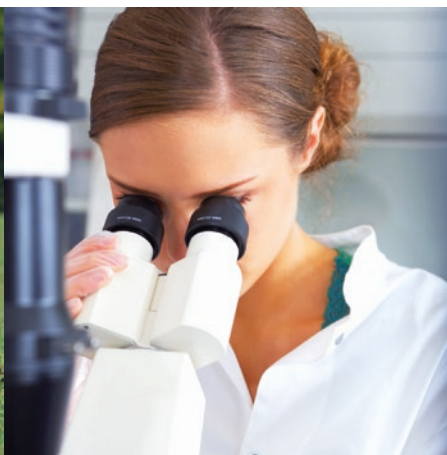
A kea in the aviary at Haidlhof eyes the Vetmeduni logo

2012

The Messerli Research Institute at a glance

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 of the first three units (Comparative Medicine, Comparative Cognition, Ethics and Human-Animal Studies) were appointed in autumn 2011. The institute was officially opened on March 29, 2012.

- **Research:** The research is devoted to the interaction between humans and animals, as well as its theoretical principles in animal cognition and behavior, comparative medicine and ethics.
- **Orientation:** The institute's work is characterized by its broad interdisciplinary approach (biology, human medicine, veterinary medicine, philosophy) and a strong international focus.
- **Teaching:** Research findings are an integral part of the academic curriculum in a new Master's program and are also designed to provide guidelines for the responsible and acceptable treatment of animals.
- **Practice:** Thus, the Messerli Research Institute considers providing scientific information to aid people responsible in the field of human-animal interactions one of its main responsibilities.



Targets

Principles and criteria for the ethically acceptable treatment of animals

One of the main focal points of the Messerli Research Institute's work is the development of convincing criteria and methods in animal ethics. A key aspect of the teamwork relates to the interdisciplinary transfer of knowledge on salient findings from current research in the fields of biology, veterinary medicine, human medicine and philosophy. The institute also places a high importance on ensuring that principle-oriented debates are constantly kept in mind while following this application-oriented goal.

Research into Human and Animal Health and the 3R-concept

The Messerli Research Institute considers the promotion of human and animal health using comparative medical research projects as one of its targets. Regular knowledge transfer will be encouraged through direct interdisciplinary exchange between Austrian and international universities, as well as institutes and clinics on the campus of the University of Veterinary Medicine, Vienna. The resulting synergies shall create an impact through rapid health-sector developments and the avoidance of dual structures. The consistent communication of the potential of comparative studies will improve awareness of the topic in the scientific world. This shall promote research on the theme of "One Health" and thereby influence the direction of related subject categories.

The chances of further improving and ensuring the fulfillment of the 3R-concept (Replacement, Reduction and Refinement) in medical research are realistic through the use of systematic comparative studies between humans and animals and the further promotion of clinical studies in the veterinary field as an important alternative and supplement to studies using laboratory animals. Knowledge compiled from the fields of cognition and animal behavior as well as ethics in human-animal interactions will contribute to reflect on present laboratory practice in a critical way and improve it in terms of the 3Rs. New discussion points in the debate on ethically justifiable animal experiments are expected.

Basic Research in Natural Sciences as a Platform

The Messerli Research Institute strives to achieve a balance between excellent basic and applied research. Key findings stemming from scientific work carried out at the Messerli Research Institute are the platform on which human-animal interactions can be examined in a practically oriented manner. For instance, knowledge on cognitive, emotional and moralanalogous skills in animals from the field of comparative cognitive research change not only the appreciation and the understanding of animals but also the way we humans see ourselves.



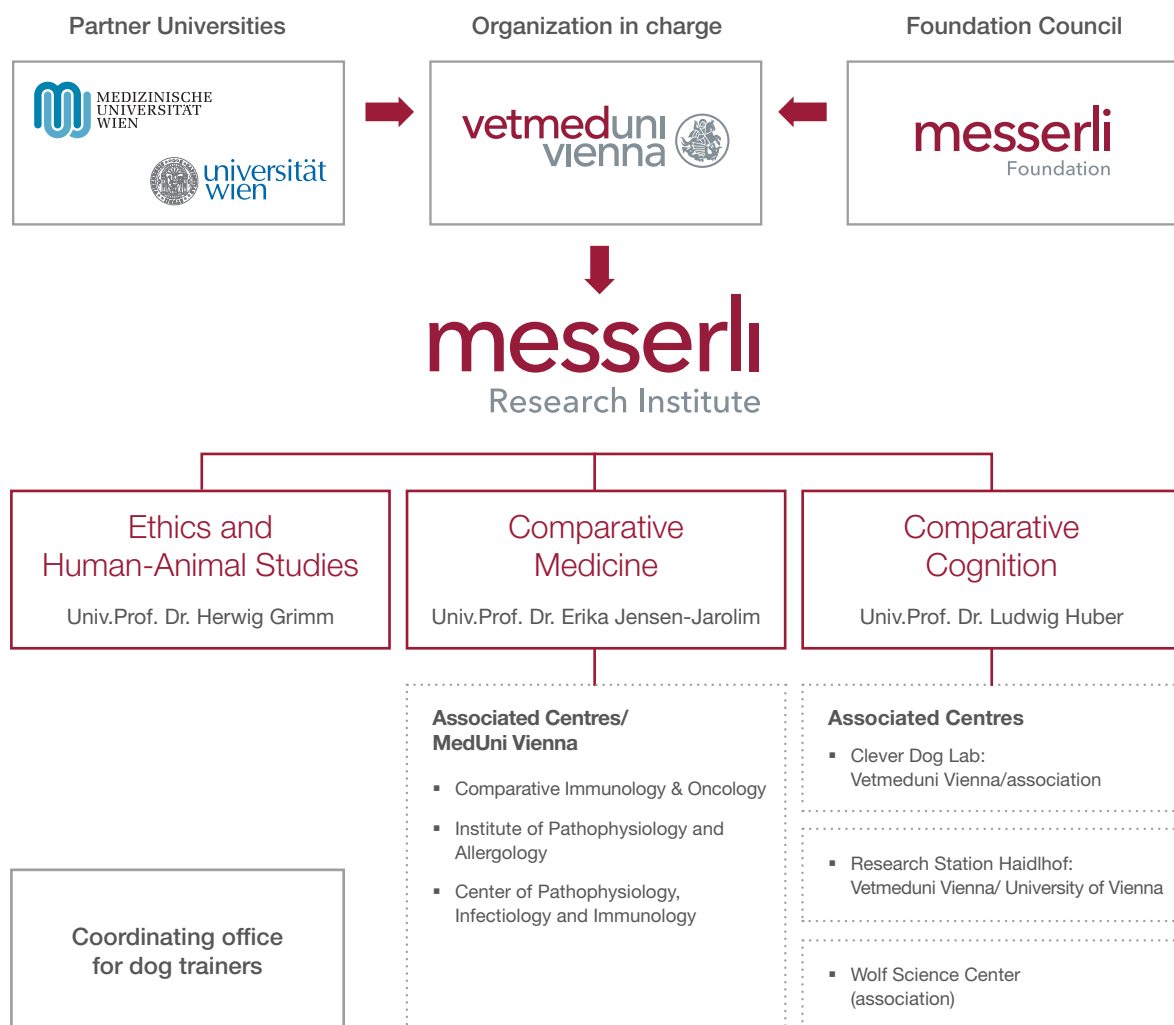
Organizational Chart

The Messerli Research Institute was established at the Vetmeduni. It is associated with the rectorate and represented by the spokesperson. It comprises three units and several associated centers that work in cooperation with the partner universities.

In this setting the units cover three important aspects of human-animal interactions in research and teaching:

- Comparative Cognition
- Comparative Medicine
- Ethics and Human-Animal-Studies

In autumn 2012 the coordinating office of the Federal Ministry of Health for dog trainers in accordance with animal welfare has been placed at the institute.



Team

Each of the three units of the Messerli Research Institute has one chair, scientific assistant positions, one administrative assistant position and – at the two natural science units – technical posts. Furthermore, there is an interdepartmental IT office. Also, one of the administrative assistants works interdepartmentally. Right before the opening of the institute end of March 2012, all positions could be filled with excellent staff. Additional staff, employed in third party-funded projects, will double the number of personnel by the end of the year. A similar number of scientist also work for associated centers.





Unit of Comparative Cognition



Univ.Prof. Dr. Ludwig Huber

Spokesman of the Institute & Head of Comparative Cognition

Ludwig Huber studied Biology and Philosophy at the University of Vienna, gained his PhD with Rupert Riedl in 1991, became a professor in 2000 and headed the Department of Cognitive Biology until his move to the Messerli Research Institute.



Univ.Ass. Dr. Friederike Range

Senior Scientist, Head of the Clever Dog Lab

Friederike Range is a senior scientist and Head of the Clever Dog Lab as well as the Wolf Science Center. She gained her Master's degree at the University of Bayreuth and her PhD at the University of Pennsylvania.



Univ.Ass. Dr. Zsófia Virányi

Senior Scientist, Co-Head of the Clever Dog Lab

Zsófia Virányi is a senior scientist and Co-head of the Clever Dog Lab and the Wolf Science Center. She gained her PhD in ethology at the Eötvös University Budapest.



Univ.Ass. Dr. Gyula K. Gajdon

Senior Scientist, Head of the Kea Lab

Gyula Gajdon is a senior scientist and Head of the Kea Lab. He studied zoology at the University of Zurich and gained his doctorate at the ETH Zurich.



Mag. Karin Bayer

Lab Manager Clever Dog Lab

As the lab manager of the Clever Dog Lab, Karin Bayer is responsible for all organizational aspects of the dog lab. She studied zoology at the University of Vienna.



Mag. Franziska Luckabauer

Assistant of the Head of the Unit and of the institute's spokesperson

Franziska Luckabauer is the assistant to the institute's spokesperson and to the Head of the Unit of Comparative Cognition. She supports the institute in all administrative matters. She studied linguistics at the University of Vienna.



Peter Füreder

IT System Administrator

Peter Füreder is responsible for the construction and operation of the IT infrastructure and takes care of the smooth operation of technical equipment for research.



Wolfgang Berger

Engineer

Wolfgang Berger's responsibility comprises the development and construction of the technical equipment for research, as well as ongoing maintenance.



Dr. Lisa Horn

Project staff

Lisa Horn studied Zoology at the University of Vienna. She is a postdoc in the Clever Dog Lab.



Dr. Corsin Andreas Müller

Project staff

Corsin Müller studied Zoology at the University of Zurich. He is a postdoc in the FWF project "The effects of early experience on physical cognition in dogs".



Anjuli Barber, MSc

Project staff

Anjuli Barber studied Biology and System Biology of Brain and Behaviour at the University of Bielefeld. She is a PhD assistant in the WWTF project “Like me: The evolutionary and neuro-cognitive basis of the link between imitation, empathy and prosocial behavior in dogs and humans”.



Alina Gaugg

Project staff

Alina Gaugg studied Zoology at the University of Vienna. She is a research assistant in the WWTF project “Semantics of Talking”.



Marianne Heberlein

Project staff

Marianne Heberlein studies Animal Behaviour at the University of Zurich. She works as a research assistant in the project “Cognitive Development and Aging in Dogs” in the Clever Dog Lab and in the Wolf Science Center.



Maria Teresa Antunes Marmota

Project staff

Maria Teresa Antunes Marmota studied Evolutionary and Developmental Biology at the University of Lisbon. She is a research assistant in the WWTF project “Semantics of talking”.



Soon Young Park, DVM

Project staff

Soon Young Park studied Neuroscience and Cognition at the University of Utrecht (Netherlands) and at the Konkuk University of Veterinary Medicine in Seoul, South Korea. She is working in the WWTF project “Semantics of Talking”.



Mag. Stefanie Riemer

Project staff

Stefanie Riemer studied Animal Behaviour and Environmental Biology at the Anglia Ruskin University Cambridge as well as Biology and Ecology at the University of Vienna. She is a PhD assistant in the FWF project “The effects of early experience on physical cognition in dogs”.



Teresa Schmidjell, MSc

Project staff

Teresa Schmidjell studied Biology at the University of Vienna. She works at a research assistant in the WWTF project “Semantics of talking” in the Clever Dog Lab and in the Wolf Science Center.



Rita Takacs

Project staff

Rita Takacs studied Game Management at the University of West Hungary. She is a research assistant in the FWF project “Cognitive tools and emotional content in canine cooperation”.



Lisa Wallis, MSc

Project staff

Lisa Wallis studied Animal Behaviour at the Manchester Metropolitan University. She is a PhD assistant in the project “Cognitive Development and Aging in Dogs”.



Unit of Comparative Medicine



Univ.Prof. Dr. Erika Jensen-Jarolim

Head of Comparative Medicine

Erika Jensen-Jarolim graduated in medicine and is a doctor of Pathophysiology and Immunology. Her long-term research focus includes Allergology, Oncology and AllergoOncology. Strategies in comparative medicine should lead to rapid diagnostic and therapeutic developments for human and animal patients.



Priv.Do. DDr. Isabella Pali

Senior Scientist, Food Immunology (currently on parental leave)

Isabella Pali graduated in Food Sciences and received both Humboldt and Firnberg scholarships from the Austrian Science Fund (FWF). Her research field is food allergies focusing on pregnancy and birth.



Dr. Krisztina Szalai

Senior Scientist, parental leave replacement

Krisztina Szalai studied biology at the University of Pécs (Hungary). Later she gained an MSc at the University of Vienna and a doctorate at the Medical University of Vienna. Her scientific performance comprises publications on allergies, focusing on atopic dermatitis and mimotope vaccines, and several awards.



Univ.Ass. Dr. Franziska Roth-Walter

Senior Scholar

Franziska Roth-Walter studied Chemistry before graduating as a Postdoc from Mount Sinai Hospital, New York. On her return she worked at the Institute of Pathophysiology and Allergy Research at Meduni Vienna. She has held the post of a Senior Scholar at the Unit of Comparative Medicine since autumn 2011.



Anna-Maria Willensdorfer

Lab Manager

Anna-Maria Willensdorfer is responsible for the setting up and management of the new laboratory for Comparative Medicine at Vetmeduni Vienna. The chemical-technical assistant (CTA) supports the team in their research into allergological and oncological issues.



Regina Meixner

Assistant of the Head of the Unit

As a departmental secretary with many years of experience, Regina Meixner is the assistant of the Head of the Unit. Among other tasks, she is responsible for national and international cooperation and works closely together with the second location of the Unit at the Vienna General Hospital.



Katica Josipovic

Administration 2 Comparative Medicine

Katica Josipovic is the personal assistant of the Unit Head and the secretary of the Unit at the Medical University Vienna. She supports the Unit and deals with human resource issues and projects funded by third parties.





Unit of Ethics and Human-Animal Studies



Univ.Prof. Dr. Herwig Grimm

Head of Ethics and Human-Animal Studies

Prof. Herwig Grimm is the head of the Unit of Ethics and Human-Animal Studies. His research focuses, besides ethics and human-animal studies in general, on methods in applied ethics and pragmatism. Grimm gained his doctorate at the Munich School of Philosophy in 2010.



Univ.Ass. Dr. Judith Benz-Schwarzburg

Senior Scholar

Judith Benz-Schwarzburg is a Senior Scholar in the Unit Ethics and Human-Animal Studies. Her research focuses on animal ethics/animal philosophy and cognition of animals. She studied Linguistics, German Literature, Philosophy and Ethics and gained her doctorate at the University of Tübingen in 2012.



Univ.Ass. Mag. Dr. Martin Huth

Senior Scholar

Martin Huth is a Senior Scholar in the Unit of Ethics and Human-Animal Studies. His main fields of research are phenomenology and post-structuralism. Huth studied Philosophy and History and gained his doctoral degree at the University of Vienna in 2007.



