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Thursday 21 September

09.00-09.30 Opening

Professor Maria Grazia Masucci, Karolinska Institutet (KI)

Maria Grazia Masucci is the Deputy Vice-Chancellor for International Affairs at Karolinska Institutet. She is a member of the Swedish Academy of Sciences and the Nobel Assembly at Karolinska Institutet, which awards the Nobel Prize in Physiology or Medicine.

Masucci is a Professor of Virology at Karolinska Institutet. Her research aims to understand how tumor-causing viruses stimulate cell growth and how the host immune system reacts to the infected cells. Her studies focus on the induction of DNA damage and genomic instability in cells infected with oncogenic herpesviruses.

Masucci earned her MD and specialisation in Oncology at the Medical School of the University of Ferrara in Italy. Shortly after graduating as a physician in Italy in 1977, she came to Karolinska Institutet to obtain her PhD in Tumor Biology, and has since held a faculty position. Apart from her commitments at Karolinska Institutet, she has held a professorship at Lund University and has been a visiting researcher at MIT and Harvard in Boston, USA, at the University of Birmingham in the UK and at the Netherland Cancer Institute in Amsterdam. She also has research collaborators in Italy, Germany and China. Masucci is also a member of EMBO, the European Molecular Biology Organization.

Contact: maria.masucci@ki.se





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Professor Ole Petter Ottersen, Karolinska Institutet (KI)

Professor **Ole Petter Ottersen** is the Vice-Chancellor of Karolinska Institutet. He took office on August 1, 2017 after serving eight years as President of the University of Oslo (UiO). He received his medical degree from UiO in 1980, and received his PhD from UiO in 1982.

From 2002 to 2009, he was the Director of Centre of Molecular Biology and Neuroscience- one of Norway's Centre of Excellence. He has served as as Dean of Research at UiO's Faculty of Medicine for two years, and was the Head of the UiO's Department of Anatomy from 1997-1999.



As President of UiO, he led the Norwegian Association of Higher Education Institutions and NUS-Det nordiska Universitessamarbetet fro 2013-2015. Along the same line, he has headed one of UiO's interdisciplinary initiatives (EMBIO; now UiO: Life Science) and one of the major national programs of the Norwegian Research Council (FUGEL Functional Genomics in Norway). He has coordinated two projects under the EU Framework Programme and one of the first three Nordic Centres of Excellence in Molecular Medicine, funded by NordForsk.

His interest has been in the field of Neuroscience, with a particular focus on synaptic structure and function and on the molecular mechanisms underlying water transport in brain. He has served as Chief Editor of Neuroscience- the official journal of the international brain research organization (IBRO). He has led several prize award committees, and current Chair of the Kavli Prize Committee in Neuroscience and of the Thon Foundation Advisory Board.

In recent years, he has been engaged in global health

([http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(14\)60161-6/fulltext](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(14)60161-6/fulltext)) , much inspired by his experiences as Chair of the Lancet-University of Oslo Commission

(<http://www.thelancet.com/commissions/global-governance-for-health>). He has served at a number of boards, including the board of the Oslo University Hospital (2012-2017), and chaired Samarbeidsorganet (Joint Council) of the regional health authority (Helse Sør-Øst) and University of Oslo, alternating with the Director of Helse Sør-Øst.

He has received several international awards including the Anders Jahre Medical Prize and Lundbeck's Nordic Research Prize. Contact: rekor@ki.se



Professor Sigbritt Karlsson, Royal Institute of Technology (KTH)

President of KTH since November 2016, **Sigbritt Karlsson** was President of the University of Skövde from 2010 to 2016. She has an academic background from KTH, where she earned her Master of Science degree in Chemical Engineering with a specialisation in biotechnology.

She also has a PhD in polymer technology from KTH, and is professor of polymer technology targeting the polymeric materials technical environment. Karlsson has held a variety of positions at KTH. From 1996 to 2004 she served as Director of Studies.



She was Vice Dean responsible for strategic education issues from 2008 to 2010. Prior to that, she served as Vice Dean of Faculty and was responsible for undergraduate studies at the School of Chemical Science.

As President of KTH her goal is, in line with Vision 2027, to lift KTH to next level: "KTH will continue to strengthen its position as a leading international university. To get there we need the work to be characterized by equality and sustainable development". Contact: rektor@kth.se

Professor Astrid Söderbergh Widding, Stockholm University (SU)

Astrid Söderbergh Widding is the Vice-Chancellor (President) of Stockholm University since 2013.

She has a background in Cinema Studies at Stockholm University, where she obtained her PhD in 1992 with a dissertation on off screen space in Andrei Tarkovsky's films. She was appointed Professor in Cinema Studies in 2000 and has held positions as Head of Department, Deputy Dean and Deputy Vice-Chancellor.



In 2006, she was responsible for the establishment of the Centre for Fashion Studies, and in 2009 she initiated the Journal of Aesthetics and Culture, for which she was the Editor-in-Chief from 2009 to 2012.

Astrid Söderbergh Widding is a Fellow of the Royal Swedish Academy of Science and the Royal Swedish Academy of Letters, History and Antiquities, Chair of the Principals Council of the Knut and Alice Wallenberg Foundation, member of the Supervisory Committee of the National Library of Sweden and of the Board of Stockholm Environment Institute.

