GDR multi-organismes - Longévité et vieillissements (GDR CNRS 3662)
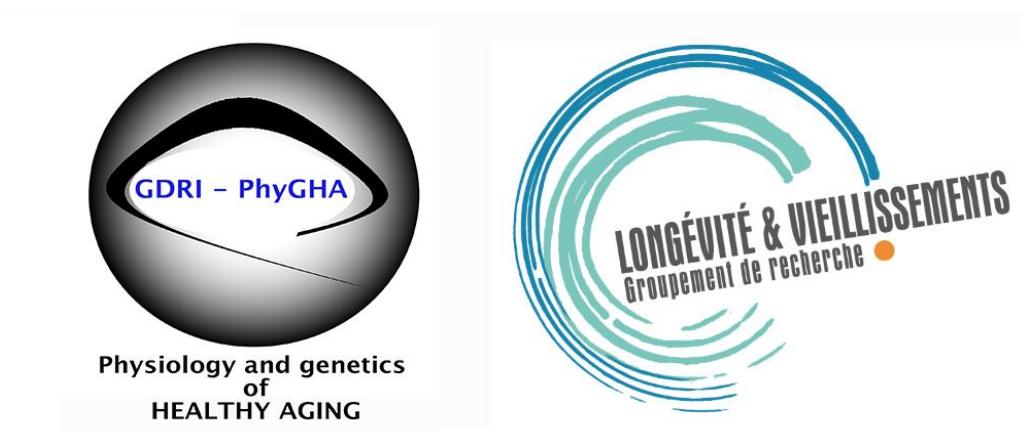
GDRI- PhyGHA - Physiology and Genetics of Healthy Aging

Joint Meeting

Evolution of cognition and longevity: Adaptation to a new technological environment

Paris, October 27-28, 2016

Auditorium of the "Grande Galerie de l'Evolution"

Muséum National d'Histoire Naturelle

36 Rue Geoffroy-Saint-Hilaire, 75005 Paris, France

Two distinctive features of *Homo sapiens* are extended lifespan and large brain size, associated to higher cognitive functions such as reasoning, metacognition and articulated language. It has been proposed that these two human-specific characters are the products of coevolutionary— selection.

Although several mathematical and demographic models exist for the coevolution of intelligence and longevity, the underlying physiological and genetic mechanisms remain still to be determined.

The recent, impressive, progresses in the analysis genomic variations from thousands of individuals and from ancestral hominids (including *Homo neandertaliensis* and great apes) permits to unveil some of the genetic features that might have supported this coevolution. The identification of genomic determinants of the coevolution of longevity and cognition is now supported by the large amount of data deriving from the analysis of aging cohorts and the identification of pathology-related variations.

The aim of this meeting is to bring together sociologists, geneticists, physiologists and specialists of human evolution to present to their colleagues, in an easily understandable way, the latest progress in their respective fields.
Session of the meeting will be devoted to the impact on aging and cognition of the rapidly evolving technological landscape and to the impact of environmental factors on human development.

Topics that will be addressed include the interaction between physiological, genetic, epigenetic and environmental factors on the development of cognitive capacities and longevity from conception to death.

PROGRAM

October 27, 2016

10.00-10.20 Introductory remarks – *Jean-Marie ROBINE, Giovanni LEVI*

10.20-11.35 -S1 - Palaeoanthropology

10.20-10.45 Dominique GRIMAUD-HERVE / Antoine BALZEAU – MNHN,

The evolution of the brain in genus *Homo*

10.45-11.10 David RAICHLEN – University of Arizona,
Exercise, APOE genotype, and the evolution of the human lifespan

11.10-11.35 Viviane SLON – Department of Evolutionary Genetics - Max Planck Institute for Evolutionary Anthropology,
What can we learn from archaic genomes?