Samuel Camenzind, MA

Scholar

Samuel Camenzind is a scholar and doctoral candidate in the Unit Ethics and Human-Animal Studies. He focuses on animal ethics and is working on his dissertation on „Instrumentalization as an ethically relevant criterion. A bioethical analysis and evaluation of SCNT cloning on nonhuman mammals“.



Mag. Julia Schöllauf, BA

Assistant of the Head of the Unit

Julia Schöllauf is the assistant of the Head of the Unit and deals with all organizational issues of the Unit. She is also responsible for the institute's website and the media archive. She gained her Master's degree in Music at the University of Music and Performing Arts Vienna and completed a Bachelor's program in Transcultural Communication at the University of Vienna.



Univ.Ass. Dr. Norbert Alzmann

Project staff

Norbert Alzmann studied Biology in Ulm. He gained his doctorate in 2010 in Ethics in Life Sciences at the University of Tübingen. He worked on questions of animal ethics as a scientist and teacher. From 2012 he has been a staff member at the Messerli Research Institute in the project “Scientific responsibility in animal experiments”.



MMag. Kerstin Weich

Project staff

Kerstin Weich studied Modern German Literature, Philosophy and Media Studies at the Dresden University of Technology and at Freie Universität Berlin. She also studied Veterinary Medicine at Freie Universität Berlin. She worked as a vet and was engaged in research and teaching. She has been working in the project “Vethics for Vets – ethics for veterinary officers” from November 2012.

Coordination office for dog trainers in accordance with animal welfare



Mag. Karl Weissenbacher

Coordinator

Karl Weissenbacher studied Veterinary Medicine and has been concerned with non-violent dog training for more than ten years. Besides heading the coordinating office he is also responsible for the course “Applied Cynology”.

Opening of the Messerli Research Institute

The Messerli Research Institute was officially opened on March 29, 2012. Numerous important political and scientific figures attended the opening ceremony.

In his opening address after the press conference, the Federal Minister of Science, Karlheinz Töchterle, underscored the social relevance of the work at the Messerli Research Institute. Sonja Hammerschmid, Rector of Vetmeduni Vienna, mentioned the great significance of the human-animal relationship for society. She added, placing the institute at the Vetmeduni Vienna campus ensures direct cooperation to veterinary medicine. Rector Heinz W. Engl welcomed the expansion of one of the research focuses of the University of Vienna – cognitive science. Wolfgang Schütz, Rector of the Meduni Vienna, emphasized the benefits for both human and veterinary medicine.

The Vice President of the Messerli Foundation, Heinz Schweizer, gave a short overview of the development of the institute and of the selection of the location. “We chose the Vetmeduni Vienna because it was obviously the best in understanding the foundation’s vision and was willing to make its own contributions,” explained Schweizer. Lastly, the Spokesman of the institute, Ludwig Huber, presented the institute’s main fields of research and stressed the institute’s role in developing the foundations and criteria for an ethically acceptable treatment of animals.

Having cut the red ribbon, the three professors of the Messerli Research Institute gave their inaugural lectures, followed by a panel discussion with well-known participants on the future of human-animal interactions in science and society. The participants were Dagmar Schratter, Head of the Schönbrunn Zoo, Brigid Weinziger, anthrozoologist, Ludwig Huber, Herwig Grimm, Michael Aufhauser, founder of Gut Aiderbichl, and Erika Jensen-Jarolim. The last item on the official program was the address by well-known writer Barbara Frischmuth. There was enough time left to further discuss open questions about human-animal interaction at the buffet which followed.



f.l.t.r.: Ludwig Huber, Heinz W. Engl, Heinz Schweizer, Karlheinz Töchterle, Sonja Hammerschmid, Wolfgang Schütz

Opening of the Clever Dog Lab

The Clever Dog Lab was officially opened on September 3, 2012. The guest list included Karlheinz Töchterle, Federal Minister of Science, and Alexander Van der Bellen, Vienna University Coordinator among others. The lab uses the best techniques currently available for cognitive research in its new testing rooms, e.g. touch-sensitive screens, video analysis and eye-tracking. Thus, researchers can compare different perception processes (vision, hearing), as well as communicative and cooperative abilities in dogs with abilities in other dogs and humans. Another focus is on social learning and the way dogs solve technical, logical and social problems. Furthermore, the relationship between dogs and humans, as well as the impact of personality, sex, age and keeping, on these abilities and character are the subjects of research projects.

Karlheinz Töchterle, Federal Minister of Science, highlighted the deep commitment of the scientists and the ideal framework conditions at the Clever Dog Lab in his opening address: “It is not only of benefit to the animals, but also to society to gain knowledge about the cognitive abilities of animals. We can use the findings of the Clever Dog Lab to meet our responsibilities to animals in an even better way in the future.”

The Clever Dog Lab is a shared facility of the Unit of Comparative Cognition at the Messerli Research Institute and the Association “Clever Dog Lab Vienna”. The work is supported by the Austrian Science Fund (FWF), the Vienna Science and Technology Fund (WWTF) and animal feed producer Royal Canin. The Clever Dog Lab is also working closely together with the Wolf Science Center in Ernstbrunn.



Federal Minister of Science Karlheinz Töchterle at his opening address



Presentation for the guests at the Clever Dog Lab

Targets

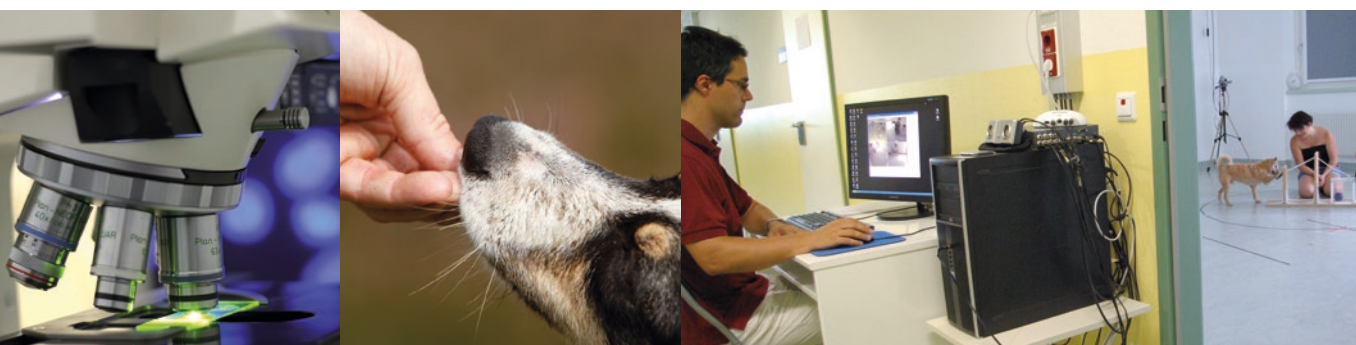
Public and political discussions about animal protection issues, legal framework conditions and animal ethics are characterized by greatly opposing interests and seemingly contradicting opinions. This is not surprising, as studying human-animal interactions touches on questions about personal values and existential issues on human nature. The Messerli Research Institute is making a significant contribution to this field by creating a scientific and transparent basis for answering ethically and socially relevant questions.

Research in Context

The Messerli Research Institute sees itself as an institute working at the University of Veterinary Medicine, Vienna, which actively integrates the university's existing knowledge and expertise into its own work. The institute then offers its research findings to the University of Veterinary Medicine for the university's own teaching and research. Both veterinary research and teaching benefit from innovative scientific approaches and ethical expertise in human-animal interactions thanks to this fruitful cooperation.

Teams from the three units and their associated laboratories performed research into the following general issues in 2012:

- Comparative Cognition
- Comparative Medicine
- Ethics and Human-Animal Studies



Comparative Cognition

Research in the Unit of Comparative Cognition is dedicated to current questions on cognition and emotions in animals from a comparative and integrative point of view. Cognitive abilities are not unique to humans, but can be found in many other animals. In order to understand the variety of processes, the different functions in the lives of animals and problem solving in animals, the research is not confined to either one or a small number of “model systems,” but examines a variety of selected animal species, such as dogs and wolves, mountain parrots, pigeons, woodpeckers and even tortoises. The fact that cognition has to be understood as a complex biological phenomenon leads to a combination of various biological and psychological methods and approaches, as well as the integration of research at various levels of complexity (genetic, neuronal, individual, social, cultural level). The research is conducted in both natural and semi-natural habitats, where the animals’ abilities to solve experimental tasks are tested. These tasks are oriented towards natural, species-related problems, not towards IQ tests for humans. A particular focus is on an exclusively non-invasive approach.

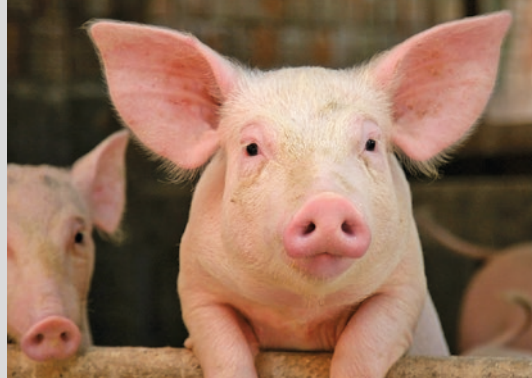
Cognitive and emotional abilities of dogs and wolves

The goal of this basic research field is to understand the cognitive and emotional abilities of the domestic dog in regard to the four questions (or causes) by Tinbergen. The first question – the phylogenetic cause – is explored mainly in comparison to the dog’s progenitor, the wolf. Domestication plays an essential role in this research. A second important question is the ontogenetic development of cognition and emotion, focusing on the early development and aging of dogs. Thirdly, experiments will be conducted to find out more about specific mechanisms and functions, as well as – fourthly – their adaptive values. This will include the dog’s ability to imitate and to feel empathy as well as to cooperate and (gesturally and vocally) communicate.

The findings of the applied research are expected to have far-reaching effects on the human-animal interaction and on veterinary medicine. This will particularly affect the interactions between dog owners and their dogs, but also the position of dogs in society.

To what extent do dogs understand human non-verbal communication?





Perceptual, technical and social intelligence of birds

The second basic research interest of the Unit of Comparative Cognition focuses on kea parrots. The kea (*Nestor notabilis*) is a mountain parrot native to New Zealand. In 2012, the scientists of the Kea Lab at the Research Station Haidlhof finished, continued or began studies on the technical intelligence, on curiosity and exploration, on perception and on analogical thinking and abstract reasoning, in cooperation with the Universities of Vienna, Mainz and Auckland.

Cognition and emotion of farm animals

In addition to research into wild animals (keas, woodpeckers, wolves) and domestic animals (dogs), the institute also focuses on livestock (pigs, chickens) as a part of its research agenda. In 2012, members of the Unit of Comparative Cognition began cooperation projects with the Institute of Animal Husbandry and Animal Welfare (a study on calves with Univ.Prof. Dr. Susanne Waiblinger), as well as with the Clinic of Pigs (pilot studies on pigs with Univ.Prof. Dr. Isabel Hennig-Pauker).

Animal Protection and Human-Animal Interaction

A better understanding of cognitive and emotional abilities in animals, particularly in a social context, has direct consequences for a number of bioethical and applied questions. The research findings in animal behavior and cognition should help put the (widely exaggerated) self-image of humans and their role in the universe into perspective, recognizing their own cognitive and social abilities, strengthening their responsibility and sensibility towards other social, emotional and intelligent animals, as well as improving their diverse relations (and interactions) with animals.



A bowling alley for keas to get the nut

Research Projects

Projects finished in 2012

Cognitive tools and emotional context in the development of canine cooperation

Human collaborative skills are exceptional, but comparisons with animal species may reveal the evolutionary origins and the functional relevance of cooperation, as well as their development. The main objective of this project is to understand the mechanistic principles and evolutionary functions of cooperation and ontogenetic development. Cooperation is at the core of the canine social organization. Thus, wolves and dogs are the ideal model system to analyze cooperation with conspecific and human partners. The project investigated the emotional reactions and the cognitive development of wolves and dogs raised and kept in an identical way. Their willingness to cooperate is tested in adulthood and related to the emotional responses and cognitive skills of the two species.

Project leader: Univ.Ass. Dr. Friederike Range

Project collaborators: Univ.Ass. Dr. Zsófia Virányi, Rita Takács (animal trainer), Marianne Heberlein (research assistant)

Term: January 2009 - December 2012

Funded by: FWF – Austrian Science Fund, Project 21244-B17

Technical intelligence and exploratory behavior in keas

The exploratory impulse and technical abilities of humans are closely related. Keas, mountain parrots native to New Zealand, also display this link. A diploma thesis on the keas' use of tools illustrated the importance of considering exploratory behavior in the solution of technical problems. Another diploma thesis demonstrated that keas learn to distinguish between tools of different suitability as fast as they can distinguish objects that are linked to types of gratification – it only takes them a few attempts. The reverse learning effect of this discrimination tends to be faster when the keas observe other group members doing this reverse learning. Furthermore, a Master's thesis showed surprisingly similar social object exploration in keas and ravens, despite the different ecology of these two large-brained bird species.

Moreover, the Kea Lab is taking part in a cooperation project with other scientific teams that is examining curiosity and exploratory behavior through a touch-screen task. This task was developed with the help of keas and is now being applied to several parrot species and corvids.

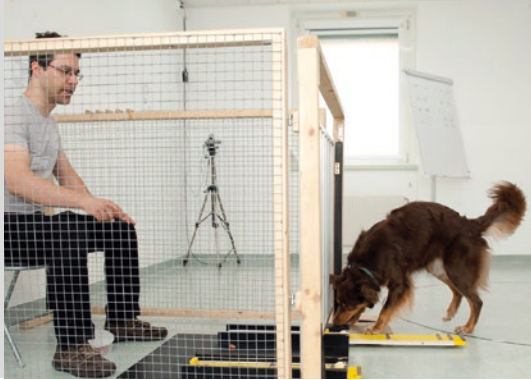
Project leader: Univ.Ass. Dr. Gyula Gajdon, Univ.Prof. Dr. Ludwig Huber

Term: permanent funding

Funded by: cash prizes and support by private sponsors



Playground and exploration:
kea aviary at Haidlhof



Testing the physical understanding of dogs

Ongoing projects in 2012

The effect of early experience on physical cognition in dogs

Many experiments have shown that dogs excel in tasks involving interactions with humans, but they have provided little understanding of causal links. These differences have often been explained by one of the effects of domestication, namely specific selection for the ability to cooperate with humans and interpret their communicative signals during domestication. However, an individual's cognitive skills are not only influenced by its evolutionary history, but also by the experience it gathers throughout life. This ongoing project explores the influence of early experience on the ability of dogs to master physical tasks.

Project leader: Univ.Prof. Dr. Ludwig Huber, Univ.Ass. Dr. Friederike Range

Project collaborators: Dr. Corsin Müller (Post-doc), Mag. Stefanie Riemer (PhD student)

Term: January 2010 - December 2013

Funded by: FWF – Austrian Science Fund, project 21418

Cognitive development and aging in pet dogs

A battery of intelligence tasks (“Vienna Dog Intelligence Test Battery”) was designed to investigate the life-long development of cognition in domestic dogs. It tests the performance of dogs of various ages (from 6 months to 10 years) in a variety of complex technical and social tasks. The results of the project shall contribute to a better understanding of cognitive aging in dogs and, thus, help to develop technologies and treatments to decelerate this process.

Project leaders: Univ.Ass. Dr. Zsófia Virányi, Univ.Ass. Dr. Friederike Range

Employed collaborators: Lisa Wallis, MSc (PhD student), Angela Gaigg (research assistant)

Term: 2010 - July 2013

Funded by: Royal Canin



A border collie doing a test at the touch screen for logical understanding

Analogical Reasoning in Birds

Analogical reasoning is the process of recognizing the relationship between objects, as well as the ability to recognize a general principle and apply it to new situations. A complex test procedure on analogical reasoning with a touch screen has been developed for this project. Furthermore, a diploma project on analogical reasoning has been started. An internship project showed that keas tend to use knowledge gained in relation to objects to solve analogical tasks at the touch screen rather than vice versa. Moreover, the kea-related part of a long-term study that compared learning of an artificial grammar in keas and pigeons was completed and published.