Previous external appointments include roles at the Board of the Fulbright Commission and the Board of the Swedish Film Institute. She has also been Chair of the Ingmar Bergman Foundation and film critic and media columnist in national daily Svenska Dagbladet. Contact: rektor@su.se



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Professor Mamoru Mitsuishi, The University of Tokyo (UTokyo)

Professor Mamoru Mitsuishi is currently the executive director and vice president of the University of Tokyo, posts he has held since the start of the 2017 academic year.

Prof. Mitsuishi graduated from the Faculty of Science at the University of Tokyo in 1979 with a bachelor of science in physics. Following this, he earned a second bachelor's degree in mechanical engineering from the Faculty of Engineering at the University of Tokyo in 1981.



He continued his studies and obtained both his master's degree and his PhD in mechanical engineering from the Graduate School of Engineering at the University of Tokyo (in 1983 and 1986, respectively).

Prof. Mitsuishi was a lecturer in the Department of Engineering Synthesis in the School of Engineering from 1986 to 1989. During this time, he spent a year (1987-1988) at the Fraunhofer Institute for Manufacturing Engineering and Automation (IPA) in Stuttgart, Germany as a visiting researcher. He returned to the School of Engineering at the University of Tokyo and was promoted to the position of associate professor in the Department of Engineering Synthesis in 1989. He became a professor in the department in 1999. In 2009, due to departmental integration, his position changed to that of a professor in the Department of Mechanical Engineering at the University of Tokyo's School of Engineering. He has held the positions of vice dean (2012-2014) and dean (2014-2017) of the School of Engineering. He was also a councilor on the University of Tokyo's Education and Research Council between 2013 and 2017.

Prof. Mitsuishi's areas of interest are biomedical robotics (including computer-integrated surgical systems), and manufacturing systems (including the fields of multi-sensor integrated intelligent manufacturing systems and biomanufacturing). He is a member of various internationally renowned societies, such as the International Academy for Production Engineering (CIRP), where he is a vice president elect and fellow, and the IEEE Robotics and Automation Society. He is also a fellow in the Japan Society of Mechanical Engineering (JSME), the Robotics Society of Japan (RSJ), and other Japanese societies. Contact: mamoru@nml.t.u-tokyo.ac.jp



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Speech by **HE Jun Yamazaki**
Ambassador of Japan to Sweden



Introduction to Nobel Forum by **Thomas Perlmann**
Professor, Secretary of the Nobel Assembly





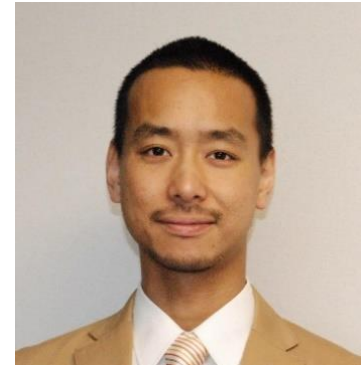
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09.30-10.00 Relevance and frame of the topic

Professor Junichiro Shiomi, The University of Tokyo (UTokyo)

Junichiro Shiomi is Professor in Department of Mechanical Engineering, School of Engineering, the University of Tokyo (UTokyo). He received B.E. (1999) from Tohoku University, and Ph. D. (2004) from Royal Institute of Technology (KTH), Sweden. Leading the Thermal Energy Engineering Lab, he has been pursuing research to advance thermal management, waste heat recovery, and energy harvesting technologies based on nano-to-macro innovation in materials, structures, and systems.



Prof. Shiomi has been leading several projects including Core Research for Evolutional Science and Technology (JST-CREST), Precursory Research for Embryonic Science and Technology (JST-PRESTO), and New Energy and Industrial Technology Development Organization (NEDO) projects. He is Fellow of Japan Society of Mechanical Engineers and serves as associate editors of Applied Physics Express, Japanese Journal of Applied Physics, and Transactions of the Japan Society of Mechanical Engineers.

He is a recipient of the Zeldovich Medal from the Committee on Space Research, the Young Scientists' Prize, the Commendation for Science and Technology by the Minister of Educational, Culture, Sports, Science and Technology, and the Academic award of Heat Transfer Society of Japan. He has been coordinators of the EU/Japan Interdisciplinary Global Mechanical Engineering Education (IGM) program, the Global Mechanical Engineer (GME) program between UTokyo and KTH, EPFL and Rice University, the Top Global University Project between UTokyo and Stockholm Universities. Contact: shiomi@photon.t.u-tokyo.ac.jp



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Professor Naoto Sekimura, The University of Tokyo (UTokyo)

Naoto Sekimura is a Professor at the Dept. of Nuclear Engineering and Management, Graduate School of Engineering, The University of Tokyo (UTokyo). Additionally, he serves as a Vice-President of UTokyo (2017-present) with focuses on international affairs and Japanese language education for international students. His research interests include: safety engineering and maintenance engineering for nuclear power plants, systems engineering for complex systems, ageing management of light water reactors, effects of radiation in solid materials and nuclear materials, nuclear fuels engineering, and codes and standards for nuclear systems, amongst others.



