



IEMNews



The participants of the first international Evolutionary Medicine Conference in Europe, July 30-August 1 2015, Zurich

The Institute of Evolutionary Medicine after one year

Dear Colleagues

It is my great pleasure to present the latest newsletter of the Institute of Evolutionary Medicine (IEM), our second circular since the IEM was founded roughly a year ago in Autumn 2014. Since then we have achieved quite a lot; certainly there is still much to do and we look enthusiastically towards the scientific future of the IEM.

Our first highlight was the formal opening reception of the IEM (in November 2014) with our highly respected UZH President Prof Michael Hengartner who gave a supportive address. We have since consolidated all administrative matters necessary to the establishment and operation of a new institute, and with the internal reorganization finished, our day-to-day operations run smoothly. Many people, including partners from UZH administration, helped us to achieve this. We were also able to get additional, much-needed space for offices and sample storage. In recent months we have invested in the acquisition of modern human dry and soft tissue

samples, which shall be curated and eventually used for scientific studies. Also, the development of a detailed concept for the future Medical Museum has kept us busy - a lot of planning and the development of theoretical and practical knowledge is necessary to be able to implement such a future landmark at the UZH.

Another major highlight was the first ever European conference on Evolutionary Medicine which we organized in July. It was an enormous success with ca. 150 participants (see picture above) from all over the world and a broad range of excellent talks, particularly focusing on the impact evolutionary medicine research and teaching has on clinical medicine. The main event was the outstanding lecture given by Prof Harald zur Hausen, Nobel Laureate in Medicine, who gave stunning insights into his ongoing research about environmental causes of cancer. In our scientific outlook, we have published already more than twenty papers during the last year. Additionally, the Swiss National Science Foundation awarded the IEM with

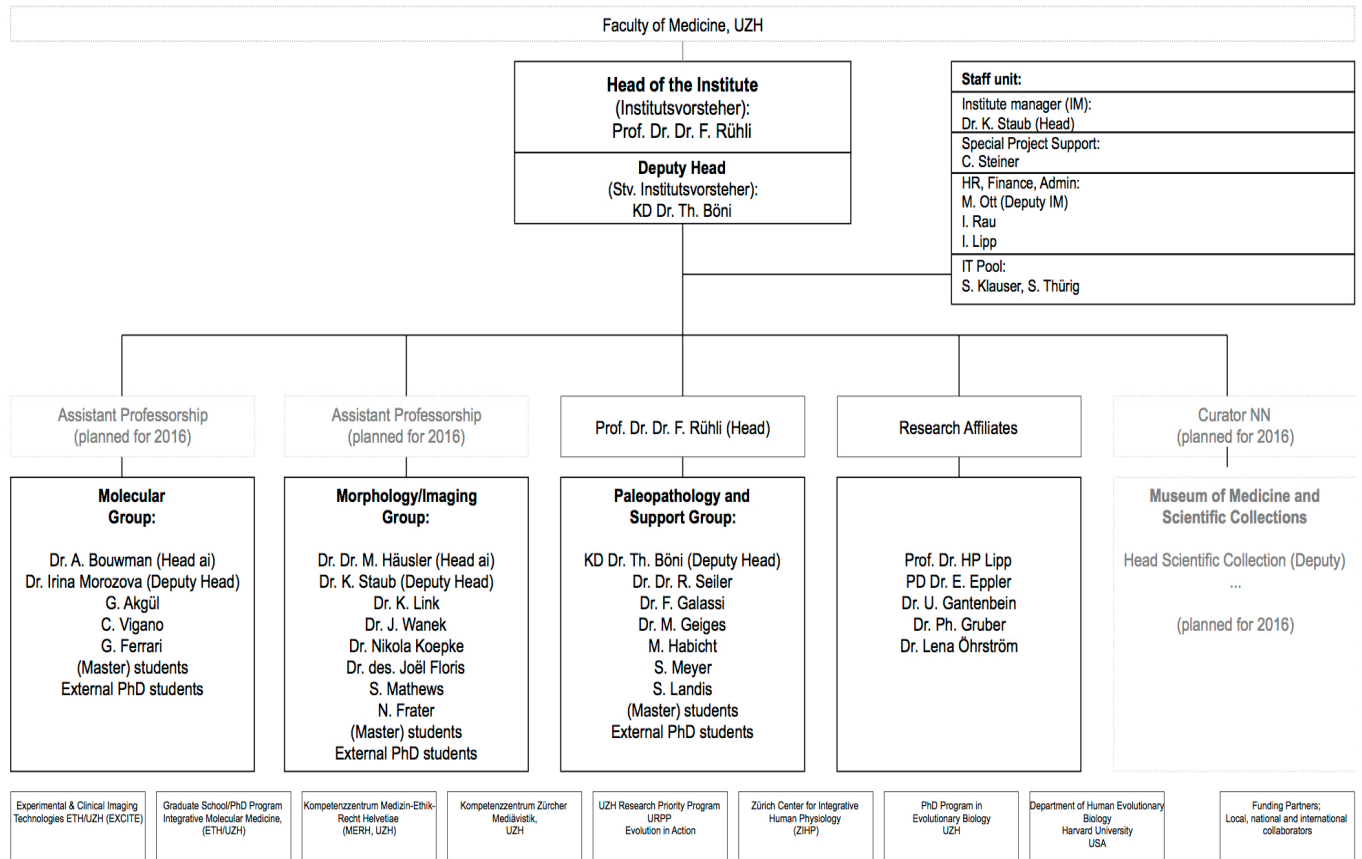
three sizeable grants. This remarkable success will help us to maintain the scientific momentum we have, particularly in the field of ancient mummy research. In addition, many at the IEM specialize in field work in this unique research area. Along with research we also expanded our teaching capacity and so are running regular seminars to promote the field of evolutionary medicine locally. We see a sharp increase in young students, particularly in Medicine, who wish to study for a master's or doctorate thesis at the IEM. In an internal anonymous evaluation, satisfied and happy IEM employees gave a very good overall score of 5.2/6! We really look forward to a bright future for the IEM and the growing field of evolutionary Medicine in general.

