

FACULTY OF HEALTH SCIENCES  
UNIVERSITY OF COPENHAGEN



# IARU News

3 / April 2010



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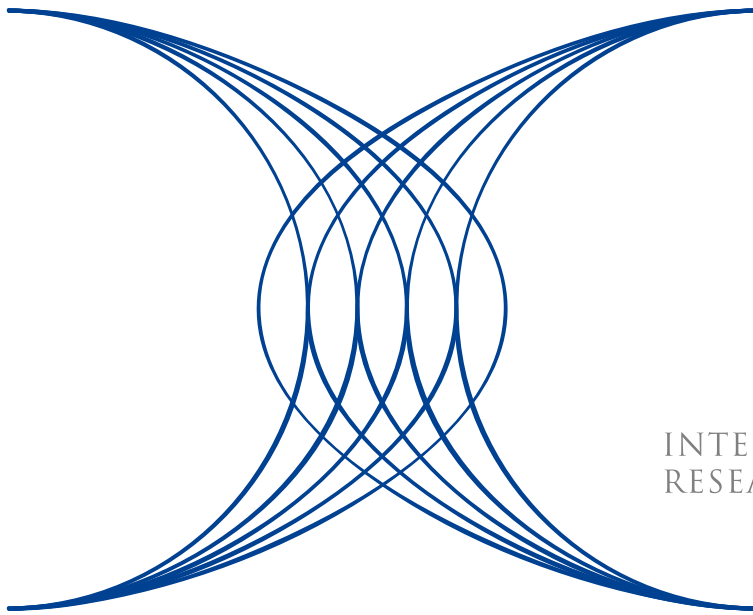
This third issue of IARU News focuses on the IARU Congress on Ageing, Longevity and Health to be held in Copenhagen 5-7 October 2010. It also describes the major activities in the IARU Ageing, Longevity and Health research project in 2009-2010 including the establishment of the International Healthy Aging Network (iHAN); and finally we review the new Copenhagen Center for Healthy Aging.

With best regards,



Ulla Wewer, Professor, DM.Sci

Dean of the Faculty of Health Sciences, University of Copenhagen, Denmark



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## IARU Congress in 2010 in Copenhagen

On behalf of the researchers on the Ageing, Longevity and Health project, the Rector at the University of Copenhagen, Ralf Hemmingsen and I warmly invite you all to attend the IARU Congress in October in Copenhagen on Ageing, Longevity and Health.

The University of Copenhagen is providing EUR 100,000 in funding for the Congress following an application signed by key researchers at six IARU Universities: The National University of Singapore, the University of Tokyo, the Australian National University, University of Oxford, Yale University and the University of Copenhagen.

A scientific organizing committee is coordinating this initiative, headed up by Prof. Lene Juel Rasmussen, Managing Director of the Copenhagen Center for Healthy Aging (CEHA), University of Copenhagen, and Prof. Vilhelm Bohr, who is associated with CEHA. CEHA is providing a further EUR 40,000 to support the Congress.

The organizing committee is expecting about 100 IARU researchers and others in the field of aging to attend. The purpose of the Congress is to invite researchers from the IARU Ageing, Longevity and Health network and others to meet up, network and exchange data and ideas. The aim of the Congress is also to encourage and continue state-of-the-art multidisciplinary research between the IARU institutions and in the field of aging. About 30 speakers are being invited and many others will be attending, including young investigators and students so as to promote involvement by the younger generation in research and planning. Special keynote lectures are to be held as well as an event and evening at the ballroom at the University's main facilities hosted by the President, Rector Ralf Hemmingsen.

The program includes aging sub-themes such as:

- Molecular Aging, Neuro- and Muscle Degeneration
- Life Course and Aging
- Aging Populations
- Aging and Evolution

# The IARU Ageing, Longevity and Health project

This section describes activities in the Ageing, Longevity and Health project in 2009-2010



## Health Policy Challenges of Aging Populations

Prof. Sarah Harper, Director of the Oxford Institute of Ageing, visited Copenhagen at the end of October 2009 to learn more about the CEHA and to discuss possible collaboration between Copenhagen and Oxford.