Prof. Sekimura received his Doctor of Engineering from UTokyo in 1986, having held a research position at the Japan Society for the Promotion of Science (JSPS) in 1985. He joined UTokyo's faculty as a Lecturer in the Dept. of Nuclear Engineering in 1987, and has held a number of faculty positions in the institution since. After being appointed to the position of Professor in the Dept. of Quantum Engineering and Systems Science in 2000, he became a Professor of the Dept. of Nuclear Engineering and Management in 2008, followed by a position as Vice Dean of the Graduate School of Engineering (2010-2012). He was also a member of the Education and Research Council of UTokyo from 2010 to 2013.

Prior to his current role as Vice-President of the University, Prof. Sekimura has been involved with various international matters at UTokyo, when he served as the Director of the IIIIE (2012-2014). He has worked as the Deputy Director for the Global Campus Promotion Office (2014-2015), and served as a Special Advisor to the President in his capacity as a Deputy Director General, Division of International Affairs (2015-2017). Contact : sekimura@n.t.u-tokyo.ac.jp

Associate Professor Livia Sz. Oláh, Stockholm University (SU)

Livia Sz. Oláh is Associate Professor of Demography (Ph.D., 2001, Stockholm University) at the Dept. of Sociology, Stockholm University with expertise also in law and political science, comparative welfare state research and gender studies. Her main research interests are: family demography in comparative perspective, policy impacts on fertility and partnership dynamics, and the interplay of family patterns and societal and familial gender relations in European societies.





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Professor **Oláh** is the Project coordinator of FamiliesAndSocieties (“Changing Families and Sustainable Societies: Policy contexts and diversity over the life course and across generations”), a large-scale collaborative project financed in the European Union Seventh Framework Programme (Febr. 2013 – Jan. 2017). Oláh is also the Principal Investigator of the Swedish part of the international comparative project “Explaining very low fertility in postindustrial societies”.

She has been the initiator and coordinator of the research network Gendering European Family Dynamics; a member of the Network of Excellence RECWOWE (Reconciling Work and Welfare in Europe; FP6, 2006-2011), academic observer for Sweden in the European Alliance for Families (2009-2012), a member of the Editorial Board of *Cogent Social Sciences*, Cogent OA, Taylor & Francis Group, UK (2016-), the *Social Science Review* web-based journal of CSS, Hungarian Academy of Sciences (2014-) and the editorial advisory board of The Open Demography Journal, Bentham Science Publishers, USA (2008-2014), as well as of reference groups for Swedish government reports on family issues. Contact: livia.olah@sociology.su.se

Professor Laura Fratiglioni, Karolinska Institutet (KI)

Originally from Italy, **Laura Fratiglioni** moved to Sweden with the family 1996. She has both Swedish and Italian citizenship. Laura Fratiglioni, currently employed as professor at the Karolinska Institutet, Stockholm, Sweden, is the leader of the medical sector, and former Director of the Aging Research Center (ARC), KI. She is a medical doctor, specialized both in Neurology and Epidemiology. She has scientific, clinical, and pedagogical commitments.



She is the principal investigator of The Swedish National Study on Aging and Care-Kungsholmen population study, the scientific coordinator of the Kungsholmen Project on Aging and Dementia, and co-investigators of several EU projects. Her major scientific contributions concern primary and secondary prevention of dementia, and more recently multimorbidity and longevity among the oldest old adults.

Her scientific production has led to 292 Original Articles, 17 Reviews, 11 Letters in peer-reviewed journals. By May 2017 she had accumulated 26024 citations; h-index= 80 (web of science).

Professor Fratiglioni is active in several national and international networks. In Sweden, she participates as a core leader in Swedish Brain Power, a network of dementia researchers that promotes interdisciplinary collaboration. She has received several awards, including the Lifetime Achievement Award from the American Alzheimer’s Association, the Karolinska Institutet Distinguished Professor Award, Sohlberg’s Nordic Prize in Gerontology, and Karolinska Institutet Folksam’s prize in epidemiologic research.



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Institutet**



Since 2008, Laura Fratiglioni has been the director of the National Graduate School for Aging Research, an educational program with a biological and psycho-social profile. Under her supervision, 16 PhD and five postdoctoral students have completed their studies since 1996. At the moment she is the main supervisor of two and co-supervisor of six PhD students. Contact: Laura.Fratiglioni@ki.se

10.30-12.15 Towards a healthier ageing: Biophysical approach

Professor Shu Takagi, The University of Tokyo (UTokyo)

Shu Takagi is a Professor in the University of Tokyo's Department of Mechanical Engineering and in the Department of Bioengineering. He is a fellow in the Japan Society of Fluid Mechanics and a fellow in the Japan Society of Mechanical Engineers. His areas of expertise include numerical simulations and experimental investigations on dispersed multiphase flows, especially bubbly flows and blood cell flows, medical ultrasounds, hierarchical integrated simulations of human bodies, micro-scale heat transfers, molecular thermo-fluid mechanics, and multiscale analysis of thermo-fluid phenomena.



He has published more than 150 articles in refereed journals, including the *Journal of Fluid Mechanics*, *Physics of Fluids*, the *Journal of Computational Physics*, and the *International Journal of Multiphase Flows*.