I would like to finish by thanking all of you in the name of the whole IEM team for your continued interest in our activities and we always look forward to any feedback from you.

Frank Rühli
Director of the IEM

IEM Organigram

Institute of Evolutionary Medicine (IEM) (as of Sept 2015)



Vision and Mission Statement

We are a leading international and globally connected research, teaching and service institute which is part of the medical faculty at the University of Zurich. We analyse ancient biological material and associated data to better understand modern human health issues and diseases. Due to specialist scientific expertise, excellent infrastructure and state-of-the-art methodologies, we are able to work on various interdisciplinary research questions in the context of the field of Evolutionary Medicine. Our core competencies include:

- In the area of morphology: Clinical Anatomy; Variability and adaptation of body morphology as a function of time (Microevolution), sex, robustness, time (Microevolution), socio-economic fac-

tors (etc.); Macroevolution of joint pathologies.

- In the area of imaging: application of modern imaging techniques (MRI, terahertz) on historical tissues; Radiological diagnosis of pathologies.

- In the area of ancient DNA: Co-evolution of diseases and the human genome (evolution of human pathogens, microbiome analyses etc.); Service for Archaeology/Historical Anthropology (paternity testing, sex determination).

- Maintaining a novel medical museum for the public and a medical history object collection for the scientific community.

- Ethical considerations for research on historical human tissues.

We will increase the recognition of the research field of Evolutionary Medicine and expand academic teaching of the subject within and outside the Faculty of Medicine. This will be of a sustainable value for our stakeholders at the University of Zurich, in the research community of evolutionary medicine and adjacent areas, to the economy and ultimately for society in general.

Words from a UZH collaborator



Prof. Dr. Philippe Della Casa
Dept. of Prehistoric Archaeology
Institute of Archaeology
University of Zurich

Frank Rühli and I established contact soon after the creation of the ZEM (now IEM) at the University of Zurich in 2010 around common interests in human conditions and cultural history. For both of us it seemed evident that prehistoric (non-literate) archaeology and evolutionary medicine should relate to each other, and that many important questions in human evolutionary history should be addressed in biological and cultural perspective.

