15 Scientists:
Longevity in Switzerland

Alejandro Ocampo

Position: Assistant Professor, Department of Pharmacology and Toxicology, University of Lausanne
Research Area: Cellular Reprogramming, Stem Cells

Alejandro Ocampo obtained his PhD in 2012 from the University of Miami for his work under the supervision of Antoni Barrientos on the role of mitochondria in neurodegenerative proteinopathies and aging. Between 2013 and 2017, he performed a post-doctoral training with Juan Carlos Izpisua-Belmonte at the Salk Institute for Biological Studies in La Jolla, California. During his post-doctoral training at the Salk, he developed a novel technology to prevent the transmission of mitochondrial diseases and demonstrated the amelioration of age-associated hallmarks by partial cellular reprogramming. In August 2018, he joined the Department of Pharmacology and Toxicology as Assistant Professor and will continue his work on aging, cellular reprogramming and mitochondrial diseases.

His group conducts research in the areas of epigenetics, stem cells, aging and mitochondrial diseases with the goal of elucidating disease mechanisms and develop novel therapeutic approaches to improve the quality of life of patients.

UNIL | Université de Lausanne

Alexander Eggel

Position: Dr., Department of Rheumatology, Immunology and Allergology, University of Bern
Research Area: Immunologic Plasticity in Aging

The Eggel Lab is affiliated with the Department for BioMedical Research (DBMR) at the University of Bern and the Department of RIA at the University Hospital Bern in Switzerland. Their major research interests focus on the biologic mechanisms underlying both beneficial as well as pathogenic type 2 immune responses. On the one hand they are trying to get a better understanding on how allergies evolve and to develop alternative treatment approaches directly interfering with the allergic cascade. On the other hand they are investigating the development of age-related disorders and how they are linked to alterations in type 2 immune responses.

UNIVERSITÄT BERN

Anna Jazwinska Müller

Position: Professor, Department of Biology, Université de Fribourg
Research Area: Regeneration

Anna Jazwinska Müller currently works at the Université de Fribourg. She reads courses in cell biology and mechanisms of regeneration. Anna also works in a project “Biomechanics and ray patterning during epimorphic fin regeneration”.

UNI
FR

UNIVERSITÉ DE FRIBOURG
UNIVERSITÄT FREIBURG

Brigitte Galliot

Position: Professor, Department of Genetics and Evolution, University of Geneva
Research Area: Homeostasis & Regeneration, Cellular Remodelling

After earning her medical doctorate in her native Paris, Brigitte Galliot began her professional career at Strasbourg University Hospital starting in 1982, first as an intern in Pediatrics and later in Biochemistry. At the same time, she undertook studies in Life Sciences that led to a second doctorate, in Molecular Biology, with a thesis on the architect genes involved in embryonic development. Starting in 1989, she worked in Heidelberg, Germany, first as a postdoctoral researcher and then as a project leader. There she became interested in the hydra, a curious organism found in local ponds, whose astonishing capacities for regeneration were discovered in the 18th century by the Geneva mathematician Abraham Trembley.

She joined the University of Geneva in 1993, creating her research group in the Department of Genetics & Evolution at the Faculty of Science thanks to a Marie Heim-Vögtlin grant from the Swiss National Science Foundation (SNSF). Named Associate Professor in 2009, in July 2014 she became the first woman to join the Dean's Office of the Faculty of Science, serving as associate dean for four years. In May 2018 she was named Vice-Rector of the University of Geneva, effective August 1st.

UNIVERSITÉ DE GENÈVE

Christoph Handschin

Position: Professor in Pharmacology, Biozentrum, University of Basel
Research Area: Exercise, Muscle and PGC-1alpha

Handschin studied biology at the University of Basel. He completed his doctorate in biochemistry in Urs A. Meyer's group at the Biozentrum. From 2002 to 2006, Handschin carried out research at the Dana-Farber Cancer Institute and the Harvard Medical School, before being appointed as an assistant professor of physiology and an SNSF professor to the University of Zurich in 2006. In 2009 he returned to the Biozentrum, where he works in research and teaching as a professor of pharmacology.

Handschin studies the molecular processes underlying trained or diseased muscles. Central to his research is the protein PGC-1α that has a significant influence on metabolism and muscle function. Handschin demonstrated that PGC-1 α centrally steers the adaptive mechanisms of the muscle during endurance training. PGC-1α increases the endurance capacity of the muscle by among other things regulating the formation and degradation of lactate. Furthermore, Handschin discovered that an elevated PGC-1α production manifests a therapeutic effect on muscle wasting and dystrophies. His findings provide concrete approaches for the treatment of muscle diseases and age-related muscle wasting. Moreover, the insights gained on the regulation of heme biosynthesis were highly relevant for the understanding of porphyria.

University of Basel

Claudio De Virgilio

Position: Professor, Department of Biology, Université de Fribourg
Research Area: Quiescence & Lifespan

Claudio De Virgilio currently works at the Department Biology, Université de Fribourg. Claudio does research in Cell Biology. His current project is “Nutrient signaling and control of quiescence in yeast”.