He has written more than 20 review articles (including for *Annual Review of Fluid Mechanics*) and has given more than 30 keynote lectures at conferences. He has received several awards for his works, including the Japan Society of Mechanical Engineers' (JSME) Young Researchers' Award (1997), the Japanese Society of Multiphase Flows' Best Paper Award (1998) and the JSME's Division of Fluid Mechanics Frontier Award (2012).

Takagi received his PhD (1995) in mechanical engineering from the University of Tokyo. He was a research associate at the University of Tokyo from 1995 to 1996. From 1996 to 1998 he was a research associate at Tokyo Institute of Technology. In 1998, he became an assistant professor in the Department of Mechanical Engineering at the University of Tokyo. From 2002 to 2010 he was an associate professor in the same department. He was a visiting researcher at Johns Hopkins University from 1992 to 1993 and 2000 to 2001. He also worked as a team leader on the Organ and Body Scale Team in RIKEN's Computational Science Research Program (CSRP) from 2007 to 2012. In 2010, he was appointed to his current position of professor. Contact: takagi@mech.t.u-tokyo.ac.jp



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Professor Erik Lindahl SciLifeLab/Royal Institute of Technology (KTH)

Erik Lindahl is a Professor of Biophysics at the Department of Biochemistry and Biophysics, Stockholm University, and Professor of Theoretical Biophysics in the Department of Physics at the KTH Royal Institute of Technology. After obtaining MSc in Engineering Physics in Lund, he received a PhD in Theoretical Biophysics from KTH in 2001, and worked at Groningen University, Stanford University and the Pasteur Institute before returning to Stockholm. His research is focused on understanding the structure and function of membrane proteins with a combination of computational and experimental techniques, using bioinformatics and molecular simulations to model how small drug molecules will influence modulation in ion channels and transporters, and then testing predictions by using electrophysiology and cryo-electron microscopy. The group has developed some of the world's most widely used computational tools in structural & computational biology, in particular the GROMACS package, with support from numerous national and international grant agencies (ERC, HFSP, FP7, H2020, NIH, SSF, VR). Lindahl is co-director of the SeRC strategic research area for e-Science, director of the bioinformatics platform at Science for Life Laboratory, and chairs the Scientific steering committee of the Partnership for Advanced Computing in Europe (PRACE) EU infrastructure.



Contact: erik.lindahl@scilifelab.se

Professor Ilona Koupil, Stockholm University (SU), Karolinska Institutet (KI)

Ilona Koupil is Professor of Health Equity Studies/Public Health Medicine at the Centre for Health Equity Studies (CHESS) of Stockholm University/Karolinska Institutet and Guest Professor in Social Epidemiology, especially Children and Adolescents, at the Department of Public Health Sciences of Karolinska Institutet.

Ilona's background is in paediatrics, epidemiology and public health. Before joining Stockholm University and Karolinska Institutet, Ilona had worked as a research student and a post-doctoral fellow at the Uppsala University and as a clinical senior lecturer in Epidemiology at the London School of Hygiene and Tropical Medicine.

Ilona's current and recent research activities are in the field of social and life course determinants of health and the developmental origins of health and disease. Ilona is the principal investigator of the "Uppsala Birth Cohort Multigenerational Study" (<http://www.chess.su.se/ubcosmg/>) and a co-investigator within the "SIMSAM Lund" project (http://www.med.lu.se/simsam_lund) and the "Mothers and Their





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Children's Health" (MaTCH) study at the University of Queensland (<https://www.alswh.org.au/match-about>).

She also co-ordinates the work of Swedish researchers within the EU funded "Ageing Trajectories of Health: Longitudinal Opportunities and Synergies" (ATHLOS) project (<http://athlosproject.eu/>). Ilona has contributed to initiatives on social determinants of child health coordinated by WHO and UNICEF and is extensively involved in teaching social and life course epidemiology at Stockholm University and Karolinska Institutet. Contact: ilona.koupil@chess.su.se

Professor Ung-il Chung/Yuichi Tei, The University of Tokyo (UTokyo)

Dr. Ung-il Chung/Yuichi Tei is Professor at Department of Bioengineering, Graduate School of Engineering and also at Center for Disease Biology and Integrative Medicine, Graduate School of Medicine, The University of Tokyo. He graduated from The University of Tokyo Faculty of Medicine to obtain MD in 1989. After working as a Resident and Clinical Fellow in Internal Medicine at The University of Tokyo Hospital, he entered and graduated from The University of Tokyo Graduate School of Medicine to obtain PhD in 1997.



During the period at graduate school, he joined, as a Research Fellow, Endocrine Unit at Massachusetts General Hospital & Harvard Medical School, Boston, MA in 1995.

In 1998, he was appointed Instructor in Medicine, Harvard Medical School, and then in 2001 Assistant Professor of Medicine. In 2002, he came back to his alma mater, started working at Graduate Schools of Medicine and Engineering. Since 2007, he is holding his current position.