Project leader: Univ.Prof. Dr. Ludwig Huber, Univ.Ass. Dr. Gyula Gajdon

Project partners: Univ.Prof. Dr. Thomas Bugnyar, Univ.Prof. Dr. Tecumseh Fitch, both from the University of Vienna

Project collaborator: Mag. Mark O'Hara (PhD student)

Term: May 2011 - April 2014

Funded by: FWF – Austrian Science Fund, DK program „Cognition and Communication“

Color or contrast: solving attention tasks

A perception study on domestic pigeons with novel testing equipment was conducted for the first time in 2012. This testing equipment was developed by members of the Unit of Comparative Cognition and put into use together with Prof. Ulrich Ansorge and Nils Heise, MSc, from the University of Vienna. In this first proof-of-concept study, it was shown that pigeons learn a perception task (attention to color or contrast) without any influence by humans and that they master the tests following the initial task. The fully automatic and computer-controlled testing equipment has been placed in the aviary and the pigeons can train any time without human influence (food as gratification). The testing equipment will also be used for chickens and other birds in the future. This will enable us to conduct learning experiments that are in line with the animals' natural behavior and which are well-controlled and efficient.

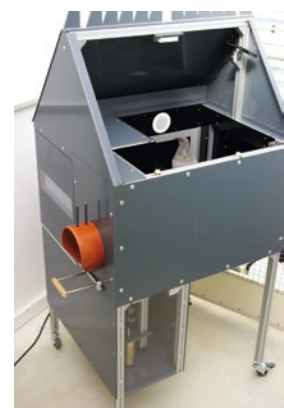
Project leader: Univ.Prof. Dr. Ludwig Huber

Project partners: Univ.Prof. Ulrich Ansorge, Nils Heise, MSc, both from the Institute for Psychological Basic Research and Research Methods at the University of Vienna

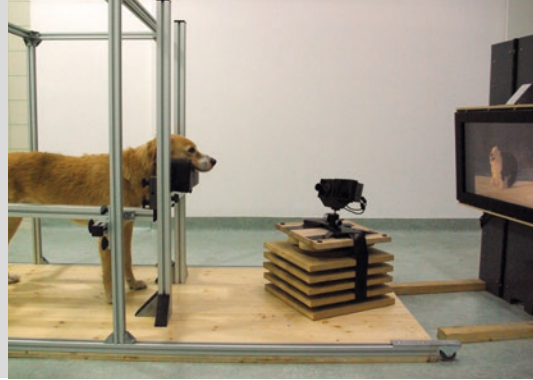
Project collaborators: Wolfgang Berger, Peter Füreder

Term: permanent funding

Funded by: industry



A pigeon in the "Palmer's Box"



Cinema for dogs:
The eye tracker analyzes Michel's eye movements

Communication of keas

Raoul Schwing, a doctoral student at the University of Auckland (New Zealand) who investigated the outdoor communication of keas (in New Zealand), created an audiogram of the keas at Haidlhof during his four month research stay in Austria. It was shown that keas hear best in the frequency range in which they themselves call the loudest. A diploma thesis examined the extend to which optical illusions mislead keas at the touch screen to deepen our knowledge of this test medium, which could also be used for studies comparing species.

Project leader: Univ.Ass. Dr. Gyula Gajdon

Project collaborator: Raoul Schwing, MSc (University of Auckland, New Zealand)

Term: permanent funding

Funded by: industry

Like me: Imitation, empathy and prosocial behaviour in dogs and humans

The project looks into a rather significant long-term problem in cognitive sciences: the relationship between cognition and emotion. The project brings together some of Europe's leading experts in this field and conducts behavioral tests with dogs, as well as neuro-cognitive tests with humans. Breakthroughs in the understanding of the mechanisms responsible for building and maintaining of cooperation and mental well-being are expected. This is of significant social and ethical relevance.

Project leader: Univ.Prof. Dr. Ludwig Huber

Project partners: Univ.Prof. Dr. Claus Lamm (University of Vienna), ao.Univ.Prof. Christian Windischberger (Meduni Vienna)

Project collaborator: Anjuli Barber, MSc (PhD student)

Term: April 2012 - March 2015

Funded by: WWTF - Vienna Science and Technology Fund, Cognitive Sciences Call



Look out! Dog Monthly with eyetracker and thermal imaging camera

Semantics of talking with the eyes and gestures

In this project, sophisticated technologies – such as measuring eye movement and determining the genotype of the oxytocin receptor in pet dogs and wolves – are used in order to explore the cognitive and motivational mechanisms for finding food with the help of the eye movements and hand gestures of others. This project is designed to contribute to reconstructing the evolution of human communication and understanding how dogs communicate with humans.

Project leader: Univ.Ass. Dr. Zsófia Virányi

Employed collaborator: Soon Young Park, MSc (PhD student)

Term: April 2012 - March 2015

Funded by: WWTF - Vienna Science and Technology Fund, Cognitive Sciences Call

Acquisitional Neophilia, Retentional Blinders?

The mental abilities of corvids and parrots not only match those of the great apes in terms of relative brain size, but also in terms of performance on various cognitive tasks. So far, true comparative studies including both species and using an identical experimental setup have been scarce. The project attempts to use an integrative and comparative approach to investigate the role of neophobia on the acquisition of a discrimination task in several species of large-brained birds. The study compares the performance of keas and ravens (both species are housed at the Haidlhof Research Station near Vienna), African Grey Parrots and various macaw species (from the parrot sanctuary in Lincoln), New Caledonian Crows and Jackdaws (currently hosted at the avian cognition lab of the University of Oxford, based near Starnberg at the Max-Planck- Insitute for Ornithology in Seewiesen, Germany), as well as Goffin Cockatoos (housed by Alice Auersperg near St. Pölten).

Project leader: Mag. Mark O'Hara

Project partners: Univ.Prof. Dr. Ludwig Huber, Univ.Ass. Dr. Gyula Gajdon, Anna Wilkinson, PhD (UK), Dr. Auguste von Bayern (D), Dr. Alice Auersperg (A)

Term: June 2012 - March 2013

Funded by: European Science Foundation, Network program „Comparative Cognition“, Collaborative Research Project



Flying keas: 50 meters free flight at Haidlhof



Approved research projects in 2012

Understanding the proximate mechanisms of canine cooperation

Elucidating similarities and differences in the cognitive and emotional processes underlying cooperative interactions in non-primate and primate taxa may have profound implications for our understanding of cooperation in humans and non-human animals. The project will include a series of experiments with wolves and dogs that have been raised and kept identically. The work will focus on cognitive processes closely linked to the emotional system, such as empathy, inequity aversion and delayed gratification. These processes are thought to be involved in triggering, maintaining and regulating primate cooperation. Furthermore, using social network theory, we will integrate knowledge of animals' emotional tendencies, as well as of their cognitive abilities to model canine cooperation and test the model's predictions with our own data.

Project leader: Univ.Ass. Dr. Friederike Range

Duration: March 2013 - February 2018

Funded by: ERC – European Research Council, ERC Start Program

Proximate mechanisms of canine cooperation: Prosocial attitudes and inequity aversion

The aim of this project is twofold: 1) to investigate whether and to which extent dogs show pro-social attitudes such as care, mediation or consolation and 2) to elucidate the cognitive and motivational building blocks of inequity aversion in canines. Pro-social behavior is defined as actively offering food to a companion and is considered to be part of altruism. Although pro-social tendencies have traditionally been investigated between conspecifics, the current project will explore whether dogs show pro-social tendencies towards their human partners because of the peculiar interspecific bond between dogs and humans. Inequity aversion is defined as partners resisting inequitable outcomes. Although we know that dogs stop cooperating when treated unequally, it is unclear whether, as in humans, this behavior is driven by the same evaluation of costs and gains in comparison to the partner or if it is based on simpler mechanisms.

Project leader: Univ.Ass. Dr. Friederike Range

Duration: March 2013 - February 2016

Funded by: FWF – Austrian Science Fund

Presentations and other scientific events

Univ.Prof. Dr. Ludwig Huber:

Philosophical Anthropology, *Zur Evolution geistiger Fähigkeiten und der Bestimmung "Was ist der Mensch"*: Series of lectures at the Faculty of Catholic Theology, University of Vienna, January 26, 2012

Evolução da Cognição nos Animais (The evolution of animal cognition). Congresso Brasileiro de Zoologia (March 5-9, 2012). Salvador da Bahia, Brasília, March 6, 2012

Tool discrimination in a mountain parrot, the kea (Nestor notabilis). (with Kerstin Pölzl and Univ.Ass. Dr. Gyula Gajdon). 8th Meeting of Ecology and Behaviour-SERL (April 2-6, 2012), Chizé, France, April 3, 2012

Aquisitional Neophilia, Retentional Blinders? (with Mark O'Hara). ESF CompCog Workshop (May 15-18, 2012). Vienna, May 16, 2012. This international workshop was organized by Dr. Zsófia Virányi and Univ.Prof. Dr. Ludwig Huber at the Messerli Research Institute.

Spontaneous tool invention in the kea: What animals understand about the physical world. ASAB (Association for the Study of Animal Behaviour) 2012 Conference. Birmingham, Great Britain, June 27, 2012

Suggestive and conclusive evidence of socio-cognitive abilities in animals. Minding Animals 2 (July 3-6, 2012). Utrecht, Netherlands, July 4, 2012

Recognition of familiar human faces in domestic dogs (with Anais Racca), *Age effects on interspecific communicative abilities of domestic dogs* (with Lisa Wallis), *String pulling in dogs revisited: spontaneous performance and learning in novel setups* (with Stefanie Riemer). 3rd Canine Science Forum. Barcelona, Spain, July 24-27, 2012

The Impact of Cognitive Biology on the Question of Animal Welfare. ISAE (International Society for Applied Ethology) Conference (July 31-August 4, 2012). Vetmeduni Vienna. Vienna, August 3, 2012

Social cognition in dogs: evolution, development and intentional control. So. F. I. Vet. 2012 (Società Italiana di Fisiologia Veterinaria), University of Padua, Palazzo Grassi. Chioggia, Italy, September 27-28, 2012

The evolution of social cognition. Evolvienna lecture series, Vetmeduni Vienna. Vienna, October 16, 2012



Ludwig Huber opening a conference at Salvador de Bahia, Brasília



Talk by Teresa Schmidjell and Zsófia Virányi at the Canine Science Forum Barcelona

Univ.Ass. Dr. Gyula Gajdon

Kognitive Fähigkeiten von Vögeln am Beispiel der technischen Intelligenz beim Kea Bergpapagei. 41th Seminar on laboratory animals and animal experiments (May 8-9, 2012). Bundesinstitut für Risikobewertung (BfR), Charité – Universitätsmedizin Berlin, Gesellschaft für Versuchstierkunde (GV-SOLAS). Berlin, Germany, May 8, 2012

Exploration during discrimination learning in a mountain parrot: an option for simulation? ESF CompCog Workshop Lincoln on using robotics and computer stimuli in behavioural and cognition research (May 24-25, 2012). University of Lincoln, Great Britain, May 24, 2012

Univ.Ass. Dr. Friederike Range

Wolf und Hund – Neue Ergebnisse. Museum of Natural History, Vienna. Vienna, March 12, 2012

Neuestes aus der Kognitionsforschung beim Hund: Hunde besser verstehen. 58. Jahreskongress der Deutschen Gesellschaft für Kleintiermedizin (October 18-20, 2012). Dusseldorf, Germany, October 18, 2012

Neuestes aus der Kognitionsforschung beim Hund: Auswirkungen auf Training und Sozialkontakt. 58. Jahreskongress der Deutschen Gesellschaft für Kleintiermedizin (October 18-20, 2012). Dusseldorf, Germany, October 18, 2012

Unterschiede zwischen Hund und Wolf: Was ist dem Hund im Zuge der Domestikation verloren gegangen und was kam neu dazu? 58. Jahreskongress der Deutschen Gesellschaft für Kleintiermedizin (October 18-20, 2012). Dusseldorf, Germany, October 18, 2012

Sozialverhalten – Unterschiede zwischen Hund und Wolf: Was hat der Hund, was der Wolf nicht hat und welche Bedeutung hat es für die Beziehung Hund-Mensch? 58. Jahreskongress der Deutschen Gesellschaft für Kleintiermedizin (October 18-20, 2012). Dusseldorf, Germany, October 18, 2012

Mag. Stefanie Riemer

String pulling in dogs revisited: spontaneous performance and learning in novel setups. 3rd Canine Science Forum (July 25-27, 2012). Barcelona, Spain, July 26, 2013

Lisa Wallis, MSc

Age effects on interspecific communicative abilities of domestic dogs. 3rd Canine Science Forum (July 25-27, 2012). Barcelona, Spain, July 26, 2013

Guest lectures and symposia hosted by the Unit of Comparative Cognition

ESF Network Program „Comparative ESF Network Program “Comparative Cognition”: Workshop CompCogCRP Inter-laboratory consistency within species and inter-species comparisons, Messerli Research Institute, May 15-18, 2012

Speakers:

- Dóra Szabó (Eötvös Lorand University Budapest, Hungary): *Testing the reproducibility of behavioural tests in dogs in three European countries*
- Nelly Lakestani (University of Lincoln, Great Britain): *Social complexity and cognitive skills in mammals and birds*
- Mark O’Hara (University of Vienna): *Aquisitional Neophilia, Retentional Blinders?*
- Anastasia Krasheninnikova (University of Lincoln, Great Britain): *Comparative research on physical cognition in parrots*

Comparative Cognition Workshop „Measuring Heart-Rate-Variability in Animals – Methods, Prospectives and Shady Sides“, Messerli Forschungsinstitut, 30.11.2012

Speakers:

- Iris Schöberl (Universität Wien), *Factors affecting stress coping in human-dog dyads*
- Kim Kortekaas, (Universität Wien), *Using physiological parameters to measure sociality in wolves and dogs*
- Anjuli Barber, MSc (Vetmeduni Vienna), *Physiological and behavioral correlates of emotions and empathy in dogs*



European Science Foundation Workshop at the Messerli Research Institute



Clever Dog Lab Seminar, Messerli Research Institute

Speakers:

- Ina Maria Pohl (University of Magdeburg, Germany): *Numerical competence in dogs*, February 1, 2012
- Marianne Heberlein (University of Zurich, Switzerland/Wolf Science Center): *Do dogs mislead a human competitor*, May 8, 2012
- Kim Kortekaas (University of Vienna/Wolf Science Center): *Heart rate measuring in dogs*, May 23, 2012
- Elena Zanchi (Università degli studi di Milano, Italy): *Do dogs understand when communication is intended for them in a social referencing task?*, August 1, 2012
- Giulia Cimarelli (Università degli studi di Firenze, Italy): *Which mechanisms are involved in dogs' comprehension of human pointing gestures?*, September 26, 2012
- Dóra Szabó (Eötvös Loránd University Budapest, Hungary): *Inter-laboratory consistency in dog experiments: Testing the reproducibility of behavioural tests in dogs in three European countries*, October 3, 2012
- Orsolya Kanizsár (Eötvös Loránd University Budapest, Hungary): *The priming effect of pre-sensitization with social stimuli in dogs and human infants*, November 28, 2012
- Dr. Elisabetta Versace (Institute of Population Genetics, Vetmeduni Vienna): *The evolution of learning; A behavioural and genomic investigation in fruit flies*, December 5, 2012
- Maya Bräm Dubé, Dr.med.vet., MRCVS (University of Zurich, Switzerland): *Veterinarian medicine, where practice and research meet*, December 17, 2012

Further guest lectures at the Messerli Research Institute:

Dr. Birgit U. Stetina (Department of Psychology, Webster University, USA, Austria and Netherlands): *Psychological Aspects of Human Animal Interaction: What? When? How? Why? ... Pathways to Underlying Psychological Phenomena*, April 11, 2012

Dr. Andrea M. Beetz (Psychologist, Institut für sonderpädagogische Entwicklungsförderung und Rehabilitation (ISER), University of Rostock, Germany): *The Field of Human-Animal Interactions: Theories, Effects, and their Application in Animal Assisted Interventions*, April 25, 2012

Prof. Dr. Markus Heinrichs (Institute of Psychology, University of Freiburg, Germany), *"Social Neuropeptides" in the Human Brain: Neurobiological Mechanisms and Clinical Implications*, May 30, 2012

Dr. Barbara Schöning, MSc, PhD (Hamburg, Germany), *Aggressive behaviours in dogs – from problem to rehabilitation: opportunities offered by behavioural medicine*, June 25, 2012





Comparative Medicine

Comparative Medicine was defined as a future field of research in the development plan 2020 of Vetmeduni Vienna. The new Unit of Comparative Medicine is making a significant contribution to this field. Differences and similarities between various species will be examined in relation to disease, especially in regards to more rapid development of new drugs and considering the 3Rs, within the Messerli Research Institute. In this respect, the methods used by the unit aim at comparing tissue, cells and genetic information, making sure the animals are treated mainly as patients and used only as laboratory animals if this is required by law or if animal experiments can't be replaced by alternative methods.

