The seventh issue of IARU News reports on exciting developments and initiatives within the IARU Aging, Longevity and Health project (ALH). Please find updates in this edition of IARU News on: The new EIT Health KIC; the first meeting of the newly-formed IARU ALH Steering Committee; IARU conferences in Copenhagen in 2014; the 5th IARU ALH summer school and iHan activities.

With best regards,
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Dean of the Faculty of Health and Medical Sciences, University of Copenhagen, Denmark

Major grant for an EIT Health KIC on Aging

In early 2014, the European Institute of Innovation and Technology (EIT), based in Budapest, Hungary, launched a call for Knowledge and Innovation Communities (KICs), as part of the larger European Union (EU) initiative, Horizon 2020. The goal of the KIC initiative is to provide innovative solutions to societal problems through highly integrated, creative and excellence-driven partnerships among stakeholders in education, technology, research, business and entrepreneurship. KICs tackle the grand-challenges facing the EU, to ensure economic growth along with sustainable solutions into the 21st century.

More than 50 core partners (and their 90 associate organizations), including leading businesses, public partners, research centers and universities from nine EU countries, responded to the 2014 call for KICs, submitting a proposal for the project InnoLife – Healthy living and active aging. Early in December 2014, this project was designated the winning KIC, to be called EIT Health, and will be awarded approximately a business value of 395 million euros over 7-10 years. Partners in EIT Health include University of Copenhagen, University of Oxford, Karolinska Institutet, Novo Nordisk, Abbott Laboratories (Spain), National Institute of Health and Medical Research (Inserm, France), Philips Healthcare and Roche Diagnostics GmbH (so-called core partners). The goal of InnoLife is to promote entrepreneurship and develop innovations in healthy living and active aging, providing the EU with new opportunities and resources. This will be achieved by delivering products, services and concepts designed to improve quality of life and contribute to the sustainability of healthcare across the EU. The partners represent the top tier in excellence in healthcare and research, and the outreach activities of EIT Health are expected to spread throughout the EU.

At the University of Copenhagen, the Center for Healthy Aging (CEHA) will be a central player in the InnoLife project. Currently, Dean Ulla Wewer is interim director of the education part of the project.

Of special interest to IARU, all European IARU universities are members of the consortium. Oxford and UCPH are core partners, while Cambridge and ETH are associate partners. The relationship of those universities to the IARU is an acknowledged component of the KIC, opening opportunities for new and strengthened collaboration between all IARU universities and goes well beyond within research and education.


Key persons from the EIT Health consortium after the presentation of the InnoLife project for the EIT Governing Board, Brussels on 9 December, 2014. From left to right: Koenraad Debackere (Professor, KU Leuven, Belgium), Lucyna Wozniac (Prorector for Research, Medical University of Lodz, Polen), Ursula Redeker (Spokesperson for the Board, Roche, Germany), Ulla Wewer (Dean, Faculty of Health and Medical Sciences at University of Copenhagen, Denmark and Elio Riboli (Director, School of Public Health at Imperial College London).
Empowering the ALH network:

ALH Steering Committee – and three conferences

Last year, the University of Copenhagen and CEHA decided to empower the Aging Longevity and Health (ALH) network, and an ALH Steering Committee was established. The goal of the ALH Steering Committee is to facilitate greater engagement across IARU campuses and promote joint ALH activities and funding opportunities within IARU. The ALH Steering Committee members were appointed during 2014.

Empowering the ALH network:

ALH Steering Committee – and three conferences

In June 2014, the University of Copenhagen and CEHA hosted the first Aging, Longevity and Health (ALH) Steering Committee meeting in connection with two IARU ALH conferences and the 2nd IARU Graduate Student Conference. The three conferences are described in greater detail below.

At the first ALH Steering Committee meeting, the Committee agreed on Terms of Reference, outlined future actions and established their “mission statement”, as follows:

Mission statement:
To facilitate exchange of ideas and collaborative interdisciplinary research projects on human aging among IARU ALH researchers at IARU member universities.

Prof. Lene Juel Rasmussen, CEHA, University of Copenhagen, was elected to a 2-year term as Chair of the ALH Steering Committee (June 2014 through May 2016).

Biennial IARU ALH Graduate Student Conference

At its first meeting in June 2014, CEHA/UCPH proposed, and the ALH Steering Committee endorsed, the idea of a biennial IARU ALH Graduate Student Conference. It was agreed that the location of the Graduate Student conference would be chosen by mutual agreement, rotating among IARU member universities, or alternatively, the conference time and location would be coordinated with an aging research-related conference or workshop of interest to ALH students and mentors. The 3rd Graduate Student Conference is planned for 2016, to be hosted by Tokyo University.