His research area is skeletal biology, skeletal regenerative medicine, and biomaterials. As a physician scientist, he attempts to create high-performance biomaterials by integration of materials science and life science. In 2013, he was appointed Research Leader and Deputy Director of Center of Innovation "Self-managing Healthy Society", in which he has been working on problems facing ageing society. He attempts to drastically decrease hospital and clinic visits by visualization of health risks, disease prevention and medical technology innovation, mainly focusing on voice analysis, ultrasound, ICT, and behavior change technologies. Contact: tei@tetrapod.t.u-tokyo.ac.jp

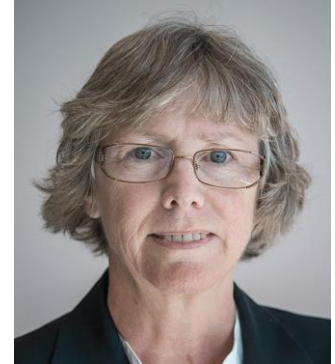


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Professor Nancy L. Pedersen, Karolinska Institutet (KI)

Nancy L. Pedersen is a Professor of Genetic Epidemiology at Karolinska Institutet. A graduate of the University of Minnesota (B.A.) and the University of Colorado (M.A., Ph.D.), she has been at Karolinska Institutet for 35 years, served as the vice chair and chair of the Department of Medical Epidemiology and Biostatistics, and as the Vice Dean of research at KI. She is a member of the Nobel Assembly at Karolinska Institutet, which awards the Nobel Prize in Physiology or Medicine. As principal investigator of several twin studies of aging, Pedersen has studied how genetic influences may change in importance later in life.



Her current research efforts are focused both on gene-environment interplay in healthy aging as well as on the etiology of chronic diseases of the elderly including dementia, Parkinson's disease, late onset depression and cardiovascular disease. Key to her research is the study of comorbidity and the extent to which there are pleiotropic and epistatic effects explaining these comorbidities and associations. She is currently identifying the mechanisms by which methylation patterns in the brain and blood change with cognitive decline, dementia and cardiovascular disease. Dr. Pedersen has over 600 peer-reviewed publications in scientific journals and has mentored 30 PhD students and 16 postdocs. Contact: Nancy.Pedersen@ki.se

Professor Hedvig Kjellström, Royal Institute of Technology (KTH)

Hedvig Kjellström is Professor of Computer Science at KTH, and Head of the department of Robotics, Perception, and Learning. Kjellström's research concerns the automated analysis of human activity and communicative behavior.

She received an MSc in Engineering Physics and a PhD in Computer Science from KTH in 1997 and 2001, respectively. The topic of her doctoral thesis was 3D reconstruction of human motion in video.



Between 2002 and 2006 she worked as a scientist at the Swedish Defence Research Agency, where she focused on Information Fusion and Sensor Fusion.

In 2007 she returned to KTH, pursuing research in activity analysis in video. Her present research focuses on the modeling of perception and production of human non-verbal communicative behavior and activity, with applications in Social Robotics, Performing Arts, and Healthcare.



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Institutet



In 2010, she was awarded the Koenderink Prize for fundamental contributions in Computer Vision for her ECCV 2000 article on human motion reconstruction, written together with Michael Black and David Fleet. She has written around 80 papers in the fields of Robotics, Computer Vision, Information Fusion, Machine Learning, Cognitive Science, Speech, and Human-Computer Interaction. She is mostly active within the areas of Robotics and Computer Vision, where she is an Associate Editor for IEEE TPAMI and IEEE RA-L, and an Area Chair for ICCV 2017, Humanoids 2017, and ICRA 2018. Contact: hedvig@csc.kth.se

13.15-13.25 Presentation of the Japan Society for the Promotion of Science (JSPS)

Professor Tadaharu Tsumoto, Japan Society for the Promotion of Science, Osaka University (OU)

Tadaharu Tsumoto is the Director of Japan Society for the Promotion of Science (JSPS) Stockholm Office and Professor Emeritus, Osaka University. He graduated from Osaka University Medical School, Japan in 1967. After having obtained M.D. and then Ph.D. from Osaka University in 1975, he moved to Max-Planck Institute for Biophysical Chemistry in Göttingen, Germany and worked as a postdoc until 1977.



Thereafter he moved to Department of Physiology, Kanazawa University School of Medicine, Japan as an Associate Professor. In 1980-1981, he worked in School of Optometry, University of California Berkeley, USA as a Visiting Researcher.

In 1983, he was promoted as Professor of Department of Neurophysiology, Osaka University Medical School. In 2005, he moved to Brain Science Institute (BSI), RIKEN, Japan as a Unit Leader (until 2008), and then a Senior Team Leader (until 2015). In 2011-2015 he served as Deputy Director of BSI. In 2016, he came to Sweden as the Director of JSPS Stockholm Office. Regarding services to academic societies, he was Secretary General of the Japan Neuroscience Society (JNS) in 1999-2004 and President of JNS in 2005-2010. He served as Treasurer of Federation of Asian-Oceania Neuroscience Societies (FAONS) in 1998-2006. Also he was a member of International Brain Research Organization (IBRO) Asian-Pacific Regional Committee (APRC) in 2004-2010 and Chair of the IBRO APRC in 2011-2012. In 2015-2016 he served as Program Director of the Agency for Medical Research and Development (AMED), Japan. Since 2007 to 2017 he has served as a member of Brain Science Committee of the Japanese Government. His research aim is to understand how functional development of the brain is influenced by early postnatal environments. His studies focused on functional plasticity of neural circuits in the mammalian visual cortex.