The research on preventive medication being initiated at the Copenhagen Center has a strong policy emphasis and will contribute a new perspective to the IARU Health Policy Challenges of Aging Populations research group. In connection with policy challenges, the CEHA group is studying decision-making with regard to the use of long-term medication to prevent the chronic diseases associated with aging. Issues of equity, ethics, and coordination are being examined, as well as the interplay of commercial interests, research, clinical care and individual practice. Despite the increasing use of preventive medication in aging populations, surprisingly little public health and social science research has been undertaken on this topic.

As follow-up on earlier IARU workshops, Senior Research Fellow Kenneth Howse from the Oxford Institute of Ageing will present his overview policy paper at the planned IARU Congress in Copenhagen in October 2010 with a view to developing a joint publication.



## Neurodegeneration and Life Course Issues

The taskforce for this project has welcomed a new member, Prof. Albert Gjedde of the Faculty of Health Sciences, University of Copenhagen. The taskforce continues its discussions on new initiatives and grant

application writing in future. We have now started translational experiments that will bridge the areas of neurodegeneration and life course studies. These approaches are being coordinated with the iHAN process described below so that over time, we shall be able to extend them to include the various cohorts available in the IARU network.

As part of the collaboration between the University of Tokyo and the University of Copenhagen, Prof. Kirsten Avlund, University of Copenhagen, has been appointed senior advisor for junior gerontologists in the Pacific Rim Countries at the University of Tokyo in a collaboration with Prof. Hiroko Akiyama. Plans for a collaborative project between the

Universities of Tokyo and Copenhagen were discussed and were further developed in 2009.

Collaboration between the Australian National University and the University of Copenhagen has been further promoted at several meetings between Prof. Kaarin Anstey, ANU, and Prof. Kirsten Avlund, University of Copenhagen. The first result of this was PhD student Natalie Chan spending two months at the University of Copenhagen during the spring of 2009. The outcome of her work has been submitted as a scientific article with co-authors from both universities.

Further, in September 2009 Prof. Don Byrne from the Australian National University visited the Faculty of Health Sciences, where he met with Dean Ulla Wewer, Ass. Prof. Erik Lykke Mortensen and Prof. Kirsten Avlund for discussions on possible collaboration. This has resulted in proposals for exchanges for PhD students between the two universities.

In June 2010, the Life Course Issue project group has arranged a workshop on Prevention in Old Age with Professor Thomas Gill, Yale University, as the keynote speaker.



## Evolutionary Medicine

Prof. Stephen Stearns, Yale University, conducted a three month sabbatical at the Center for Social Evolution, Department of Biology, University of Copenhagen, in late 2008. On this occasion, he taught the first course in Evolutionary Medicine in

Copenhagen. The second course in Evolutionary Medicine for 4th year students in Biology, Molecular Biomedicine and Biochemistry is being run again in February-April 2010, with additional support from the Danish Velux Foundation. The Center for Social Evolution has firmly established this 4th year MSc course in Evolutionary Medicine.

Sean Byars joined the Center for Social Evolution in Copenhagen as a post doc to start up the Center's research program in Evolutionary Medicine. This initiative has been funded by an additional International Talent Recruitment grant from the Danish National Research Foundation to Prof. Jacobus J. Boomsma, the Director of the Center. Based on his experience gained in working with Stephen Stearns at Yale, Sean Byars is now initiating a large scale statistical analysis of diagnoses of mental disease in the Danish health databases to see whether correlations can be found with perinatal markers of genomic imprinting around birth.

# The International Healthy Aging Network (iHAN)

We are making greater efforts to build IARU constellations by developing the International Healthy Aging Network (iHAN) as a part of IARU. This effort is being spearheaded by Dr. Albert Gjedde. The aim of iHAN is to create a network based on the research skills of mitochondrial molecular biology and energetics, of brain imaging and analysis and the application of novel biomarkers in cohort-based studies of mid to late-life aging.