We were lucky to find in the persons of Martin Häusler, member of the IEM with whom we had already cooperated earlier, and Rouven Turck who joined our team in 2012, two highly motivated fellow researchers willing to engage in interdisciplinary dialogue, and in particular to set up a framework for innovative teaching. The latter was not as easy as one could imagine, since there are quite notable differences in the way studies are organized between the various faculties – MedF, MNF, PhF – of the UZH.

However, student interest in topics such as bioarchaeology, human osteoarchaeology or, more recently, a specific module on the “human body as biography” is growing, and the teaching co-operation of our two institutes creates a new focus on biological anthropology and bioarchaeology at the UZH. We envision great potential for innovative research in the domains of palaeopathology, bio-visualization, aDNA and isotopic archaeology. Already, a joint paper based on a co-supervised BA thesis has had success, and others are on their way. We are extremely happy about this very valuable partnership, and are looking forward to new common research and teaching activities with the IEM.

Philippe Della Casa

Words from a new member of the IEM



Dr. med. Francesco Galassi
Paleopathology Group
Institute of Evolutionary Medicine
University of Zurich

I am a medical doctor by training and obtained my degree from the University of Bologna, Italy, with a thesis in clinical neurology. During my years in Italy, I also served as a tutor of human anatomy, at same time developing a great passion for the history and evolution of pathology.

While participating in research projects in the UK (Oxford University and Imperial College London), I started working extensively on retrospective diagnoses in historical characters, initially focusing on the limitations of the long-held diagnosis of epilepsy for Julius Caesar, and began pathographically deciphering elements of disease at the very heart of ancient myths.

Last September I had the privilege of joining this prestigious institute as a member of the Paleopathology research group, in order to study the morphology of disease in toto, from ancient mummies and ancient skeletons to old literary and pictorial sources. The first stage of my research here consists of a grand clinical re-assessment of ancient and early modern literatures and mythologies, as well as in-depth analysis of paintings mainly from the Renaissance period, trying to indirectly identify the presence of diseases in ancient times in a dual philologico-medical fashion.

Following in the footsteps of the long-established pathographic tradition, training a clinical lens upon prominent historical figures, for whom much more vital information is available, I aim to shed new light on the perception and evolution of disease.

Francesco Galassi

IEM-Publications (Selected publications since last IEM News 8/2015)

Armocida E, Boeni T, Rühli FJ, Galassi FM (2015). Does Acromegaly suffice to explain the origin of Pulcinella? A novel interpretation. *European Journal of Internal Medicine*. (in press).

Bianucci R, Habicht M, Buckley S, Fletcher J, Seiler R, Öhrström LM, Vassilika E, Böni Th, Rühli FJ (2015). Shedding new light on the 18th dynasty mummies of the royal architect kha and his spouse merit. *PLoS ONE*, 10(7):e0131916.

Galassi FM, Rühli FJ (2015). Depiction of differential etiologies of dwarfism by Il Veronese (1528–1588). *Journal of endocrinological investigation*. 10.1007/s40618-015-0397-1.

Galassi FM, Rühli FJ (2015). A case of temporal arteritis in Filippino Lippi's (1459-1504) Saint Frediano? *Clinical Rheumatology*. (in press).

Galassi FM, Habicht ME, Rühli FJ (2016). Dante Alighieri, his Purported Narcolepsy and Ante – litteram Description of a Fight or Flight Reaction. *Lancet Neurology* (in press).

Gruber P, Böni T (2015). Ischias – Von der Säftelehre zur Pathomorphologie. *Der Unfallchirurg*, 118(Suppl. 1):43-52.

Gruber P, Böni T (2015). Ischias : Von der Streckbank zur Mikrodisektomie. *Der Unfallchirurg*, 118(Suppl. 1):53-65.

Habicht ME, Gautschy R, Siegman R, Rutica D, Hannig R (2015). A New Sothis Rise on a Small Cylindrical Jar from the Old Kingdom, 41. *Göttinger Miszellen* 247, p. 41-50 (in press).