All living cells are capable of exiting the normal cell cycle (proliferating state) and entering an alternative (resting) state termed quiescence or G0. The available body of data, nevertheless, indicates that disruption of G0-entry/exit control mechanisms is often associated with either cellular transformation, or dramatically reduced life span. In this context, Claudio and his team study the mechanisms controlling entry into, survival in, and exit from quiescence in the unicellular, eukaryotic model organism S. cerevisiae. So far, several studies (including researches of his group) have uncovered that the nutrient-regulated hub TORC1 orchestrates both entry into and exit from G0. The research of De Virgilio Group is therefore specifically focused on the elucidation of both the mechanisms that regulate TORC1 activity and the nature of the effectors that are regulated by TORC1.

UNI
FR

UNIVERSITÉ DE FRIBOURG
UNIVERSITÄT FREIBURG

Collin Ewald

Position: Professor, Department of Health Sciences and Technology, ETH Zurich
Research Area: Extracellular Matrix Regeneration, Molecular Biology of Aging

Collin Ewald is a Professor at the Department of Health Sciences and Technology, ETH Zurich. He is in charge of Lab which provides basic research and systems-level approaches to develop novel strategies to treat age-related pathologies.

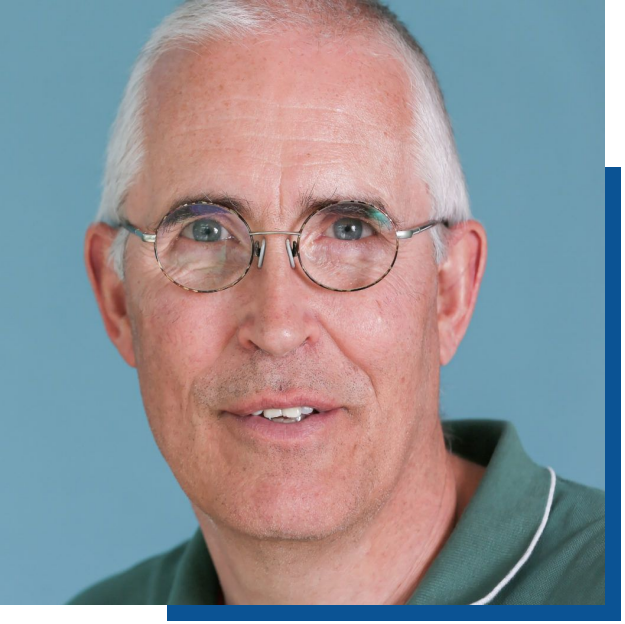
The aim of the Ewaldlab`s project is to determine the molecular mechanism(s) that prolong health during aging, using the nematode C. elegans, in order to develop novel strategies to treat age-related pathologies. Aging is the major risk factor for developing diseases such as cancer, diabetes, and neurodegenerative disorders. Their recent work has shown that many health- and longevity-promoting interventions re-activate the expression of extracellular matrix (ECM) genes during aging. This ECM enhancement is required and sufficient for extending the lifespan of C. elegans. One fascinating facet they are also currently investigating is the role of the ECM with the accumulation of extracellular protein aggregates associated with Alzheimer’s disease and other neurodegenerative diseases.

Joachim Lingner

Position: Professor, Institute of Biochemistry, École polytechnique fédérale de Lausanne (EPFL)
Research Area: Telomeres

Joachim Lingner is a PhD at the Biocenter, University of Basel 1989-1992 (Supervisor: Walter Keller). Postdoc at the Howard Hughes Medical Institute, University of Colorado at Boulder 1993-1997 (Supervisor: Thomas Cech). Junior group leader at ISREC 1997-2001. Senior group leader at ISREC since 2002. Associate Professor at EPFL 2005-2008. Full Professor at EPFL since 2009. Honors: START-fellowship from the Swiss National Science Foundation in 1997; Friedrich Miescher Prize from the Swiss Society of Biochemistry in 2002; EMBO member in 2005; ERC advanced investigator grant in 2008.

ÉCOLE POLYTECHNIQUE
FÉDÉRALE DE LAUSANNE



Johan Auwerx

Position: Professor, Laboratory for Integrated and Systems Physiology, École polytechnique fédérale de Lausanne (EPFL)
Research Area: Mitochondria, Proteostasis, Aging

Johan Auwerx is Professor at the École Polytechnique Fédérale in Lausanne, Switzerland, where he directs the Laboratory for Integrated and Systems Physiology (LISP). Dr. Auwerx has been using molecular physiology and systems genetics to understand metabolism in health, aging and disease. Much of his work focused on understanding how diet, exercise and hormones control metabolism through changing the expression of genes by altering the activity of transcription factors and their associated cofactors.

Johan Auwerx was elected as a member of EMBO in 2003 and is the recipient of a dozen of international scientific prizes, including the Danone International Nutrition Award, the Oskar Minkowski Prize, the Morgagni Gold Medal, and the Marcel Benoist Prize. His work is highly cited by his peers with a h-factor of over 120. He is an editorial board member of several journals, including Cell Metabolism, Molecular Systems Biology, The EMBO Journal, The Journal of Cell Biology, Cell, and Science. Dr. Auwerx co-founded a handful of biotech companies, including Carex, PhytoDia, and most recently Mitobridge, and has served on several scientific advisory boards.