The unit focused its work on comparative allergology and oncology in 2012 and was able to acquire several new projects. Among them are third-party funded projects acquired by tender, as well as a doctoral training program with a long-term perspective. Last but not least, two projects on "animals as a therapy" were set up within interdisciplinary teams of experts that will not only monitor the feelings of human patients, but also the therapy animals for the first time.



The members of the Unit of Comparative Cognition at the AKH

Research projects

Ongoing projects

Targeting ERbB-1 and ERbB-2 overexpressed in cancer of dog by passive immunotherapy with IgG versus IgE antibodies

This FWF stand-alone project aims at developing immunoglobulins for the important human tumor antigens EGFR and HER-2 also for dogs. This necessity stems from the fact that passive immunotherapies are among the best therapeutics in human clinical oncology, but they have not yet been used in veterinary medicine. There is a need to apply such therapies to pets, as about 50% of all dogs over 10 years of age develop cancer and die. In the first project phase, canine immunoglobulins for EGFR were already produced on an in vitro basis. Their efficacy against EGFR overexpressing tumor cells could be shown.

Project leaders and collaborators:

Univ.Prof. Dr. Erika Jensen-Jarolim, Judit Fazekas (MSc student), Dr. Marlene Weichselbaumer

Project partners: Univ.Prof. DI Dr. Renate Kunert, Univ. of Natural Resources and Life Sciences, Vienna, Doz. Dr. Edzard Spillner, Univ. Hamburg, Dr. Michael Willmann and o. Univ.Prof. Dr. Johann Thalhammer, Internal Medicine Small Animals, Vetmeduni Vienna

Term: 2011-2014

Funded by: FWF – Austrian Science Fund

2012 approved research projects

Development of mimotope vaccines for preclinical and comparative medicine studies

Sub-project 19 in the FWF Special Research Program (SFB) on Allergies F4606: this SBF follows the previous SFB 1808 that investigated allergies for 10 years. Univ.Prof. Dr. Erika Jensen-Jarolim was involved in one sub-project (spokesman of both SFB: Univ. Prof. Dr. Rudolf Valenta, Meduni Vienna).

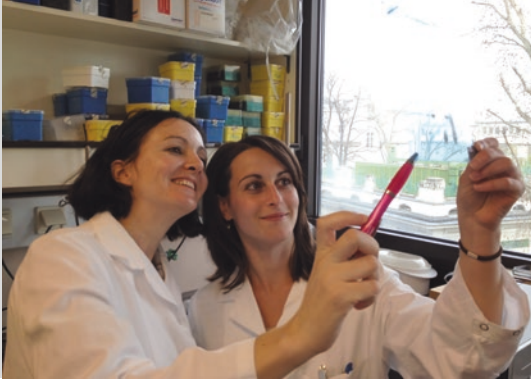
This project will develop so-called mimotop vaccines for the most important allergens in humans and dogs. The vaccines will be used in comparative clinical studies. Allergic dogs will be tested for their molecular allergy profile using an allergen chip for the first time. The main aim is to begin clinical vaccination quickly, not least in order to meet the 3R rule faster, following on from pre-clinical proof-of-concept studies in mouse models. Although the IgE biology of mice, dogs and humans is not completely comparable, initial results indicate that similar allergens are relevant to humans and dogs.

Project leaders: Univ.Prof. Dr. Erika Jensen-Jarolim with Co-Project leader Priv.Do. Dr. Isabella Pali-Schöll

Project partners: Dr. Lucia Panakova and o. Univ.Prof. Dr. Johann Thalhammer, Internal Medicine Small Animals, Vetmeduni Vienna

Term: from beginning of 2012, 3 years, perspective 10 years

Funded by: FWF – Austrian Science Fund



Franziska Roth-Walter and Anna Willensdorfer working in the lab

Cell communications in allergy and oncology

The FWF doctoral program “CCHD – Cell Communication in Health and Disease” was launched in 2006 (spokesman Univ.Prof. Dr. Stefan Böhm) and was successfully prolonged to 2012. Univ.Prof. Dr. Erika Jensen-Jarolim has been involved in sub-projects in the CCHD program from its onset.

- **Project 1:** Neuronal pathways connect allergy and behavior
- **Project 2:** Proof of concept studies with canine anti EGFR IgG and IgE antibodies

Project 1 investigates avoidance behavior as a consequence of food allergies. The number of sensitizations to odorous substances is increasing in the field of both human and veterinarian allergies. Aerosolized, these odorous substances can lead to cross-sensitization to food products. Symptoms extend to life-threatening anaphylaxis. The project investigates the molecular, immunological and behavioral aspects of this. A special emphasis has been placed on non-invasive methods.

Project 2 continues an on-going FWF project. Canine immunoglobulins (Ig) for the tumor antigen EGFR have been produced. The focus is on the IgE class that causes the sickness from allergies, but could have positive effects on cancer cells (AllergoOncology).

Project leader and collaborator: Univ.Prof. Dr. Erika Jensen-Jarolim

Term: until 2016

Funded by: FWF – Austrian Science Fund

Comparing allergic mechanisms in humans & dogs to promote the development of immunotherapeutic strategies

In the new FWF doctoral program “MCCA – Molecular, Cellular and Clinical Allergology” (spokesman Univ.Prof. Dr. Winfried Pickl)

- **Project 1:** Preclinical and clinical allergen immunotherapy studies
- **Project 2:** Establishment of cellular methods for allergooncology in dogs

Project 1 shall adopt the most important methods in molecular and cellular allergology for the canine system. Furthermore, the delivery system for allergens and mimotop vaccines will be optimized, in particular using functionalized microparticles as an innovative immunotherapeutic formulation. The main aim is to initiate clinical trials quickly in order to provide access to recent developments for animal patients.

Project 2 will refer to an allergooncological approach and establish molecular and cellular methods in the canine system in order to demonstrate in-vitro proof of concept for the efficacy of IgE versus IgG against cancer antigens. The project will mainly examine non-classic, alternative effector cells. The aim is also to conduct a clinical study with these immunoglobulins in dogs suffering from cancer.

Project leaders and collaborators: Univ.Prof. Dr. Erika Jensen-Jarolim, Univ.Ass. Dr. Franziska Roth-Walter

Project partners: Dr. Michael Willmann and o. Univ.Prof. Dr. Johann Thalhammer, Internal Medicine Small Animals, Vetmeduni Vienna

Term: 2013-2016, Perspektive bis 10 Jahre

Funded by: FWF – Austrian Science Fund

Further projects started in 2012

Tiere für's Herz (Animals for the Heart)

This project is a study to examine the effects of keeping dogs or visits of therapy dogs to patients suffering from cardiac insufficiency. There is no scientific proof of concept of the positive effects of this kind of therapy. Project leader, Univ.Prof. Dr. Claudia Stöllberger, is a cardiologist at the Hospital Rudolfstiftung in Vienna and was the chairlady of the association "Tiere als Therapie" (animals as a therapy). She set up an interdisciplinary team in 2012, including members of the Unit of Comparative Medicine that will also examine the effects of the situation on the therapy dogs. In her dissertation, Dr. Lisa-Maria Glenk optimized the measurement of cortisol in dogs which is relevant for measuring stress. This will be integrated into the study. Prof. Stöllberger can monitor patients who suffer from cardiac insufficiency and wear a pacemaker via the monitor function of their pacemakers. Psychologist Dr. Andrea Beetz is acting as a consultant to the project. Univ.Ass. Dr. Zsófia Virányi from the Messlerli Research Institute completes the team with her expertise in canine cognition biology.

Project leader: Univ.Prof. Dr. C. Stöllberger (2nd Med. Dep. Hospital Rudolfstiftung)

Project collaborator: Dr. Lisa-Maria Glenk (Karl-Landsteiner-Institut für Neurochemie, Neuropharmakologie, Neurorehabilitation und Schmerztherapie, Landeskrankenhaus Mauer, Institute of Medical Biochemistry, Vetmeduni Vienna)

Project partners: Univ.Ass. Dr. Zsófia Virányi (Comparative Cognition, Messlerli Research Institute), Dr. Andrea Beetz (Institut für Sonderpädagogische Entwicklungsförderung und Rehabilitation, Univ. Rostock), Univ.Prof. Dr. Erika Jensen-Jarolim (Messlerli Research Institute, Comparative Medicine)

Status: Ethics approved, submission for funding in 2013

Funded by: submission in progress

DogsforLife – a pilot study

DogsforLife is a research initiative by an interdisciplinary team at Meduni Vienna and Vetmeduni Vienna, headed by Dr. Katerina Hora (Meduni Vienna). The expertise of Prof. Richard Crevenna (Clinic of Physical Medicine and Rehabilitation at the Meduni Vienna) as the principal investigator and specialist in oncological rehabilitation is contributing to the project greatly. The study aims to answer the following question: does the specific use of therapy dogs together with moderate aerobic gait training have effects on patients suffering from laryngeal cancer in comparison to gait training only? The veterinary medical examination will evaluate the use of therapy dogs and the effects of the human-animal interaction involved on the physiology (Cortisol, IgA and Alpha Amylase) and the behavior of therapy dogs. What are the effects of being a therapy animal for specially trained dogs? The results shall – also in terms of quality assurance – create a solid basis for the professional use of therapy dogs in (oncological) rehabilitation and therapy. The target is to verify relevant parameters for the dogs' training, working conditions and quality of life.

Project leader: Dr. Katerina Hora (Department Evaluation and Quality Management at the Meduni Vienna)

Project collaborators: ao.Univ.Prof. Dr. Richard Crevenna (Principal investigator and expert of oncological rehabilitation, Clinic of Physical Medicine and Rehabilitation at the Meduni Vienna) Dr. Lisa-Maria Glenk (Karl-Landsteiner-Institut für Neurochemie, Neuropharmakologie, Neurorehabilitation und Schmerztherapie, Landeskrankenhaus Mauer and Institute for Medical



Minisymposium at the Messerli Research Institute

Biochemistry, Vetmeduni Vienna), Dr. Sara Szente-Voracek (Department of Medical Education, Meduni Vienna)

Project partner: Univ.Prof. Dr. Erika Jensen-Jarolim (Messerli Research Institute, Comparative Medicine)

Status: Ethics approved in 2012, submitted for funding at Medizinisch-wissenschaftlicher Fonds des Bürgermeisters der Stadt Wien on December 1, 2012

In addition, there are **five more (FWF) research projects, two WWTF projects, one Initial Training FP7 Program project coordination and one project of the Herzfeld Family Foundation** at the second location of the Unit, the Laboratory of Comparative Immunology and Oncology at the Center for Pathophysiology, Infectiology and Immunology at Meduni Vienna. However, these projects are not described in detail in this annual report.

Presentations and other scientific events

Univ.Prof. Dr. Erika Jensen-Jarolim

Vergleichende Ansätze in der Krebstherapie bei Mensch und Tier. Austrian Economic Chambers. Vienna, February 29, 2012

Allergy vaccines: the task of immunizing hypersensitive patients. 2nd Annual Global Vaccine Forum. Vienna, March 1-2, 2012

Allergic to Food. Public lecture at the Meduni Vienna. Vienna, March 10, 2012

Mimotope vaccines in cancer to induce IgG or IgE. Adjuvant & Allergen Vaccines 2012. Cuba, May 6-12, 2012

Safety Aspects of Allergen Subunit Vaccines. Adjuvant & Allergen Vaccines 2012. Cuba, May 6-12, 2012

European Academy of Allergy and Clinical Immunology. Symposium – Gender difference and immediate type hypersensitivity reactions. Geneva, Switzerland, June, 17, 2012

Comparative Medicine, a strategy to foster AllergoOncology. Department of Immunology, Capital Medical University Beijing. Beijing, October 23, 2012

Neue Biomarker aus der Komparativen Medizin. Austrian Society for Laboratory Medicine and Clinical Chemistry. Salzburg, November 9, 2012

Chip allergy diagnosis: Case Reports and their therapy options. MSD Symposium. Hotel Savoy. Vienna, November 21, 2012

Dr. Krisztina Szalai

Skin sensitization with the house dust mite allergen Der p 2 is not exclusively mediated by TLR4 activation. Austrian Society for Allgology and Immunology, Institute of Science and Technology (IST). Klosterneuburg, November 30, 2012

Guest lectures and symposia hosted by the Unit of Comparative Medicine

Comparative Medicine Seminar together with RotePfote – Krebsforschung für das Tier: Dr. Gyula Gajdon (Comparative Cognition, Messerli Research Institute): *What a parrot's mind adds to play: Investigating bird cognition in lab and field.* Meduni Vienna, January 12, 2012

Comparative Medicine Seminar together with RotePfote – Krebsforschung für das Tier: Prof. Hiroshi Matsuda, Tokyo Agricultural University, Japan: *The NC/Tnd mouse as an animal model for human atopic dermatitis.* Vetmeduni Vienna, March 19, 2012

Comparative Medicine Seminar together with RotePfote – Krebsforschung für das Tier: Prof. Dr. Claudia Stöllberger, Hospital Rudolfstiftung: *Tiergestützte Therapie bei Herzinsuffizienz.* Vetmeduni Vienna, May 23, 2012

Comparative Medicine Minisymposium “Refinement” together with RotePfote – Krebsforschung für das Tier.
Vetmeduni Vienna, July 3, 2012

Chair: Univ.Prof. Dr. Erika Jensen-Jarolim

Speakers:

- Prof. Thomas Röder (Institute of Zoology, Kiel University, Germany): *Drosophila as a model in asthma research*
- Dr. Peter König (Institute for Anatomy, University of Lübeck, Germany): *Multiphoton imaging to examine immunological processes in living mice and flies*
- DDr. Luciana C. Mirotti (Institute of Biomedical Sciences, University of São Paulo, Brasilia): *Neural pathways connect allergy and behavior*

Comparative Medicine Minisymposium “Molecular Imaging” together with RotePfote – Krebsforschung für das Tier.
Vetmeduni Vienna, October 18, 2012

Chair: Dr. Michael Willmann

Speakers:

- Dr. Sebastian Gehrig, Clinic for Companion Animals and Horses, Vetmeduni Vienna, Unit of Diagnostic Imaging: *Establishment of molecular imaging in comparative and veterinary clinical oncology*
- ao.Univ.Prof. Dr. Sybille Kneissl, Clinic for Companion Animals and Horses, Vetmeduni Vienna, Unit of Diagnostic Imaging: *Frozen sections and plastinates for permanent documentation of CT- and MRT-pathologies*
- Univ.Prof. Thomas Helbich, MSc, MBA, Clinic for Radiodiagnostics, Meduni Wien: *From Morphology to Molecules*



Ethics and Human-Animal Studies

Human-animal interactions are currently undergoing change. This requires an increased need for orientation in the various aspects of this relationship. New findings about animals and changing public perception in different contexts such as lab animals, livestock, zoo animals and wildlife make a basic analysis of the moral relationship between humans and animals urgent.