Haeusler M, Frater N, Mathews S, Landis S, Boeni T, Zipfel B, Rühli FJ (2015). Are musculoskeletal disorders evolutionary trade-offs of bipedalism? *Proceedings of the European Society for the study of Human Evolution*, 4:107.

Haeusler M, Ruff CB (2015). Pelvis. In: Richmond BG, Ward CV, Zipfel B, editors. *Hominin postcranial remains from Sterkfontein, South Africa*. Oxford: Oxford University Press. (in press)

Meyer M, Haeusler M (2015). Spinal cord evolution in early Homo. *Journal of Human Evolution*, 88:43-53.

Rossella G, Alessandro R, Kevin P, Hutana A, Logan K, Filippo F, Rühli FJ, Galassi FM (2015). The Mermaids Models of the Bologna Wax Collection. *HAPS educator*. (in press).

Reitmaier T, Camichel M, Frater N, Meyer S, Seiler R, Haeusler M, Rühli F, Volken S u M (2015). Eine weibliche Gletscherleiche aus der Zeit um 1690 aus Graubünden. In: *Archäologischer Dienst Graubünden*, editor. *Archäologie Graubünden 2*. Somedia-Buchverlag, Chur, p 13-21.

Staub K, Wyss T, Lehmann S, Abel T, Rühli FJ (2015). Die Gesundheit junger Schweizer Männer: Monitoring-Ergebnisse der Armee-Rekrutierung. *Praxis*, 2015, 104(22):1203-1210.

Staub K (2015). Stellungspflichtige im Gesundheitscheck. *Prävention und Gesundheitsförderung im Kanton Zürich* 2015, 37: 8.

Staub K, Wyss T, Lehmann S, Abel T, Rühli F (2015). Die Gesundheit junger Schweizer Männer: Monitoring-Ergebnisse der Armee-Rekrutierung. *Praxis*, 2015, 104(22):1203-1210.

Staub K, Bender N, Ewald P, Rühli FJ (2015). Abstracts for the "Evolutionary Medicine Conference: Interdisciplinary Perspectives on Human Health and Disease" at the University of Zurich, Switzerland (July 30–August 1, 2015). *Journal of Evolutionary Medicine* 2015, 3, doi:10.4303/jem/235924.

Webster CL, Waldron FM, Robertson S, Crowson D, Ferrari G, Quintana JF, Brouqui JM, Bayne EH, Longdon B, Buck AH, Lazzaro PB, Akorli J, Haddrill PR, Obbard DJ (2015). The Discovery, Distribution, and Evolution of Viruses Associated with *Drosophila melanogaster*. *PLoS Biology*, 13(7): e1002210.

Upcoming dates with IEM participation

- 11th European Social Science History Conference, Valencia, Spain March 30-April 2, 2016
- American Association of Physical Anthropologists 85th Annual Meeting in Atlanta GA, USA, April 13-16, 2016
- International Society for Evolution, Medicine, & Public Health 2nd Annual Meeting in Durham NC, USA, June 22-25, 2016
- 9th World Congress on Mummy Studies, Lima, Peru, August 10-13, 2016

New Members of the Institute

The IEM is happy to welcome the following members to the institute:

- Dr. med. Francesco Galassi (Research Assistant, Paleopathology and Mummy Studies Group)
- Dr. des. Joël Floris (Research Assistant, Evolutionary Morphology and Adaptation Group)
- Dr. Nikola Koepke (Research Assistant, Evolutionary Morphology and Adaptation Group)
- Dr. Cinzia Fornai (Research Assistant, Evolutionary Morphology and Adaptation Group)
- med. prakt Nabil Baghdadi-Serrano (MD-Student, Evolutionary Morphology and Adaptation Group)

Selected IEM media reports

- Neue Zürcher Zeitung, 2 October 2015
- Geschichte, December 2015
- Forbes.com, 23 November 2015
- Ancient Origins, 13 November 2015
- The Telegraph, 10 November 2015
- The Local, 10 November 2015
- News.Discovery.com, 15 October 2015
- La Suisse Romande, 14 October 2015
- Schweizerische Ärztezeitung, 23 September 2015
- Swissinfo.ch, 26 August 2015
- News.Discovery.com, 27 August 2015

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