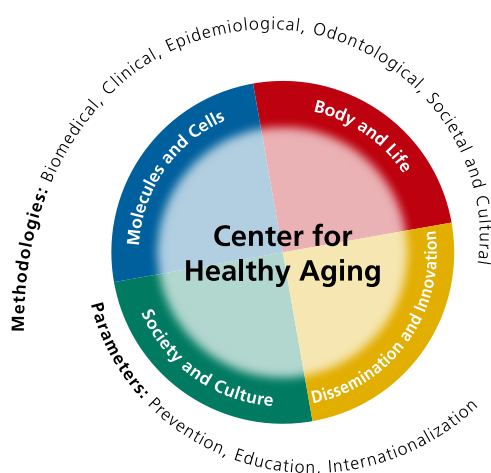
The organizing committee for iHAN held a meeting in Singapore (September 19-20, 2009) to initiate collaboration between researchers in Denmark (Copenhagen and Aarhus), Singapore (NUS), and Australia (ANU) and to draw up a proposal for a European Science Foundation Networking Grant. The aim of this meeting was to integrate the knowledge and expertise of researchers in geriatric medicine. Establishing a network of international researchers in this field will enable iHAN to incorporate some of the best resources available. The purpose of iHAN is to link experts in the field, foster international collaboration, develop young and early researchers and focus on bottom-up research. Attendees included Prof. Albert Gjedde, Prof. Lene Juel Rasmussen (CEHA) and post doc Ericka Peterson from the University of Copenhagen, Prof. Peter Little and post doc Esben Thade Petersen from the University of Singapore, Research Coordinator Anders Rodell and PhD Student Lynn Ho from Aarhus University, Denmark, and Ass. Prof. Marc Budge and Brain Research Fellow Andrew Janke from Australian National University.

There was a further meeting in Tokyo in March 2010 with delegates from Denmark and Japan in the context of a workshop organized by grantees from the Japanese and Danish Agencies of Science, Technology, and Innovation. The committee plans to hold meetings on collaboration strategies at all IARU sites every six months on average, with the next probably at U.C. Berkeley in the spring of 2011. The committee also hopes to continue its efforts by applying for relevant EU Seventh Research Framework Program Grants (FP7).

Research at iHAN is based upon three fundamental hypotheses, each of which relates to the substantial variation in overall energy consumption in the brain:

- That partial uncoupling of mitochondrial function and the resulting differences in individual energy production result in significant inter-individual differences in RONS (reactive oxygen and nitrogen species), damage and repair processes and that these differences contribute directly to variations in aging.
- That there is a direct relationship between inter-individual differences in brain energy utilization, brain morphology and/or activity.
- That there is a direct relationship between energy consumption in the brain and the aging process that can be established by aligning population-based observation of aging processes with measures associated with brain energy consumption.

# The Copenhagen Center for Healthy Aging (CEHA)



The Faculty of Health Sciences, University of Copenhagen, established the Copenhagen Center for Healthy Aging following a donation of USD 26m for the first five years from the Danish Nordea Foundation. The Center started operations in January 2009.

The vision of the Center is to promote healthy aging and general health in the aging population and to provide educational programmes for postgraduate students and scientists involved in research on aging. The Center expects to establish strong research ties with IARU partners involved in the IARU Ageing, Longevity and Health Project.

It is a pleasure to be able to report that Prof. Ian D. Hickson from University of Oxford joined CEHA on 1st January 2010. Ian Hickson has had a broad, longstanding involvement with the field of DNA repair and molecular aging and had made outstanding scientific contributions to the field. He has also shown that he employs a multidisciplinary approach in order to provide novel, original insights into the diagnosis and treatment of human diseases and aging. Prof. Hickson's main effort has been in the area of topoisomerases and RecQ helicases, proteins involved in guarding the genome against damage and instability. Both areas lie at the core of molecular aging and will be of immense benefit for the IARU network.