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13.30-15.15 Personalized medicine: Biomedical approach

Professor Haruhiko Bito, The University of Tokyo (UTokyo)

Dr Bito is currently Professor and Chair of the Department of Neurochemistry, and also Director of the Medical Scientist Training Program at the University of Tokyo School of Medicine. The ambition of Dr Bito's laboratory is to go beyond just understanding the makeup of the synapses, and to tease apart the molecular, cellular and systems principles underlying activity-dependent changes in neuronal circuitry during learning and memory.



In particular, the Bito laboratory pioneered in deciphering the intricate and interactive relationship between the information encoded in the genome and the ongoing synaptic activity, and showed the critical role of CREB-Arc signaling in controlling long-term memory formation and maintenance of long-lasting changes within the brain.

Haruhiko Bito graduated from the University of Tokyo with an MD and a PhD in Biochemistry in 1993. After finishing a postdoc in Molecular and Cellular Physiology at Stanford as a HFSP long-term fellow, Dr Bito started his own laboratory in Pharmacology at Kyoto University in 1997. He expanded his research group significantly, when he moved to the Department of Neurochemistry at the University of Tokyo in 2003. He is the Leading Investigator of a National Consortium Project on "Brain information dynamics underlying multi-area interconnectivity and parallel processing". Contact: hbito@m.u-tokyo.ac.jp

Professor Bengt Winblad, Karolinska Institutet (KI)

Professor Bengt Winblad is the Head of the Division of Neurogeriatrics at Karolinska Institutet and Director of the Swedish Brain Power Programme, a national network of experts in the Alzheimer field in Sweden spanning from basic – clinical – epidemiological and caring research. Bengt Winblad is Professor of Geriatric Medicine at Karolinska Institutet and is co-Head of the Clinical Trial Center at the Memory Clinic, Karolinska University Hospital in Huddinge. His current main research focus is drug development.



He is, since 2001, chair of the European Alzheimer Disease Consortium (EADC), currently consisting of 66 excellent clinical research centers across Europe, and he is a member of the Senate for the German national network on neurodegenerative disorders, DZNE. He was the PI of the first EU Joint Program



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project, BIOMARKAPD which aimed at standardizing sampling and measurement of biomarkers in Alzheimer and Parkinson disease. He has been given numerous international and national awards for his research.

He has also founded a number of international conferences, eg the International Conference of Alzheimer's Disease (ICAD, renamed AAIC) and the International Pharmacoeconomic Conferences on AD (IPECAD). He was a member of the Nobel Assembly, Karolinska Institutet 1988 – 2010. In 2009, he was recognized the world's most prolific researcher in AD by the Journal of Alzheimer's Disease and in 2016, he was recognized as one (out of five from Karolinska Institutet) of the most cited scientists in the world. Contact: Bengt.Winblad@ki.se

13.30-14.30 – Main lectures

Professor Takeshi Iwatsubo, The University of Tokyo (UTokyo)

Takeshi Iwatsubo, M.D. is a Professor and Chair of the Dept. of Neuropathology, Graduate School of Medicine of the University of Tokyo (UTokyo), whose research interests include Alzheimer's disease, molecular neuropathology, and disease-modifying therapies. Prof. Iwatsubo has served as a principal investigator (PI) for the Japanese AD Neuroimaging Initiative (J-ADNI) project, and is currently PI of the Japan branch of the A4 Study, an anti-A β intervention study on preclinical AD.



He has received numerous honors for his work, including the Alzheimer's Association Henry Wisniewski Lifetime Achievement Award in 2010 and the Potamkin Prize for Research in Pick's, Alzheimer's disease and Related Diseases in 2012.

Prof. Iwatsubo graduated with an M.D. from UTokyo in 1984, after which he became a Resident in Internal Medicine (1984-1985) and a Senior Resident in Neurology (1985-1989) at the Faculty of Medicine. He continued his career at UTokyo, working as an Assistant Professor in the Dept. of Neuropathology, Institute for Brain Research, Faculty of Medicine (1989-1992), and then becoming an Associate Professor of the Dept. of Neuropathology and Neuroscience, Faculty of Pharmaceutical Sciences (1992-1996). He received his Ph.D. in Medical Science in 1991. He was awarded a tenured position in the Dept. of Neuropathology and Neuroscience (1996-1998), after which he was appointed as a Professor (1998). In 2007, he began his current positions as Professor and Chair in the Dept. of Neuropathology, and PI of the Japanese Alzheimer's Disease Neuroimaging Initiative.



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In addition to his multiple clinical research roles as PI, Prof. Iwatsubo has also contributed to the study of human neurodegenerative disorders in a laboratory setting. He demonstrated that A β 42 is the initially deposited species in senile plaque amyloid, elucidated the process of γ -secretase complex formation, and identified that α -synuclein — especially a hyperphosphorylated form — is a component of Lewy bodies.

Prof. Iwatsubo is a member of the Society for Neuroscience and the American Association of Neuropathologists, and is a member of the Editorial Board for the *Journal of Biological Chemistry*, *Molecular Neurodegeneration*, and *Biochimica et Biophysica Acta*, as well as serving as an ad hoc reviewer for a number of other scientific journals. Contact: iwatsubo@m.u-tokyo.ac.jp

Professor Joakim Lundeberg, Royal Institute of Technology (KTH)

Joakim Lundeberg is Professor in Gene Technology, and is also the Director of the Genomics platform at Science for Life Laboratory. Joakim Lundeberg received a professorship in Molecular Biotechnology 2000. Today he heads the division of Gene Technology, part of the School of Biotechnology. He is also the director of the Genomics platform at Science for Life Laboratory that hosts the national infrastructure for massive parallel sequencing center, SNISS. Joakim Lundeberg defended his PhD thesis in biotechnology at KTH in 1993.