The Unit of Ethics and Human-Animal Studies focuses on relevant ethical questions, introducing them to the social discourse and developing solutions. Interdisciplinary work is of particular significance here: natural sciences and humanities are in permanent exchange with each other. Thus, the 3R principles, for example, combine normative criteria and scientific knowledge. Another example of this field is the social responsibility of veterinarians. Although they are natural scientists, they are confronted with ethical questions in their daily practice. Not only this, but also basic questions such as the interaction between empirical and normative sciences and new theories in human-animal interactions shape the profile of the unit. The members of the unit dedicate their work to basic and applied topics about the moral relationship between humans and animals, according to their research profiles.



Team of the Unit Ethics and Human-Animal Studies

Research projects

Projects finished in 2012

Socio-cognitive abilities in animals and their relevance for animal ethics and animal welfare

The doctoral project by Univ.Ass. Dr. Judith Benz-Schwarzburg examined to what extent we can talk about socio-cognitive abilities in animals. Three fields were taken into account for this purpose: culture, language and theory of mind. Non-monolithic definitions of such abilities that describe culture as passing on of knowledge, that do not limit language to grammar and that do not limit theory of mind to understanding wrong convictions, can reasonably describe the knowledge and abilities of animals. This project also looked into and discussed claims for basic human rights for great apes and dolphins to examine the ethical relevance of exploring such competences. The discrepancies between increasing demands for animal rights and the status quo in the way humans deal with animals were made clear. Socio-cognitive abilities in animals should have more influence on welfare considerations, for example, on the species-appropriate husbandry of animals in captivity.

The project was completed with the doctor's degree at the University of Tübingen in February 2012. The dissertation was published in December 2012.

Supervisors: Prof. Dr. Eve-Marie Engels (University of Tübingen) and Prof. Dr. Hanno Würbel (University of Bern)

Term: 2006-2012

Ongoing projects

Scientific responsibility in animal experiments

The legal framework for animal experiments is defined by an EU Directive (2010/63/EU), which has been transposed into national law. A cooperation project was initiated by the Unit of Ethics and Human-Animal Studies at the Messerli Research Institute, the Documentation Center of Animal Welfare and Veterinary Legislation at the University of Veterinary Medicine and the Medical University of Vienna to examine this. The project aims to develop guidelines for researchers and committee members to reach norm requirements in the field of animal experiments, against the backdrop of the new Animal Experiments Act and the corresponding regulations. A manual will be designed to support researchers and committee members in their scientific responsibility. This publication shall illustrate the scientific, legal and ethical aspects of animal experiments in a clear and practical way and bundle them for the needs of scientists and committee members.

Project leader: Univ.Prof. Dr. Herwig Grimm

Project collaborator: Univ.Ass. Dr. Norbert Alzmann

Project partner: Documentation Center of Animal Welfare and Veterinary Legislation at the University of Veterinary Medicine

Term: March 2012 - February 2013 (expected)

Funded by: Messerli Research Institute, University of Veterinary Medicine, Vienna, Medical University of Vienna



Vethics for Vets – ethics for veterinary officers

The relationship between humans and animals is currently undergoing change. This has led to contradictions in human-animal interactions. These contradictions and changing values are increasingly obvious in the field of veterinary practice and confront veterinary officers with ethical problems, in particular. There is the question of pet euthanasia for animals that have become family members, the question of treating and controlling livestock, disease control and animal hoarding. Veterinary officers sit between the priorities of animal welfare, business, politics and law, as well as the public sphere. They increasingly need knowledge in the field of ethical decision-making together with their scientific expertise.

The project aims to develop assistance tools for ethical conflicts together with veterinary officers. The topics they face in everyday situations are key. Relevant ethical topics will be discussed in workshops on the basis of veterinary experience and under the guidance of ethicists. The sensitive and ethically informed treatment of topics such as killing and the using and humanizing animals is the basis for assistance tools to be used in practice and for further research into the theory of veterinary medicine.

Project leader: Univ.Prof. Dr. Herwig Grimm

Project collaborator: MMag. Kerstin Weich

Term: 2012-2015

Funded by: Federal Ministry of Health



Instrumentalization as an ethically relevant criterion

A bioethical analysis and evaluation of SCNT cloning in nonhuman mammals

The doctoral project by Univ.Ass. Samuel Camenzind, MA, is aimed at analyzing and evaluating Somatic Cell Nuclear Transfer Cloning (SCNT cloning) with adult cells in nonhuman mammals. The focus of the evaluation is on the development of a criterion which can be used to distinguish different forms of instrumentalization and compare SCNT cloning with other reproduction technologies. By developing an instrumentalization criterion, the project will contribute to the investigation of ethically relevant criteria within animal ethics and bioethics. It also aims to provide orientation in the ethical evaluation of animal cloning and define the relationship between SCNT cloning and other reproduction technologies in regards to instrumentalization.

Supervisors: Univ.Prof. Dr. Herwig Grimm, Univ. Prof. Dr. Klaus Peter Rippe (University of Education Karlsruhe)

Term: 2012-2015

Developing a set of criteria to evaluate animal experiment proposals

Up to now, there has been no standardized method for the evaluation of animal experiment proposals and for harm-benefit analysis on the basis of objective criteria. The aim of the project is to develop such a methodology in order to evaluate research projects, including animal experiments, also from an ethical point of view. The background to this is the new Animal experiments Act that came into effect on January 1, 2013.

When transposing the EU Directive 2010/63/EU into national law, the development of a set of criteria for objective harm-benefit analysis was established in the Austrian Animal Experiments Act by the end of 2015. This set of criteria, based on scientific expertise, will be developed at the Messerli Research Institute. It will be practical in nature in order to enable an objective harm-benefit analysis, taking ethical aspects into account. This set of criteria will be developed in an interdisciplinary project, against the backdrop of already existing sets of criteria and based on the experience from former commission work and proposals.

Project leader: Univ.Prof. Dr. Herwig Grimm

Project collaborators: N. N.

Term: December 15, 2012 - December 15, 2015

Funded by: Federal Ministry for Science and Research



Presentations and other scientific events

Univ.Prof. Dr. Herwig Grimm

Leiden um der Schönheit willen? 6. Leipziger Tierärztekongress, Germany, January 19, 2012

Benthams Erben und ihre Probleme. Tierethik zwischen Politik, Wissenschaft, Wirtschaft und Medien. Bad Boll, Germany, March 2012.

Leaving the ivory tower or back into theory? Learning from paradigm cases in animal ethics. EurSafe 2012 (May 30 - June 2, 2012). Tübingen, Germany, May 31, 2012

A Computer Game for Pigs. An interactive design workshop to develop a computer game for pigs. EurSafe 2012 (May 30 - June 2, 2012). Tübingen, Germany, June 1, 2012

Animal ethics: the moral relevance of socio-cognitive abilities in animals. Minding Animals 2 (July 3-6, 2012). Utrecht, Netherlands, July 4, 2012

Learning from paradigm cases in Animal ethics. Minding Animals 2 (July 3-6, 2012). Utrecht, Netherlands, July 4, 2012

Das Tier an sich? Die Suche nach dem Menschen in der Tierethik. Philosophicum Lech 2012 (September 19-23, 2012), September 23, 2012

Response/Responsibility. Workshop at the Summer School CLAS 2012 (September 24-29, 2012). Würzburg, Germany, September 24-29, 2012

Das Tier an sich. Auf der Suche nach dem Menschen in der Tierethik. Thüringentag 2012. Jena, Germany, November 9, 2012

Ethik und die Mensch-Tier-Beziehung. Teutsch Conference on Animal Ethics and Animal Philosophy. Karlsruhe, Germany, November 23, 2012

Univ.Ass. Dr. Judith Benz-Schwarzburg

Sozio-kognitive Fähigkeiten bei Tieren und ihre Relevanz für Tierethik und Tierschutz. Doctoral colloquium at the Faculty of Philosophy of the University of Tübingen. Tübingen, Germany, February 7, 2012

Eine ethische Kritik zum Artenschutz und Bildungsanspruch des Zoos. 21st Conference of German-speaking zoo pedagogues. Wels, April 14, 2012

Socio-cognitive abilities in animals and their ethical relevance. Workshop on Animal Welfare: Ethical and Behavioural Questions. Århus, Denmark, May 14, 2012

Cognitive relatives yet moral strangers? Killing great apes and dolphins for food. EurSafe 2012 (May 30 - June 2, 2012). Tübingen, Germany, May 31, 2012

Cognitive relatives yet moral strangers? Linking Cognition with Ethics. Minding Animals 2 (July 3-6, 2012). Utrecht, Netherlands, July 4, 2012

Short Presentation: *The Messerli Research Institute: Who we are and what we do.* Summer School CLAS 2012 (September 24-29, 2012), Würzburg, Germany, September 24, 2012

Short Presentation: *Minding Animals Germany: Where Scientists meet Animal Advocates* (together with Dr. Jessica Ullrich).

Summer School CLAS 2012 (September 24-29, 2012). Würzburg, Germany, September 24, 2012

Tiere und Ethik. Module in the course “Tiere als Therapie” (Animals as a therapy), Vetmeduni Vienna, October 14, 2012

Univ.Ass. Dr. Martin Huth

Der Auftritt des Anderen und der Dritte. Colloquium Levina: 50 Jahre Totalität und Unendlichkeit. Vienna, March 2, 2012

Das Faktum der Vernunft und die Lebenswelt(en). Presentation at the conference “Phänomenologische Perspektiven auf Kant”, University of Vienna, September 28, 2012

Univ.Ass. Samuel Camenzind, MA

Ethische Aspekte der Hundezucht – Instrumentelle Besamung und SCNT-Klonen. 6. AGRH-Tagung: Neues aus der Fortpflanzungsmedizin. Clinic for Obstetrics, Gynecology and Andrology of Large and Small Animals, Veterinary Outpatient Facility. Gießen, Germany, November 10, 2012

Was ist guter Unterricht?/Prüfen, Bewerten, Beurteilen. Workshop at the Messerli Research Institute. Vetmeduni Vienna, September 5, 2012

Dignity of Creature: Beyond suffering and even further. Minding Animals 2 (July 3-6, 2012), Session: New developments in animal ethics. Utrecht, Netherlands, July 4, 2012

Univ.Ass. Dr. Norbert Alzmann

Tierethik. Lecture within the series „Grundfragen der Ethik, Theorie und Geschichte der Biowissenschaften“ at the chair Ethics in Life Sciences, Eberhard-Karls-Universität Tübingen. Tübingen, Germany, January 17, 2012

Modelle der Hilfestellung zur Beurteilung der ethischen Vertretbarkeit von Tierversuchsvorhaben. Lecture at the Federal Ministry of Science and Research (BMWF). Vienna, July 12, 2012.

Modelle der Hilfestellung zur Beurteilung der ethischen Vertretbarkeit von Tierversuchsvorhaben. Lecture at the Federal Ministry of Health (BMG). Vienna, July 31, 2012.

Responsibility in animal experimentation. Assistance for the harm-benefit analysis in the context of the new EU Directive. Talk at EUSAAT 2012 – 14th Annual Congress of EUSAAT and Linz 2012 – 17th European Congress on Alternatives to Animal Testing, September 5-8, 2012), University of Linz. Linz, September 6, 2012

Guest lectures hosted by the Unit of Ethics and Human-Animal Studies

Dr. Siobhan O’Sullivan, School of Social and Political Sciences, University of Melbourne, Australia: *Animals, Equality and Democracy*. July 18, 2012

Dr. Andrew Knight, Oxford Centre for Animal Ethics, Great Britain: *The costs and benefits of animal experiments*. November 20, 2012

Teaching at the Messerli Research Institute in 2012 included a number of courses at the three partner universities in Vienna and some courses at foreign universities. The focus, however, was on the new Master's program at the University of Veterinary Medicine, Vienna, which is designed to meet the institute's aims.

Interdisciplinary Master in Human-Animal Interactions (IMHA)

One of the major targets of the institute is the training of young experts who are able to ethically reflect on human-animal interactions and assume responsibility on a scientific basis.

Therefore, the three units of the Messerli Research Institute, together with the Institute of Animal Husbandry and Animal Welfare, designed an international Master's program that is unique in its broad interdisciplinary approach. The curriculum comprises aspects of natural sciences, humanities and law in the context of human-animal interaction:

- Behavioral Biology and Cognition Biology
- Comparative Medicine
- Animal Husbandry and Animal Welfare, legal bases of human-animal interaction
- Philosophy, Theory of Science, Ethics



Seminar at the Messerli Research Institute

The program is mainly in English and builds upon knowledge and competences acquired from previous Bachelor's or diploma programs at national or international universities. The research-oriented program qualifies graduates for both academic careers and careers in all relevant fields of human-animal interaction.

The broad interdisciplinary approach and the bundling of basic and applied research is a challenge for the teachers, as well as for the students. Therefore, the people involved were selected carefully – teachers, as well as students.

The teachers

Not only do all scientists at the Messerli Research Institute teach in the new Master's program, but also a large number of experts from the three partner universities and from elsewhere. This strategy aims to promote the Master's program and has been successful from its beginning.

Messerli Research Institute

- Univ.Ass. Dr. Norbert Alzmann
- Univ.Ass. Dr. Judith Benz-Schwarzburg
- Univ.Ass. Samuel Camenzind, MA
- Univ.Ass. Dr. Gyula Gajdon
- Univ.Prof. Dr. Herwig Grimm
- Univ.Prof. Mag. Dr. Ludwig Huber
- Univ.Ass. Dr. Martin Huth
- Univ.Prof. Dr. Erika Jensen-Jarolim
- Priv.Doiz. Dr. Isabella Pali
- Univ.Ass. Dr. Friederike Range
- Univ.Ass. Dr. Franziska Roth-Walter
- Dr. Krisztina Szalai
- Univ.Ass. Dr. Zsófia Virányi

Vetmeduni Vienna

- ao.Univ.Prof. Dr. Christine Aurich
- Ass.Prof. Dr. Johannes Baumgartner
- DDr. Regina Binder
- o.Univ.Prof. Dr. Mathias Müller
- Ass.Prof. Dr. Knut Niebuhr
- Dr. Lucia Panakova
- Priv.Doiz. Dustin Penn, PhD
- Univ.Prof. Dr. Thomas Rüllicke
- Univ.Prof. Dr. Christian Schlötterer
- Mag. Hanna Schöpfer, PhD
- ao.Univ.Prof. Dr. Wolfgang Sipos
- o.Univ.Prof. Dr. Josef Troxler
- ao.Univ.Prof. Dr. Susanne Waiblinger
- Dr. Florian Zeugswetter

External teacher

- Univ.Prof. Mag. Dr. Thomas Bugnyar
- o.Univ.Prof. Dr. John Dittami
- ao.Univ.Prof. DI Dr. Isabella Ellinger
- Univ.Lek. Univ.Doiz. DDr. Josef Finsterer
- Univ.Prof. Mag. Dr. Kurt Kotrschal
- ao.Univ.Prof. Dr. Friedrich Ladich
- ao.Univ.Prof. Dr. Eva Millesi
- Mag. Dr. Elisabeth Oberzaucher
- ao.Univ.Prof. Dr. Peter Pietschmann
- Ass.Prof. Dr. Georg Roth
- Univ.Prof. Dr. Claudia Stöllberger
- Priv.Doiz. Mag. Dr. Sabine Tebbich



IMHAI class

The students

In spring 2012, the first students were admitted after an international announcement and admission procedure. The admission procedure comprised three stages:

1. Online application with a CV, a motivation letter and certificates from previous studies or work experience

2. Written test (June 12, 2012), comprising 70 questions in English, from the following fields:

- Principles of biology (evolution, form and function, sensory and mechanical mechanisms, population ecology)
- Principles of animal husbandry and animal welfare (nutrition and behavior of animals)
- Principles of human and veterinary medicine (immunology, infectiology, medicine, chemistry, biochemistry)
- Questions on ethics and human-animal interactions

3. Interviews (June 12 and 13, 2012): The one-to-one interviews were conducted in two days with juries consisting of two to three scientists from the main fields in the Master's program. A special focus was placed on the candidates' application motivation. The interviews were part of the final decision. A total of 15 students were admitted, on the basis of all the results in the admission procedure.