IARU ALH PostDoctoral Exchange and PhD Fellowship Program

ALH Steering Committee members also discussed the idea of PhD exchange and fellowship programs. Reciprocal degree arrangements were deemed to difficult to manage and implement, due to different requirements and educational procedures across campuses. However, ALH Steering Committee members were enthusiastic about establishing short-term reciprocal exchange programs/fellowships, especially for post-graduate and postdoctoral trainees, in the context of collaborative research projects. Exchanges should be ‘research-driven’, and the exchange program would only support interdisciplinary studies relevant to human aging or aging-related disease and dysfunction. The feasibility of such exchanges was thought to be high, with few administrative concerns or hindrances; as such, the idea received strong support from the ALH Steering Committee.

To promote the program, an inaugural intra-IARU PhD exchange was offered by Prof. Lene Juel Rasmussen on behalf of CEHA/University of Copenhagen, to be given to a qualified PhD student at one of the other 9 IARU ALH member institutions, if it were to be reciprocated by the accepting partner university (i.e. the partner university should agree to offer a PhD fellowship to a qualified student at UCPH). This inaugural intra-IARU PhD exchange would be implemented if/when a partner university affirms the mutual commitment.

Next ALH Steering Committee meeting

The 2nd meeting of the IARU ALH Steering Committee will be hosted in Copenhagen on 27th-28th August, 2015.

The members of the ALH Steering Committee

- Prof. Barry Halliwell, National University of Singapore
- Prof. Kaarin Anstey, Australian National University, represented by Prof. Hal Kendig at the first meeting
- Prof. Xiaoying Zheng, Peking University
- Prof. Junichiro Okata, University of Tokyo, represented by Prof. Hiroko Akiyama at the first meeting
- Prof. William Satariano, University of California, Berkeley, represented by Prof. Andrew Scharlach at the first meeting
- Dr Louise Lafortune, University of Cambridge
- Prof. Sarah Harper, University of Oxford, represented by Dr. Kenneth Howse at the first meeting
- Prof. Michael Ristow, ETH, joined the Steering Committee after the first meeting
- Prof. Lene Juel Rasmussen, University of Copenhagen (CEHA; Chair)
As mentioned above the University of Copenhagen, CEHA and IARU sponsored two IARU-ALH conferences on Aging and the 2nd IARU Graduate Student Conference in Copenhagen in June, 2014.

As noted at these conferences, it is not surprising, in light of the ongoing rapid increase in the mean age of human populations, that the mechanism(s) of human aging is a “hot topic”, being investigated in many diverse studies in research institutions worldwide. CEHA at the University of Copenhagen is heavily engaged in aging research, some of which involves collaborations with its IARU partner universities.

Leading-edge aging research must leverage expertise from many distinct disciplines and seeks to fulfill the following goals: 1) to address the implications of population aging within social, cultural, psychological, economic, political and public health contexts; 2) to define and understand the molecular biological and physiological bases of human aging; and 3) to identify factors that protect or promote aging-related disease and dysfunction.

These issues were discussed, and nearly 70 lectures and 10 posters were presented, at two IARU conferences in Copenhagen:

- **Cultures of Health and Aging (CHA)**, 20-21 June, 2014
- **Genome Dynamics in Neuroscience and Aging 5 (GDN5)**, 17-20 June, 2014

CHA focused on population aging and the challenges it presents to human society. It included a session entitled *Aging in a National and International Perspective*, where researchers from seven IARU universities provided country-specific perspective on aging issues (Oxford, PKU, NUS, ANU, Berkeley, Tokyo and UCPH).

GDN5 focused on the genetic and biomolecular mechanisms of genome instability and neurodegenerative disease in the context of human aging.

The conferences were attended by expert researchers from IARU and non-IARU universities and were both organized by CEHA, University of Copenhagen. GDN5 was co-organized by CEHA and the GDN organizing committee.

A commentary article on CHA will be published in the March 2015 issue of Age and Aging available online as of 1 December 2014: ageing.oxfordjournals.org/content/early/2014/12/01/ageing.afu189.full.pdf.

A summary of key points and emerging issues from CHA and GDN5 and both conference programs can be accessed online at healthyaging.ku.dk/activities/iaru-congress-2014.