ÉCOLE POLYTECHNIQUE
FÉDÉRALE DE LAUSANNE

Matthias Altmeyer

Position: Dr., Department of Molecular Mechanisms of Disease, University of Zurich
Research Area: Genome Instability in Cancer and Aging

As part of an active scientific community that studies the DNA damage response (DDR) and its impact on cancer and aging, research in the lab of Matthias Altmeyer is aimed at elucidating cellular mechanisms of genome integrity maintenance and their deregulation in human disease.

Michael Hall

Position: Professor, Biozentrum, University of Basel
Research Area: TOR Signaling

Michael Hall earned a Bachelor of Science in Zoology from the University of North Carolina at Chapel Hill in 1976, and a PhD in Molecular Genetics from Harvard University in 1981. Hall was a postdoctoral fellow at the Institut Pasteur in Paris and at the University of California, San Francisco. He was appointed an Assistant Professor at the Biozentrum of the University of Basel in 1987, and became a Full Professor in 1992. From 1995 to 1998 and from 2002 to 2009 he was head of the Division of Biochemistry, and from 2002 until 2009 was Deputy Director of the Biozentrum.

Hall is a pioneer in the fields of TOR signaling and cell growth control. In 1991, Michael N. Hall discovered a protein, which regulates cell growth, cell size and cell division in yeast cells. Since the function of this protein is inhibited by the substance rapamycin, Hall gave the growth regulator the name «Target of Rapamycin» or for short «TOR». TOR is a conserved protein kinase activated by growth factors, nutrients, and insulin. It is a central controller of cell growth and metabolism. TOR plays a key role in aging and the development of diseases such as cancer, obesity, Diabetes mellitus, and cardiovascular disease. Insights into TOR signaling pathways have been applied for new therapeutic strategies. Hall received the 2017 Albert Lasker Basic Medical Research Award.

University of Basel

Michael Ristow

Position: Professor, Department of Health Sciences and Technology, ETH Zurich
Research Area: Reactive Oxygen Species & Aging

He is interested in the biochemical and molecular basis of longevity — in particular the role played by mitochondria in lifespan regulation and prevention of metabolic diseases. Contrary to the widely re-iterated Free Radical Theory of Aging, he works in the first laboratory that shows that the health-promoting effects associated with low caloric intake, physical exercise and other lifespan-extending interventions like sirtuin signaling are caused by increased formation of Reactive Oxygen Species (ROS) within the mitochondria, causing a vaccination-like adaptive response that culminates in increased stress resistance and extended longevity, a process called mitohormesis.

ETH zürich

Simon Blanchoud

Position: Dr., Department of Biology, Université de Fribourg
Research Area: Whole-Body Regeneration

Simon Blanchoud currently works at the Unit of Zoology, Université de Fribourg. Simon does research in Algorithms, Computing in Mathematics, Natural Science, Engineering and Medicine and Programming Languages. Their current project is 'WBR in B. leachii'.

UNI
FR

UNIVERSITÉ DE FRIBOURG
UNIVERSITÄT FREIBURG

Thomas Flatt

Position: Professor, Department of Ecology and Evolution, University of Lausanne
Research Area: Evolution, Reproduction and Aging

The Flatt group studies the evolution and mechanisms of life history and aging, using Drosophilaas a model system. A major focus is on understanding the genomic basis of evolutionary changes in life history traits and lifespan in natural and evolved laboratory populations. Another focus is on the hormonal regulation of life history trade-offs (especially the trade-off between reproduction and lifespan) and the endocrine modulation of aging.

UNIL | Université de Lausanne

Yves Barral

Position: Professor, Institute of Biochemistry, ETH Zurich
Research Area: Cell Division and Aging in Yeast

Yves Barral has been Assistant Professor of Biochemistry at the ETH Zurich since August 1999 and Associate Professor since October 2005. Prof. Barral, whose parents are French, was born in Mexico on 7th December 1966. Prof. Barral studied Genetics and Biochemistry at the Ecole Normale Superieure in Paris, and completed his diploma work in Microbiology at The Pasteur Institute in 1989. Prof. Barral then started his Ph.D. studies on the genetic analysis of cell cycle control which he carried out at both the Commissariat à l'Energie Atomique (Saclay, France) and the Friedrich-Miescher Laboratory of the Max-Planck Institute (Tübingen, Germany). In December 1994 Prof. Barral obtained his Ph.D. from the Pierre and Marie Curie University in Paris. He then went on to work as a postdoctoral fellow and postdoctoral associate in the Department of Biology, Yale University (New Haven, USA) up until July 1999, focussing on the regulation of cellular morphogenesis during cell division.

At the ETH Prof. Barral will continue working on the coordination of the cytoskeleton and the cell cycle in yeast. He will also develop new genetic techniques to address related issues in the multicellular Nematode C.elegans.