IMHAI start

The official start was on October 1, 2012, at MesserliHouse. The aims of the program and the necessary competencies were explained at a welcome event:

- Orientation in different scientific ways of thinking
- Interdisciplinary cooperation in research projects
- Specialization within one main field
- Ethical evaluation and systematic reflection of current relevant topics of human-animal interaction
- Carrying out independent research projects

Vivid teaching in the lecture Comparative Anatomy



The first semester

The following courses were offered in **autumn term 2012/13**:

Title	LV-Typ	SWS	ECTS
Animal Cognition: from associative learning to reasoning (Huber)	VO	2	2
Introduction to Animal Behavior (Millesi et al.)	VO+SE	2	2
Applied Ethology and Animal Welfare I: Basic Principles and Concepts (Waiblinger et al.)	VO	1	1,5
Behaviour, Husbandry and Welfare of Farm Animals (Waiblinger et al.)	VO	2	3
Human-animal-relationship: Biological (and psychological) fundamentals (Waiblinger)	VO, SE	1	1
Basics of Comparative Medicine			
- Comparative Anatomy and Physiology (Jensen-Jarolim together with 17 teachers from Vetmeduni Vienna, Meduni Vienna and Hospital Rudolfstiftung)	VO	2,7	4
- Comparative Genetics	VO	1,3	2
Introduction to Theoretical Philosophy and Philosophy of Science (Grimm, Huth)	VO	2	2
Introduction to Ethics (Huth, Benz-Schwarzburg)	VO	2	2
Introduction to and Methods of Practical Ethics (Grimm)	VO/UE	2	2
Reading-Course on Animal Ethics (Camenzind)	SE	2	2
Exam of Module Ethics of Human-Animal Interactions			1,5



Further Courses

At Vetmeduni Vienna:

- Course “Ethologie” within the lecture series “Rassenkunde, Tierhaltung und Ethologie” (1st sem.): Univ.Prof. Dr. Ludwig Huber, Univ.Ass. Dr. Gyula Gajdon, Univ. Ass. Dr. Friederike Range
- Course “Lernen und Verhalten” within the lecture series “Physiologie” (3rd sem.): Univ.Prof. Dr. Ludwig Huber
- Lecture “Tierverhalten und Sicherheitsaspekt bei Haustieren (Übungstierkunde)”: Univ.Ass. Dr. Friederike Range

At the University of Vienna:

- Univ. Prof. Dr. Ludwig Huber participated as a teacher and supervisor in the PhD program “Cognition and Communication” (DK FWF) together with Univ.Prof. Dr. Thomas Bugnyar, Univ.Prof. Dr. Tecumseh Fitch, Univ.Prof. Dr. Walter Hödl and Univ. Prof. Dr. Kurt Kotrschal, spring term 2012 and autumn term 2012
- Univ. Prof. Dr. Ludwig Huber participated in the course “Philosophisch-theologisch-biologisches Seminar” (leader: o.Univ. Prof. Dr. Marianne Popp), spring term 2012 and autumn term 2012
- Supervising of several Master’s and PhD projects: Univ.Prof. Dr. Ludwig Huber, co-supervisors Univ.Ass. Dr. Gyula Gajdon, Univ.Ass. Dr. Friederike Range and Univ.Ass. Dr. Zsófia Virányi
- Lecture “Medizinethik”: Univ.Ass. Dr. Martin Huth, spring term 2012

- Seminar “Meat is Murder? – Zu den moralphilosophischen Grundlagen der Tierethik und des Tierschutzes”: Univ.Prof. Dr. Herwig Grimm, spring term 2012
- Seminar “Beyond pleasure and pain – Probleme und Ansätze der Tierethik jenseits des Pathozentrismus”: Univ.Prof. Dr. Herwig Grimm, autumn term 2012
- Seminar “John Deweys Ethik”: Univ.Prof. Dr. Herwig Grimm, autumn term 2012

At Meduni Vienna:

Univ.Prof. Dr. Erika Jensen-Jarolim and the members of the Unit of Comparative Medicine teach in different propaedeutics in the PhD program in immunology, in lab courses, basic seminars and journal clubs of the PhD college CCHD and in lectures for medical students (block 8: “Krankheit, Krankheitsursachen und -bilder”) and block 13 (“Ernährung”)

At Vetmeduni Vienna and Meduni Vienna:

In 2012, 28 Progress Report Meetings, attended by 14 participants on average, took place in the Unit of Comparative Cognition, as well as 17 interdisciplinary journal clubs “New Developments and comparative aspects in allergology, oncology and immunology”, attended by seven participants on average. Teachers from Vetmeduni Vienna (Univ.Prof. Dr. Veronika Sexl, Univ.Prof. Dr. Armin Saalmüller and Univ.Prof. Dr. Mathias Müller) and from Meduni Vienna were involved. These journal clubs took place alternately at both locations of the unit and were also announced at both locations.

At international universities:

- Univ.Prof. Dr. Ludwig Huber: guest professor at Universidade de Salvador da Bahia, Brasilia, February 2012
- Univ.Ass. Dr. Zsófia Virányi: guest lecturer at the Eötvös Loránd University (November 22 and 29, 2012) and Central European University (March 1, 2012), Budapest, Hungary
- Univ.Ass. Dr. Zsófia Virányi: guest lecturer at Karlova Univerzita in Prague, Czech Republic, April 28, 2012



2012

Engagement in committees and networks

Univ.Prof. Dr. Ludwig Huber

- Spokesman of the Messerli Research Institute
- Coordinator of the Master's program IMHAI
- Member of the Curriculum Commission for the Master's program IMHAI and the Bachelor's program Equine Sciences
- Austrian representative in the Steering Committee as European Science Foundation network "CompCog"
- Member of the EU network project EUCOG II
- Member of the Steering Committee of the research platform "Cognitive Science" at the University of Vienna
- Secretary General of the association "Clever Dog Lab" to investigate cognition and behavior of dogs
- Member of the Internal Scientific Advisory Board of the Konrad Lorenz Institute for Evolution and Cognition Research
- Member of the Scientific Advisory Board of the Konrad Lorenz Research Station Grünau im Almtal

Univ.Ass. Dr. Friederike Range

- President of the association "Wolfsforschungszentrum"
- Vice-President and financial officer of the association "Clever Dog Lab" to investigate cognition and behavior in dogs
- Secretary General of the association of supporters of "Wolfsforschungszentrum"

Univ.Ass. Dr. Zsófia Virányi

- Program coordinator in the European Science Foundation Network "CompCog"
- Secretary General of the association "Wolfsforschungszentrum"
- President General of the association of supporters of "Wolfsforschungszentrums"
- President of the association "Clever Dog Lab" to investigate cognition and behavior of dogs

Univ.Ass. Dr. Gyula Gajdon

- Scientific manager at the Research Station Haidlhof

Univ.Prof. Dr. Erika Jensen-Jarolim in 2012

- Member of the Board of Trustees of WWTF
- Member of the Senate at Meduni Vienna
- Member of the Advisory Board to transpose the new EU Directive on animal experiments
- Member of the commission of external consultants of the animal ethics commission of the city of Vienna
- Member of the Steering Committee of the Federal Government of Lower Austria to develop the FTI strategy for Lower Austria
- Member of the Scientific Advisory Board of the Research Center Borstel, Leibniz Community Germany
- Member of the jury for science awards of Lower Austria
- President of the association "Rote Pfote – Krebsforschung für das Tier"
- Delegate of the Austrian Society for Allergology and Immunology to the World Allergy Organization

- Member of the newly founded Interest Group for Comparative Veterinary Allergology of the European Academy for Allergology and Clinical Immunology (EAACI)

Univ.Prof. Dr. Herwig Grimm

- Member of “Forschungsinitiative Tiertheorien: Grundlagen der Mensch-Tier-Beziehung in den Kultur- und Sozialwissenschaften”
- Member of the Scientific Advisory Board of the Institute Technik-Theologie-Naturwissenschaft at LMU Munich, Germany
- Member of the Scientific Advisory Board of “Tierschutz macht Schule”
- Member of EurSafe, European Society for Agricultural and Food Ethics
- Member of the interdisciplinary workgroup “Mensch-Tier-Beziehung”

Univ.Ass. Dr. Judith Benz-Schwarzburg

- Founding member of Minding Animals International: Developing an network on human-animal studies, animal ethics and animal welfare for all Germany, as a sub-group of Minding Animals International
- Consultant for the NGO Animal Equality Germany e.V.

Univ.Ass. Samuel Camenzind, MA

- Member of DACH: German-speaking EurSafe network
- Member of the Peer monitoring group “Recht – Tier – Ethik” at the University of Zurich

Dr. Norbert Alzmann

- Member of the consulting commission on animal testing in the administrative region of Tübingen
- Member of the ethics committee of the Seedfinancing Program of the Austria Wirtschaftsservice GmbH (aws)

ERC Starting Grant

At present, young scientists are finding it difficult to get enough opportunities to build up an independent academic career in Europe. The prestigious Starting Grants of the European Research Council (ERC) support them in this quest. The grants support excellent researchers with more than one million euros in funding and to a term of up to five years to build up their own team and work at a top level in Europe. This means the grants are highly competitive (4,700 applications per year). Only nine young scientists working in Austria received one of these grants in 2012. It is very encouraging that the Messerli Research Institute already received one in its first year.

Dr. Friederike Range, Senior Scholar in the Unit of Comparative Cognition and scientific manager of the Clever Dog Lab, got one of the ERC Starting Grants worth almost 1.3 million euros for the project “Understanding the proximate mechanisms of canine cooperation” and will use this money to research into the cooperation mechanisms among dogs and wolves, but also with humans. Furthermore, a new model system for behavioral studies can be established with the wolves and dogs that have been raised and kept together. This will lead to the world’s first comprehensive studies on the emotionally embedded cognitive mechanisms that control cooperative behavior. Dr. Friederike Range is also expecting her work to contribute to a deeper understanding of cooperation mechanisms in primates and humans.

It is very likely that the aspect integrating humans resulted in her receiving another prestigious award.



A wolf puppy at the Wolf Science Center is kissing Friederike Range

APA Distinguished Scientific Award

Univ.Ass. Dr. Friederike Range was given the Distinguished Scientific Award for Early Career Contribution to Psychology 2012 by the largest psychological society in the world, the American Psychological Association (APA). The ceremony took place in Orlando (Florida, USA) in August 2012. This award is given once a year to young scientists working in the field of psychology who have already made significant contributions to psychological research. Range got this award for her research on cognitive achievements in animals.

WWTF Awards

Seven scientists were given awards in the Cognitive Science Call in a ceremony at Vienna City Hall. Among them were two members of the Messerli Research Institute: Univ. Prof. Dr. Ludwig Huber (project: Like me) and Univ.Ass. Dr. Zsófia Virányi (project: Semantics), both from the Unit of Comparative Cognition. The winners got symbolic prizes from the Mayor of Vienna, Dr. Michael Häupl.



Ludwig Huber and Friederike Range (deputy for Zsófia Virányi) at the WWTF ceremony with Michael Häupl

Best Article 2012

Univ.Prof. Dr. Ludwig Huber received the “Best Article of 2012 Award” from the Psychonomic Society (USA) together with Mag. Michael Morton Steurer and Priv.Do. Dr. Ulrike Aust (both from Uni Wien) for the article “The Vienna comparative cognition technology (VCCT): An innovative operant conditioning system for various species and experimental procedures”. This article was published in the journal “Behavior Research Methods” in 2012.

Max Kade Fellowship

Philipp Starkl, PhD, from the Unit of Comparative Medicine, got a Max Kade Fellowship from the Max Kade Foundation for a research stay at the Prof. Steve Galli Lab of the Department of Pathology at the Stanford University. He is working there in the project “Interactions between mast cells and complement anaphylatoxins”. The Max Kade Fellowships support young graduates from all scientific disciplines.

Dr. Maria Schaumayer Dissertation Prize

In January 2012, Dr. Marlene Weichselbaumer from the Unit of Comparative Medicine received the Dr. Maria Schaumayer Dissertation Prize for her dissertation *Evaluation of carcinoembryonic antigen and its receptor as potential immunotherapeutic targets in canine mammary cancer*. The Dr. Maria Schaumayer Foundation supports women in science and business and aims at improving the general conditions for women.



Armin Tschermak von Seysenegg Award

Dr. Marlene Weichselbaumer from the Unit of Comparative Medicine got the Armin Tschermak von Seysenegg Award. This award is named after Prof. Dr. Armin Tschermak, Edler von Seysenegg (1870-1952), former professor of physiology at the University of Veterinary Medicine, and honors excellent scientific work.

Dr. Marlene Weichselbaumer



Travel grants and other awards

Judit Fazekas from the Unit of Comparative Medicine received the Red Paw Science Communication Award.

Dr. Josef Singer from the Unit of Comparative Medicine got a travel grant to take part in the *AACR Annual Meeting (American Association for Cancer Research)* from March 31 to April 4, 2012 in Chicago.

Mag. Caroline Stremnitzer from the Unit of Comparative Medicine received a travel grant to take part in the *European Congress of Immunology* from September 5-8, 2012 in Glasgow.

Another 14 prizes and travel awards were given to members of the Unit of Comparative Medicine at its second site, Laboratory for Immunology and Oncology. The article “Activation-induced cytidine deaminase (AID) linking immunity, chronic inflammation, and cancer“ (Mechtcheriakova, D./Svoboda, M./Meshcheryakova, A./Jensen-Jarolim, E. in *Cancer Immunol. Immunother.*) has been featured as a key scientific article by *Global Medical Discovery*.

Dissertation Prize of the University of Tübingen

Univ.Ass. Dr. Judith Benz-Schwarzburg from the Unit of Ethics and Human-Animal Studies received the award for the most outstanding doctoral thesis from the University of Tübingen. This prize is awarded once a year for excellent scientific work. Benz-Schwarzburg got this award for her thesis on socio-cognitive abilities of animals and their moral relevance which was published under the title “Verwandte im Geiste, Fremde im Recht. Sozio-kognitive Fähigkeiten bei Tieren und ihre Relevanz für Tierethik und Tierschutz” (Erlangen: Harald Fischer Verlag).