After a postdoctoral period at the Radiumhospital in Oslo, he returned to KTH as group leader. The research group of Professor Lundeberg is involved in innovative technology development for DNA/RNA analysis. The development of new technologies for DNA/RNA analysis has revolutionized research in the life sciences; KTH's engineering heritage of which Professor Lundeberg is part has enabled the university to make a pioneering and distinctive contribution to the field.

Ongoing activities within Professor Lundeberg's group stem from a tradition of methods development initiated in the early 90s with manipulations of DNA on monodisperse paramagnetic beads. Solid-phase technology remains a core area for method development in combination with emulsion technology, single cell analysis, whole transcriptome and genome approaches, nanopore technology, FACS etc. This set of new technologies is often used in interdisciplinary research programmes such as in cancer, stem cell and wood biology.

Joakim is also the co-founder of Magnetic Biosolutions, Woodheads AB (major shareholder of SweTree Technologies AB), Sedna Biotechnologies AB. He is also the inventor of a number of patents, and has published more than 200 scientific papers and reviews in international peer-reviewed journals, and has supervised 25 PhD students to their dissertation. Contact: joakim.lundeberg@scilifelab.se



14.30-15.15 – Discussion

Professor Taisuke Tomita, The University of Tokyo (UTokyo)

Taisuke Tomita is a Professor in the Graduate School of Pharmaceutical Sciences of the University of Tokyo (UTokyo), whose research field interests include neurology, psychiatry, cell biology, neuroscience, and molecular biology. Prof. Tomita has received numerous honors and awards for his work, including Erwin von Balz prize in 2011, Basic Research award from the Japan Society for Dementia Research in 2013, as well as a NAGASE Science and Technology Foundation Award in 2015.



Additionally, Prof. Tomita is a member of several professional bodies such as The American Society for Biochemical and Molecular Biology (ASBMB), the Japan Society for Dementia Research (where he has been a council member from 2007, and an auditor from 2017), The Japan Neuroscience Society (Future Planning Committee member for from 2017) and the Pharmaceutical Society of Japan (PSJ). He also serves as a member of the editorial board for a number of scholarly publications, including *PLoS One* (2012-present), the *Journal of Biological Chemistry* (JBC) (2013-present), and *Scientific Reports* (2016-present).

Prof. Tomita received his B.S. (1995), M.S. (1997), and Ph.D. (2000) in Pharmaceutical Science from UTokyo, and has been a Visiting Scientist at Washington University in St. Louis where he conducted research on Notch biology under a Japan Society for the Promotion of Science (JSPS) postdoctoral fellowship for research abroad (2004-2005). He first held the position of Instructor at the Graduate School of Pharmaceutical Sciences, UTokyo (1997-2003), then becoming an Assistant Professor (2003-2006), Associate Professor (2006-2014), and was appointed to his current position of Professor in 2014. Contact: taisuke@mol.f.u-tokyo.ac.jp



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Professor Torbjörn Åkerstedt, Stockholm University (SU) and Karolinska Institutet (KI)

Torbjörn Åkerstedt is Senior Professor at the Department of Clinical Neuroscience, Karolinska Institutet, director of Stockholm Stress Center and associated with the Stress Research Institute at Stockholm University. He has written more than 300 papers on sleep, stress and related issues. He is a former President of the European Sleep Research Society and former Secretary general of the World Federation of Sleep Research and Sleep Medicine Societies, former director of the Stress Research Institute, Stockholm University, as well as former director of Stockholm Stress Center (Stockholm University and Karolinska Institutet).



Present research interests include aging and its paradoxical relation to sleep and fatigue, sleep duration and mortality, neural mechanisms of sleepiness and poor sleep, stress and sleep (epidemiology and physiology), gender differences in sleep (epidemiology and physiology). Contact: torbjorn.akerstedt@su.se

15.30- 17.15 Health promotion and prevention: Social sciences approach

Professor Håkan Fischer, Stockholm University (SU) and Karolinska Institutet (KI)

Håkan Fischer is Professor in Biological psychology and Head of department at the Department of Psychology, Stockholm university. He is also associated with Aging Research Center (ARC), Karolinska Institutet. His primary area of research is individual differences in emotion processing and brain function with a specific focus on aging.



Current research lines are: (1) the development of Artificial intelligence (AI) that accurately can read and interpret emotional expressions in faces and voices, (2) the study of the effect of sleep deprivation on emotional processing and its neurobiological base, (3) the effect of social stress in young and older adults, (4) the effect of oxytocin on socio-emotional processing and its neurobiological basis in younger and older persons, (5) the study of individual differences in recognition of socio-emotional information and training



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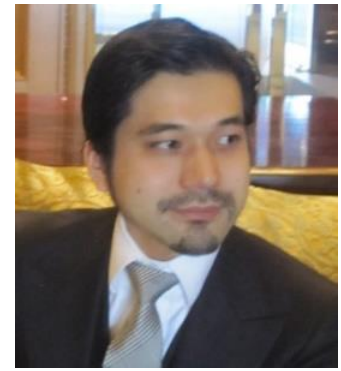


of the ability to detect socio-emotional information, and finally (6) emotional regulation focused on habituation and extinction in younger and older adults.