**IARU Graduate Student Conference**

The 2nd IARU ALH Graduate Student Conference was also held in Copenhagen, immediately following the CHA conference:

- **Aging Research and Scientific Careers**, 21-22 June, 2014

Twenty-one students from IARU partner universities participated and networked during the conference. The conference program also included a full day visit to the *Euroscience Open Forum 2014 – Science Building Bridges*, which gave students an opportunity to participate in Career Track for Young scientist events (esof2014.org).
The International Healthy Aging Network (iHAN) is part of IARU. The researchers in iHan collaborate to study molecular and cognitive biomarkers of healthy aging and age-related diseases, including type 2 diabetes and Alzheimer’s disease. iHAN members include researchers from University of Melbourne, Australia National University, Queensland University, Yale, Johns Hopkins University, University of California, Berkeley, McGill, University of Oslo, University of Aarhus, and University of Copenhagen.

**Seminars, Meetings, Symposia**

In February 2014, iHAN hosted a seminar entitled *Beyond the Amyloid Cascade* arranged by Professor Albert Gjedde at John Hopkins University. The network also hosted a mini-symposium in July 2014 entitled *Alzheimer’s disease: mechanisms, diagnosis and prognosis*, at the BRAINlab of the University of Copenhagen.

Professors Albert Gjedde, Ron Kupers and Maurice Ptito (University of Copenhagen), met with Professor Robin Alexander, Dr. Charles Rupprecht, and Professor Arve Lee Willingham at Ross University School of Veterinary Medicine, on the island of St. Kitts, in May 2014. The goal of this meeting was to establish a collaborative project using positron emission tomography (PET) technology. This project will support future research on aging in non-human primates using PET technology.

Drs. Anders Rodell and Michael Gejl represented iHAN at the Symposium of the Australian Society for Molecular Imaging at the Center for Advanced Imaging in Brisbane, Australia, in July 2014.

**Knowledge Exchange Between iHAN Universities**

In February 2014, Professors Maurice Ptito and Ron Kupers of the University of Copenhagen visited the laboratory of Professor Fahmeed Hyder at Yale University, to strengthen their collaboration and to explore their mutual interest in specific magnetic resonance technology. The goal is to facilitate transfer of expertise in this technology from QNMR Core Center at Yale to the Panum NMR Center at the University of Copenhagen. Fahmeed Hyder (Yale University) also visited the BRAINlab and CEHA (UCPH) in July and October 2014. A wide range of MRI and Magnetic Resonance Spectroscopy (MRS) methods were used successfully during these visits, and the feasibility of performing in vivo (rat brain) and ex vivo (Guinea pig brain, primate brain) studies with this technology was demonstrated. See figure 1 for representative images collected during these collaborative visits.

In 2014, Professor William Jagust hosted Adjmal Nahimi (MD) at the University of California, Berkeley, and Drs Anders Rodell and Michael Gejl were hosted by Professor David Reutens at the Center of Advanced Imaging at the University of Queensland, Brisbane.

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**Figure 1.** A: Example of resting-state and task-evoked fMRI. B: Forepaw stimulated fMRI analysis. Forepaw stimulation (2 mA, 9 Hz, 0.3 ms) for 30 s revealed BOLD signal increases in S1FL (somatosensory forelimb) and VPL (ventral posterior lateral part of the thalamus) across several slices. BOLD time course of S1FL. BOLD scale % change. Source: BGratoct22 Exp #22. Acquired during visit of iHAN member Fahmeed Hyder to BRAINlab at Panum Institute in October 2014.
CEHA hosted the 4th interdisciplinary Summer School on Interdisciplinary Aspects of Healthy Aging, 2-21 July, 2014 at UCPH, Copenhagen.

The aim of the Summer School is to give students an opportunity to learn and use research methods from other disciplines, and to develop new projects with guidance from Summer School teachers. CEHA Associate Professor Ying Liu has developed and implemented the Scientific Programmes. Prof. George Leeson, University of Oxford, a visiting scientist at CEHA, gave lectures to students at the 2014 Summer School.

Summer School participants included students from Yale, Oxford, PKU, Tokyo, ANU, NUS, UCPH, Universidade de Federal de São Carlos, Brazil, and the University of Tohoku, Japan.

As a new initiative, the students visited the home care facility Søndervang in Copenhagen, in order to gain insight into the lives of older people in Denmark. During the visit, the students had opportunities to interact one-on-one with the residents of Søndervang. Both students and residents reported that this interaction was valuable and mutually beneficial.