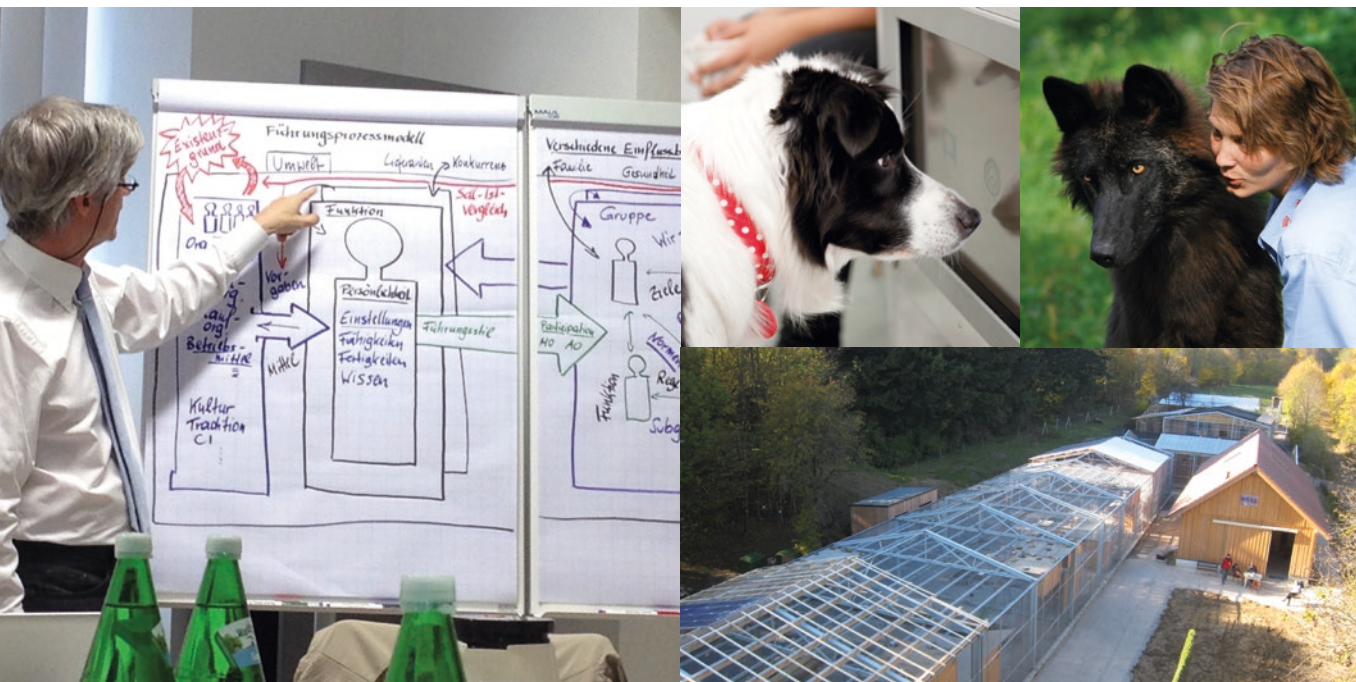
2012

Cooperation & International Engagement

All the activities of the Messerli Research Institute – research, as well as teaching – are internationally oriented within a network of strong partners.

The members of the institute

- cooperate with excellent institutes and individual scientists
- interact in international research projects
- participate in international conferences and other events as speakers
- are involved – also in leading positions – in international networks
- found and intensify international exchange programs
- promote academic mobility for students in European programs (e.g. Erasmus)
- engage international scientists on pre- and postdoc-level



The most important partners in 2012 were:

Associated Centers

Comparative Immunology and Oncology at Meduni Vienna

One part of the Unit of Comparative Cognition is located at the Institute for Pathophysiology and Allergy Research, Center for Pathophysiology, Infectiology and Immunology at the Meduni Vienna. This sub-unit bears the name “Comparative Immunology and Oncology” due to its main research field. Its location at the General Hospital Vienna (AKH), with its excellent facilities, allows it to be close to human patients, which is essential for any comparative strategy.

Clever Dog Lab Nussgasse

The Clever Dog Lab in Nussgasse 4 in the 9th District was still in use throughout 2012. Experiments were completed there, where they had been started, in order to keep test conditions constant and avoid confusion by the dogs. The facilities at the new location at the University of Veterinary Medicine were not quite ready yet. The focus of activities has shifted after the official opening (see p. 25) and transferring the association “Clever Dog Lab” to the new location. The last tests in Nussgasse took place in the week before Christmas. Right before the turn of the year the remaining equipment was moved and the old lab was cleared. The facilities in Nussgasse were handed over to the Department of Cognitive Biology of the University of Vienna (Univ.Prof. Dr. Tecumseh Fitch).

See also www.cleverdoglab.at



Herta Messerli and the members of the Foundation Council visiting the Clever Dog Lab



Research Station Haidlhof

The main activities relating to the second research objective of the Unit of Comparative Cognition take place at the Research Station Haidlhof. This station is the result of cooperation between the University of Veterinary Medicine, Vienna, and the University of Vienna (Department of Cognitive Biology, Prof. Fitch and Prof. Bugnyar) on research into cognition and communication in birds. It is located on the Haidlhof estate at the Teaching and Research Farm (LFG) of the University of Veterinary Medicine, Vienna near Bad Vöslau. In addition to big aviaries for corvids and keas (together more than 1200 m²), this research station is equipped with a multifunctional wooden building for behavioral and communicative tests, as well as with a bioacoustics lab with x-ray video (in the estate). Several well-known scientists visited the research station in 2012: Prof. Onur Güntürkün (University of Bochum), Prof. Christine Nicol (University of Bristol), Prof. Alex Kacelnik (University of Oxford), Prof. Shigeru Watanabe (Keio University, Tokyo) und Prof. Ronald Noe (University of Strasbourg).

See also cogbio.univie.ac.at/haidlhof

Wolf Science Center

The scientific association Wolfsforschungszentrum was founded in 2008 by Univ.Ass. Dr. Zsófia Virányi and Univ.Ass. Dr. Friederike Range, both from the Messerli Research Institute, and Univ.Prof. Dr. Kurt Kotrschal from the University of Vienna. It is part of Wildlife Park Ernstbrunn. Wolves and dogs are raised in the same way and kept in packs. Together with the wolf puppies that were bred in 2012, there are 15 wolves and 13 dogs at present. The Wolf Science Center is aiming to scientifically analyze canine behavior and cognition. It cooperates with Vetmeduni Vienna and the University of Vienna. The latest research project, an ERC Starting Grant, will focus on analyzing the principles of cooperation.

See also www.wolfscience.at



Visitors at the Research Station Haidlhof

Coordinating office for dog trainers in accordance with animal welfare

New rules for dog training were developed, combining new regulations and the quality seal “Dog trainer in accordance with animal welfare”, following consistent quality criteria in terms of animal welfare. The Messerli Research Institute was commissioned by the Federal Ministry of Health to implement the new regulations. These take into account that the focus of the University of Veterinary Medicine, Vienna, which is on the animal and on its well-being and needs in particular. The coordinating office provides guidelines based on scientific animal welfare.

The office’s task is to deepen and promote dog-trainer knowledge in Austria. Knowledge about the behavior and needs of dogs is vital to guide dog breeders.

Cooperation with our partner universities

University of Veterinary Medicine, Vienna

- Institut of Medical Biochemistry (ao.Univ. Prof. Dr. E. Möstl)
- Institute of Virology (ao.Univ.Prof. Dr. N. Nowotny)
- Unit of Physiology and Biophysics (ao. Univ.Prof. Dr. G. Schaubberger, Mag. Dr. A. Schmalwieser)
- Institute of Pharmakology und Toxikology (Univ.Prof. Dr. V. Sexl)
- Clinical Unit of Avian and Reptile Medicine (Dr. A.-C. Häbich, Univ.Prof. Dr. Z. Knotek)
- Konrad Lorenz Institute of Ethology (Dr. M. Griggio, Univ.Prof. Dr. H. Winkler)
- Clinical Unit of Internal Medicine Small Animals (Dr. B. Litschauer, Dr. L. Panakova, o.Univ.Prof. Dr. J. Thalhammer, Dr. M. Willmann)
- VetCore (Dr. M. Glösmann, ao.Univ.Prof. Dieter Klein, ao.Univ.Prof. DI Dr. E. Razzazi-Fazeli)
- Institute of Anatomy, Histology und Embryology (ao.Univ.Prof. Dr. G. Forstenpointner)

University of Vienna

- Department of Cognitive Biology (Priv. Doz. U. Aust, Univ.Prof. Dr. T. Bugnyar, Univ.Prof. T. Fitch, PhD)
- Cognitive Science Platform (ao.Univ.Prof. Dr. M. Peschl et al.)
- Faculty of Psychology (Univ.-Prof. Dr. U. Ansorge, Nils Heise, MSc, Univ.Prof. Dr. C. Lamm, Univ.-Prof. Dr. H. Leder)
- Department of Behavioural Biology und Research Group Human-Animal Interactions (Univ.Prof. Dr. K. Kotrschal, Mag. Iris Schöberl)



- Department of Evolutionary Biology (ao. Univ.Prof. Dr. W. Hödl)
- Department of Pharmaceutical Technology and Biopharmaceutics (ao.Univ.Prof. Dr. F. Gabor)
- Institute of Philosophy (Univ.Prof. Dr. Angela Kallhoff)

Medical University of Vienna

- Center for Medical Physics and Biomedical Engineering (ao.Univ.Prof. Dr. E. Moser, Prof. Dr. C. Windischberger)
- Department of Pathophysiology and Allergy Research (Univ.Prof. Dr. B. Bohle, Univ.Prof. Dr. H. Breiteneder, Prof. Dr. K. Hoffmann-Sommergruber, ao.Univ.Prof. Dr. P. Pietschmann, Univ.Prof. Dr. R. Valenta, Prof. Dr. S. Vrtala)
- Department of Paediatrics and Adolescent Medicine (Dr. S. Diesner, PhD, ao.Univ. Prof. Dr. E. Förster-Waldl, o.Univ.Prof. Dr. A. Pollak, ao.Univ.Prof. Dr. Z. Szépfalusi)
- Institute of Specific Prophylaxis und Tropical Medicine (Univ.Prof. Dr. U. Wiedermann-Schmidt, PhD)
- Institute for Environmental Health (ao.Univ. Prof. Dr. M. Kundi)
- Clinical Institute of Pathology (Ass.Prof. Dr. B. Hantusch, ao.Univ.Prof. Dr. R. Horvat, o.Univ.Prof. Dr. D. Kerjaschki, ao.Univ.Prof. Dr. F. Wrba)
- Department of Dermatology (Ass.Prof. Dr. T. Kinaciyan, ao.Univ.Prof. Dr. T. Kopp, ao.Univ.Prof. Dr. H. Maier, Univ.Prof. Dr. H. Pehamberger)
- Department of Medicine I (ao.Univ.Prof. Dr. M. Krainer, ao.Univ.Prof. Dr. P. Valent, Univ.Prof. Dr. Ch. Zielinski)
- Department of Medicine III (Dr. R. Brunner, ao.Univ.Prof. Dr. H. Vogelsang)

- Department of Surgery (ao.Univ.Prof. Dr. M. Bergmann)
- Department of Radiotherapy (ao.Univ.Prof. Dr. E. Selzer)
- Clinical Department of Laboratory Medicine (Ass.Prof. DDr. H. Esterbauer, Univ. Prof. Dr. Ch. Mannhalter)

Further national partners

- Ce-M-M Research Center for Molecular Medicine of the Austrian Academy of Science (Dr. Ch. J. Binder, Dr. S. Knapp)
- Karl Franzens University of Graz, Institute of Pharmaceutical Sciences (Univ.Prof. Dr. A. Zimmer)
- Karl Franzens Universität Graz, Institute of Molecular Biosciences, (ao.Univ.Prof. Dr. W. Keller)
- Medical University of Graz, Institute of Biophysics (Univ.Ass. Dr. R. Prass)
- University of Salzburg, Department of Molecular Biology (Dr. G. Achatz-Straussberger)
- Catholic-Theological Private University Linz, Institute of Moral Theology (Univ. Prof. Dr. M. Rosenberger)

Further international partners (selection):

- Agricultural University, Tokyo, Japan (Prof. H. Matsuda, Prof. A. Tanaka)
- Canterbury Christchurch University, New Zealand (Prof. R. Jackson, Dr. X. Nelson, Dr. S. Parsons, A. Greer, R. Schwing)
- Centro de Biotecnología y Genómica de plantas, Madrid, Spain (Prof. Araceli Diaz Perales)
- Charité Universitätsmedizin, Department of Dermatology, Venerology and Allergology, Berlin, Germany (Prof. T. Zuberbier)
- Christian Albrechts Universität zu Kiel, Zoological Institute, Kiel, Germany (Prof. T. Röder)
- Duke University, USA (Prof. B. Hare)
- Eötvös Loránd University, Budapest, Hungary (Prof. A. Miklósi)
- E.T.S. Ingenieros Agrónomos, UPM, Madrid Unidad de Bioquímica, Departamento de Biotecnología, Madrid, Spain (Prof. A. Diaz-Perales, PhD)
- European Science Foundation (ESF) “Comparative Cognition” (CompCog) (www.compcog.org) (29 leading research groups from 11 European countries)
- Forschungszentrum Borstel, Germany (Prof. Dr. H. Fehrenbach)
- Harvard Medical School, Children’s University Hospital Boston, USA (Prof. E. Fiebiger)
- Institut Pasteur de Lille, France (Prof. M. Capron)
- Institut Technik-Theologie-Naturwissenschaften at Ludwig-Maximilians-Universität München, Munich, Germany
- Instituto de Investigaciones Medicas-CONICET, Buenos Aires, Argentina (Prof. M. Bentosela)
- Istituto Dermopatico dell’Immacolata, Centro Allergologia Molecolare, Rome, Italy (Dr. Adriano Mari)
- Istituto di Scienze e Tecnologie della Cognizione, CNR, Rome, Italy (Prof. E. Visalberghi)
- Katholieke Universiteit Leuven, Biomedische Wetenschappen, Leuven, Belgium (Prof. J. M. Saint-Remy)
- Keio University, Tokyo, Japan (Prof. S. Watanabe, Dr. H. Miyata)
- King’s College London, Randall Division of Cell & Molecular Biophysics, London, Great Britain (Prof. H. J. Gould, A. J. Bevil)
- King’s College London, St John’s Institute of Dermatology, London, Great Britain (Dr. S. N. Karagiannis)
- Københavns Universitet, Gentofte Hospital, Copenhagen, Denmark (Prof. L. K. Poulsen)
- Monash University, Department of Immunology, Melbourne, Australia (Prof. R. E. O’Hehir)
- Philipps-Universität Marburg, Biomedizinisches Forschungszentrum, Marburg, Germany (Prof. H. Renz und Dr. H. Garn)
- Servicio de Alergia, IIS-Fundación Jiménez Díaz, Madrid, Spain (Prof. J. Custaz)
- Stanford University, School of Medicine, Department of Pathology, Stanford, USA (Prof. S. J. Galli)
- University of Auckland, Department of Psychology, Auckland, New Zealand (Prof. R. Gray)
- University of California, David Geffen School of Medicine and Jonsson Comprehensive Cancer Center, Los Angeles, USA (Prof. M. Penichet)



- University of Cincinnati, Cincinnati Children's Hospital, Cincinnati, USA (Prof. F. Finkelmann)
- Universiteit Gent, Ghent, Belgium (Prof. C. Bachert, Prof. M. Brass)
- Universitätsklinikum Giessen und Marburg, Institut für Labormedizin und Pathobiochemie, Molekulare Diagnostik, Germany (Prof. H. Renz)
- Universität Hamburg, Institut für Biochemistry and Molekular Biology, Hamburg, Germany (Prof. E. Spillner)
- Universitätsklinikum Hamburg-Eppendorf, Dermatology and Venerology department and clinic, Hamburg, Germany (Prof. J. Brandner)
- Universität Hohenheim, Institute of Nutritional Medicine, Hohenheim, Germany (Prof. S. Bischoff)
- Universität zu Lübeck, Institute of Anatomy, Lübeck, Germany (Dr. P. König)
- Università degli studi di Milano, Milan, Italy (Prof. E. Prato-Previde and Dr. S. Marshall-Pescini)
- University of Minnesota, USA (Prof. D. Mech)
- University of Nebraska, Lincoln, USA (M. Pesendorfer)
- University of Oxford, Great Britain (Prof. C. Heyes, Prof. A. Kacelnik, Dr. A. v. Bayern)
- Università degli studi di Parma, Italy (Prof. Ferrari, Dr S. Cafazzo)
- Universitair Medisch Centrum Utrecht, Department of Dermatology/Allergology, Utrecht, Netherlands, (Prof. E. F. Knol)
- Wolf Park, Indiana, USA (Prof. E. Klinghammer)



VR Doblhoff with the guests from Tokyo, Prof. Matsuda and Prof. Tanaka, and Erika Jensen-Jarolim

Cooperation with networks and societies:

ESF Network Program „Comparative Cognition“

The program comprises 29 leading research groups from 11 European countries and is funded by the European Science foundation (ESF) (see also www.compcog.org). Univ.Prof. Dr. Ludwig Huber is the Austrian representative in the Steering Committee, Univ. Ass. Dr. Zsófia Virányi is the General Manager.