11.35 – 11.55 Coffee Break

11.55-13.15 -S2- Co-evolution of intelligence and longevity
11.55-12.35 James R. CAREY – University of California, Davis,
Nest as nexus: The primacy of domicile in the coevolution of sociality, intelligence and longevity in humans

12.35-13.15 Michael MUTUKRISHN – London School of Economics and Political Science,
The Cultural Brain Hypothesis & Information Grandmother Hypothesis: How culture drives brain expansion and alters life history

Lunch 13:00 – 14:30 Grande Mosquée de Paris

14.30-16:00 –S3- Ecology
14.30-14.55 Hervé CHNEIWEISS – UPMC,
Impact of environment on our brain (environmental neuroethic)

14.55-15.20 Barbara DEMENEIX – MNHN,
Thyroid hormone, brain evolution and environmental chemicals

15.20-15.45 Donata LUISELLI – University of Bologna,
Nutrition and cognition in human evolution

15.45 – 16.10 Coffee Break

16:10-18:00 –S4- Biodemography / The longevity revolution in human species
16.10-16.45 Jean-Marie ROBINE, GDR INSERM/EPHE,
The human adult longevity revolution

16.45-17.20 Kaare CHRISTENSEN, *Danish Aging Research Center*,
Cognition and Survival at the Highest Ages

17.20-17.40 General discussion

October 28, 2016

10:00-11:30 –S5- Genetics of longevity and cognition
10.00-10.25 Claudio FRANCESCHI – GDRI – University of Bologna,
Inflammaging and neurodegenerative diseases within an evolutionary perspective

10.25-10.50 David HILL – Centre for Cognitive Ageing and Cognitive Epidemiology - The University of Edinburgh,
Molecular genetic aetiology of general cognitive function is enriched in evolutionarily conserved régions

10.50-11.15 Paolo GARAGNANI – GDRI – University of Bologna,
Proximate and remote determinants of human longevity

11.15 – 11.25 Coffee Break

11:25-13:00 –S6- Epidemiology / Trends in cognition
11.25-11.50 Eileen CRIMMINS – University of Southern California Davis School of Gerontology,
Trends and Differences in Cognitive Functioning

11.50-12.15 Dorly J.H. DEEG – VU University Center – Amsterdam,
Twenty-year trends in cognitively healthy life years

12.15-12.40 Carol BRAYNE – CFAS study,
Dementia and cognition across time and geography

12.40-13.05 Carole DUFOUIL – Inserm U1219, Bordeaux, University of Bordeaux – Can we explain the drop in dementia incidence ? A summary of current evidence

Lunch 13.15 – 14.30 Grande Mosquée de Paris

14.30 – 16.00 –S7- <u>New technologies</u> / Use of new technologies by old and oldest-old people

14.30-14.55 Filippo CAVALLO – Scuola Superiore Sant'Anna – Pisa,
A Cloud Robotics Solution to Improve Social Assistive Robots for Active and Healthy Aging

14.55- 15.20 Rodolphe GELIN - EVP Chief Scientific Officer SoftBank Robotics - France,
Assistive humanoid robots for elderly people

15.20-15.45 Emilie GAILLARD, Noëlle CALLIZOT & Jean MARIANI – Neuradom Pharm, UMR 8256 B2A Biological Adaptation and Ageing – UPMC,
Neuradom: Bringing neurorehabilitation at home

15.45 – 16.05 Coffee Break

16:05-17.45 -S8- Anthropology, sociology and psychology
16.05-16.30 Armelle VIARD – U INSERM–EPHE–UNICAEN U1077, CAEN,
Past remembering and future projection: cognitive & fMRI studies in older subjects and dementia.

16.30-16.55 Frédéric BALARD – 2L2S, Université de Lorraine, Nancy,
 "Disengage" its mind to succeed in old age?

16.55-17.20 Enguerran MACIA – GDR Africa,
Transformation of the body and its impact on identity of older adults during the 20th century

17.20-18.00 General discussion, future perspectives.