FITT – Forschungsinitiative Tiertheorien

On February 27, 2012, FITT (Research Initiative Animal Theories) was founded at the University of Constance. The aim of this initiative is to analyze the cultural and social principles of human-animal interaction systematically and further develop theoretical approaches and methods in interdisciplinary discourse. Univ.Prof. Dr. Herwig Grimm was a founding member of the initiative. There was a meeting at the Messerli Research Institute in October 2012, focusing on methodological self-assurance in the scientific disciplines in an interdisciplinary dialogue.

Stiftung Bündnis Mensch & Tier (Munich)

Stiftung Bündnis Mensch & Tier (Foundation Alliance Humans & Animals) was founded in 2009. The foundation advocates species-specific animal husbandry and the respectful treatment of animals. The aim is to improve interaction between humans and animals in a sustainable way. The promotion of interdisciplinary cooperation in the Interdisciplinary Work Group Human-Animal Relationship is essential. Univ.Prof. Dr. Herwig Grimm is a member of this work group.

International Conference of Doctoral Students on Human-Animal Interactions

Young scientists got a discussion and exchange platform at the 2nd International Conference of Doctoral Students on Human-Animal Interaction at Schönwag Estate from March 23 to 25, 2012. The conference was hosted by Stiftung Bündnis Mensch & Tier and the Messerli Research Institute, chaired by Dr. Carola Otterstedt (Stiftung Bündnis Mensch & Tier) and Univ.Prof. Dr. Herwig Grimm. The moral theologian Univ.Prof. Dr. Michael Rosenberger was an important guest at the event.

Austrian Nano Initiative

This national initiative “Research and Technology Development in Project clusters” (RTD-clusters) is funded by the Federal Ministry for Transport, Innovation and Technology (bmvit) and by the Austrian Research Promotion Agency (FFG). Nano-Health is a RTD project aiming to develop a “platform” for new and multifunctional nanoparticles. These multifunctional nanoparticles are used for different purposes in healthcare. They will also be available for use in veterinary medicine in the future. Prov.Do. Dr. Isabella Pali and Univ.Prof. Dr. Erika Jensen-Jarolim are part of this initiative, as leaders of stand-alone projects. (www.bionanonet.at)



Cooperation with associations

Association “Tierschutz macht Schule”

“Tierschutz macht Schule” is committed to improving living conditions for pets, livestock, test and wild animals in our society. The animal, as a fellow being, should be treated and kept according to its needs. The Unit of Ethics and Human-Animal Studies and the association cooperate in knowledge transfer, animal welfare communication and training of teachers. Univ.Prof. Dr. Herwig Grimm is a member of the scientific advisory board.

Association “Red Paw – Cancer Research for Animals”

The association has supported projects in the field of comparative medicine in recent years, focusing on comparative oncology. This fits to the Messerli idea. The aim is to also allow animal patients to benefit from findings in modern medicine. The association was awarded the Austrian Donation Seal of Quality No. 05817 (Spendengütesiegel) by the Austrian Chamber of Accountants and Auditors, which was extended in 2012. One milestone was the move from the General Hospital Vienna (AKH) to the Unit of Comparative Cognition at the Messerli Research Institute. The close link between the association and the Unit of Comparative Medicine was stressed in 2012 by several Comparative Medicine Seminars and two Mini-Symposia (p. 45). The association could give three Science Communication Awards to young scientists for the first time after careful review: Judit Fazekas, Bettina Huber and Abhishek Aggarwal.



KREBSFORSCHUNG FÜR DAS TIER

Guest researchers at the Messerli Research Institute

- Gesa Bindke (Germany, Erasmus student): AAL as a target molecule to vaccinate human and dog patients: Comparative allergy
- Dr. Simona Cafazzo (Italy): group structure of wolves
- Giulia Cimarelli (Università degli studi di Firenze, Florence, Italy): Do dogs follow human pointing to a certain location or to a certain object?
- Cristina Gomez Casado (Universidad Carlos III de Madrid, Spain, Spanish Scholarships): Plant food allergens in comparative medicine
- Orsolya Kanizsár (Research Centre for Natural Sciences, Hungarian Academy of Sciences, Hungary): Investigation of the genetic associations of the bonds between dogs and their owners
- Anna Moskovskich, Sweden/Lithuania, Erasmus student): Establishment of behavioural studies of food allergy avoidance in comparative medicine
- Kumiko Oida (Agricultural University Tokyo, Japanese exchange program): Comparative medicine: The canine mast cell in allergy and cancer
- Raoul Schwing (New Zealand): Acoustic communication in keas
- Darlene Sobus (Hanover College, Indiana, USA): Learning in a social interspecific communication task; is there an age effect in dogs?
- Dóra Szabó (Eötvös Loránd University Budapest, Hungary): Testing the reproducibility of behavioural tests in dogs in three European countries
- Elena Zancchi (Milan, Italy): Referential communication in dogs



2012

Society & Public Relations

The Messerli Research Institute is committed to continuous knowledge transfer to the public sphere and politics, in line with its principles as defined in its mission statement. The institute promotes discussion and debate with selected multipliers and cooperation partners. Such partners do not only include international academic research colleagues, but also non-university research institutes, vets, medical doctors, associations, companies, societies and schools. The institute's experts are available for social dialogue and scientific policy consultancy to promote a scientifically based and ethically justifiable interaction with animals. The following criteria are applied:

■ Knowledge transfer in scientific independence

The most important criterion in favor of or against cooperation with a research institute is to ensure scientific independence. This not only means that the work at the Messerli Research Institute has to meet good scientific practice standards, but also provide knowledge as scientific expertise in social or political debates.

■ Distance from sociopolitical positioning

Credibility is a very valuable – maybe the most valuable – asset for a research institute, especially if it is working in a field as controversial as human-animal interaction. This asset must not be put at risk. Therefore, the members of the institute, in particular the heads of the units, try to keep a distance from sociopolitical positioning. The members of the institute support the process of opinion formation in society, not single positions, in line with the institute's principles. However, the knowledge gained and published at the institute will, of course, be used and is meant to be used by people in society and in politics.



Presentations

Univ.Prof. Dr. Ludwig Huber:

- *Die Kognitionsbiologie und ihre Rolle für den Tierschutz und die Mensch-Tier-Beziehung.* Gymnasium und Realgymnasium Sachsenbrunn, Schulstiftung der Erzdiözese Wien. Kirchberg am Wechsel, February 2, 2012
- *Was ist der Mensch? Zur schwierigen Frage der Interaktion von biologischer und kultureller Evolution.* Philosophical-theological-biological seminar, University of Vienna. Vienna, March 22, 2012, and October 18, 2012
- *Der Beitrag der Kognitionsbiologie zu Fragen der Tierethik und der Mensch-Tier-Beziehung.* Inaugural lecture, opening of the Messerli Reserach Institute, Vetmeduni Vienna. Vienna, March 29, 2012
- *Vergleichende Kognitionsforschung als Beitrag zum Verständnis der Mensch-Tier-Beziehung.* 3rd ÖTT (Platform of Austrian Vets for Animal Welfare) Conference, Vetmeduni Vienna. Vienna, May, 10, 2012
- *Die Vergleichende Kognitionsforschung am Messerli Forschungsinstitut.* Workgroup Animal Welfare, Austrian Parliament. Vienna, June 4, 2012
- *Der Beitrag der Kognitionsbiologie zu Fragen der Tierethik und der Mensch-Tier-Beziehung.* Workgroup Human-Animal Relationship, Vetmeduni Vienna. Vienna, June 14, 2012
- *Clever Dogs,* Eröffnung des Clever Dog Labs, Vetmeduni Vienna. Vienna, September 3, 2012
- *Früchte vom Baum der Erkenntnis. Zur Evolution von kognitiven und moralanalogen Fähigkeiten.* Vortragsserie Blickpunkt: Intelligenz, University of Salzburg. Salzburg, November 14, 2012

Univ.Prof. Dr. Erika Jensen-Jarolim:

- *Von Chancen und Limitationen der Komparativen Medizin.* Workgroup Human-Animal Relationship, Vetmeduni Vienna. Vienna, April 19, 2012
- *Eine Medizin für Mensch und Tier.* Animal week for kids, Vetmeduni Vienna, June 2, 2012

Univ.Prof. Dr. Herwig Grimm:

- *Ethik in der Nutztierhaltung. Wer trägt die Verantwortung?* DLG Conference 2012 (January 10-12, 2012). Berlin, Germany, January 10, 2012
- *Tierethik jenseits von Eden: Ideale Ansprüche in einer nicht idealen Welt.* 3rd ÖTT (Platform of Austrian Vets for Animal Welfare) Conference, Vetmeduni Vienna. Vienna, May 10, 2012
- *Veterinärmedizin ohne Gewissen? Zur ethischen Verantwortung der TierärztInnen im Seuchenfall.* Public Health Pool (PHP) – Austrian Association of Veterinary Public Health, Vetmeduni Vienna. Vienna, June 5, 2012
- *Professional Ethics für Amtstierärztinnen und Amtstierärzte.* 12th Conference ÖVA (Austrian society of veterinary officers) (June 14-15, 2012). Melk, June 14, 2012
- *Ethik in der Veterinärmedizin.* Workshop of the Veterinary Directory. Salzburg, October 20, 2012
- *LehrerInnenfortbildung „Tierschutz macht Schule“: Ethics and the Human-Animal Relationship.* Linz, November 30, 2012



Erika Jensen-Jarolim
at Kindertierwoche



Univ.-Ass. Dr. Zsófia Virányi

- *From dog cognition to dog-human communication and co-working.* Visit of the association “Tiere Helfen Leben” at the Clever Dog Lab. Vienna, June 10, 2012
- *Professionalisierung der Tiergestützte Therapie aus Sicht des Tieres.* 6th international TAT Symposium (October 19-20, 2012). Vienna, October 20, 2012
- *On the scientific base of human-dog cooperation: from pet dogs to service dogs.* Highlights in the human-animal relationship: A series of lectures at the University of Vienna (2012/13). Vienna, November 23, 2012

Mag. Stefanie Riemer

- *Hund – Mensch – Katze: Kommunikation über Artgrenzen hinweg.* Raiffeisen Forum Wien. Vienna, October 9, 2012

Media Highlights

Three events received a high level of media coverage in 2012:

- Reputable media, among them Der Standard und oe1.orf.at, covered the **opening of the Messerli Research Institute** (p. 24).
- There were reports about the **opening of the Clever Dog Lab** (p. 25) by APA, Die Presse, Salzburger Nachrichten, Wiener Zeitung.
- A **panel discussion** on November 7, 2012, **on the occasion of the new Animal Experiments Act** was hosted by the Federal Ministry of Science and Research and Vetemeduni Vienna. It received broad media coverage. Among others, there were reports by Der Standard, Die Presse and APA.

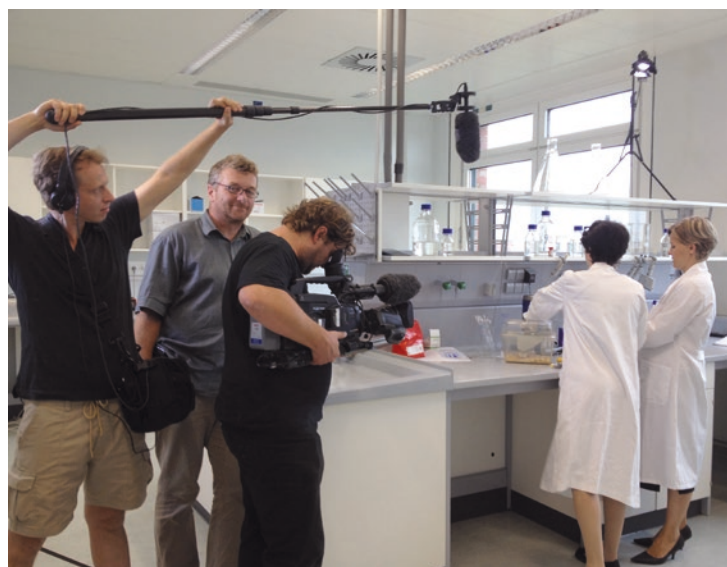
The **Wolf Science Center** in Ernstbrunn was also the subject of media reports (selection):

- derstandard.at, May 1, 2012: “*Der schlaue Wolf fängt den Käse*”
- Der Standard, June, 13, 2012: “*Zu Wolfswelpen kann man nicht Nein sagen*”
- Geo, July 2012: “*Liebesobjekt*”
- Forschen & Entdecken, August 2012: “*Folgen Hunde und Wölfe Blickrichtung und Gesten anderer?*”

The **ERC Starting Grants**, awarded to Univ. Ass. Dr. Friederike Range, raised public awareness (selection):

- derstandard.at, September 3, 2012: *“Kognitionsbiologin Friederike Range erhält ERC Starting Grant“*
- science.apa.at, September 3, 2012: *“ERC Starting Grant für Kognitionsbiologin Range“*
- Wiener Zeitung, September 5, 2012: *“Spitzenforscher, die harte Nüsse knacken“*
- salzburg.com (Salzburger Nachrichten), September 5, 2012: *“Friederike Range, Kognitionsbiologin“*
- vet journal, November 13, 2012: *“Kognitionsbiologin Friederike Range erhält ERC Starting Grant“*

A film team from ORF filmed in the labs at the Unit of Comparative Cognition for the **ORF documentary “Die Akte Aluminium”**, a film by Bert Ehgartner (broadcast on November 21, 2012).



Film team of ORF in the Comparative Medicine Lab

The Messerli House

There were significant changes in the institute's facilities in 2012. After a year of renovation, the team moved to the Messerli House on March 1, 2012.

The building with its yellow façade and special location is owned by Österreichisches Siedlungswerk. The former administration and residential building of the Vienna rope factory was renovated and expanded by adding two extra floors. The new floors are now used as residential areas for guest scientists and students. The old part of the building is used as the premises of the Messerli Research Institute. The central facilities (offices, common room) are on the raised ground floor. In the basement there is the seminar room, the library, a study and a conference room.



Opening of the library

The institute's library was opened in December 2012 after intensive preparations, such as developing the classification scheme and planning all necessary alterations. It is an interdisciplinary library maintained by all three units of the Messerli Research Institute. Univ. Prof. Dr. Herwig Grimm and Univ.Ass. Samuel Camenzind, MA, from the Unit of Ethics and Human-Animal Studies and the university library staff were the main actors in the development of the library.

Lab openings

The Clever Dog Lab started its work at its new facilities at the campus and moved there completely in December, clearing the old lab in Nussgasse (p. 25).



Opening of the library together with the university library staff

Appendix: Publications

2012

Comparative Cognition

Gajdon, G. K./Ortner, T. M./Wolf, C. C./Huber, L. (2012): How to solve a mechanical problem: the relevance of visible and unobservable functionality for kea. *Animal Cognition*, Epub: Dec. 26, 2012.

Horn, L./Range, F./Huber, L. (2012): Dogs' attention towards humans depends on their relationship, not only on social familiarity. *Animal Cognition*, Epub: Dec. 6, 2012.

Horn, L./Virányi, Z./Miklósi, A./Huber, L./Range, F. (2012): Domestic dogs (*Canis familiaris*) flexibly adjust their human-directed behavior to the actions of their human partners in a problem situation. *Animal Cognition*, 15(1), 57-71.

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