He uses functional magnetic resonance imaging (fMRI), positron emission tomography (PET) and functional near-infrared optical brain imaging (FNIRS) to study brain function and structural MRI to study brain structure (DTI and perfusion).

Assistant Professor Astushi Hiyama, The University of Tokyo (UTokyo)

Dr. Atsushi Hiyama is a Lecturer in Research Center for Advanced Science and Technology, The University of Tokyo, where he has been since 2006. He graduated from the University of Tokyo with a B.E. in 2001 and M.S. in 2003 and received a Ph.D. in Engineering from the University of Tokyo in 2006. His research interests center on designing and implementing augmented reality, ubiquitous computing, and human-robot interaction systems. He introduced “ubiquitous gaming” as the world’s first large-scale application of a ubiquitous computing for the museum guidance system at the National Museum of Nature and Science in Tokyo in 2004.



His current research is focused on application of such technologies to support the Hyper-Aging Society in Japan. He invented fitness-training system for older adults using Virtual Reality and physical skill transferring system using Wearable computer. He is also promoting social participation of the elderly using ICT: social networking services, crowdsourcing, and teleworking.

He received Laval Virtual Trophy in 2005, ACM VRST Best Poster Award, APCHI 2008 Best Paper Award, and IFIP Accessibility Award in 2011. Contact: hiyama@star.rcast.u-tokyo.ac.jp



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15.30-16.30 – Main lectures

Professor Katsuya Iijima, The University of Tokyo (UTokoyo)

Katsuya Iijima is a Professor at Institute of Gerontology, The University of Tokyo (UTokyo). His main research interests are: Geriatric medicine (especially, Cardiovascular medicine), Gerontology, prevention of frailty due to sarcopenia and Patient-centered Home medical care.

He is a member of The Japanese Society of Internal Medicine, Japanese Circulation Society, The Japan Geriatrics Society, The Japan Atherosclerosis Society, The Japanese Society of Hypertension, Japanese Society of Anti-Aging Medicine, Japanese Mibyo System Society Japan, Society for Dementia Research, Japan Society for Biomedical Gerontology, The Japanese Society for Parenteral and Enteral Nutrition, Japan Society of Medical Education and Japanese Society of Public Health.

Iijima received his M.D. (1990) from Jikei Medical University and Ph.D. (2001) from the University of Tokyo. He has also studied at Stanford University (CA, USA) 2002-2004 doing basic research as Research Fellow of Cardiovascular Medicine. He first held position of Fellow in Geriatric Medicine at UTokyo Hospital (1997-2001), then became Instructor (2001-2002, 2005-2006), Assistant Professor (2006-2011), Associate Professor (2011-2016) and was appointed to his current position of Professor in 2016. He has also been a member in The Japan's Plan for Dynamic Engagement for All Citizens since 2015. Contact: iiijima@iog.u-tokyo.ac.jp



Francesca Mangialasche, Karolinska Institutet (KI)

Francesca Mangialasche is a medical doctor, specialized in Geriatrics, with a PhD in Medical Science. Her research activity is based on a scientific collaboration between the Aging Research Center, Center for Alzheimer Research, Karolinska Institutet/Stockholm University; the Institute of Gerontology and Geriatrics, University of Perugia, Italy; the Finnish National Institute for Health and Welfare, Helsinki; and the Department of Neurology, University of Eastern Finland (Kuopio campus).





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Her research focuses on clinical and neuropsychological aspects of brain aging and dementia, and on biological studies of brain aging with a specific emphasis on blood-based markers, and Oxidative/Nitrosative Stress and Antioxidants in Dementia/Alzheimer's disease in elderly people. Francesca also collaborates with research projects studying multi-morbidity in the elderly.

Francesca is a member of the Nordic Brain Network (NBN, www.nordicbrainnetwork.com), an international and multidisciplinary research group and collaborative forum lead by Professor Miia Kivipelto. The NBN conducts several studies on Alzheimer's disease and dementia with a translational approach. Main preventive trials done by the group include FINGER (Finnish Geriatric Intervention Study to Prevent Cognitive Impairment and Disability) and MIND-AD (Multimodal preventive trials for Alzheimer's disease, www.mind-ad.eu), which are at the forefront of international efforts to develop intervention strategies to prevent or delay the onset of cognitive impairment and Alzheimer's disease.

Francesca is a co-founder of the European Dementia Prevention Initiative EDPI (www.edpi.org), an international collaboration aiming to improve preventive strategies against dementia and Alzheimer's disease. Within EDPI, she collaborates in the Healthy Aging Through Internet Counselling in the Elderly trial (HATICE, www.hatice.eu). Contact: Francesca.Mangialasche@ki.se

16.30-17.15 – Discussion

Professor Hui-Xin Wang, Stockholm University (SU)

Hui-Xin Wang is a Professor of Social Epidemiology (Ph.D., 2001, Karolinska Institutet) at Stress Research Institute, Stockholm University. Her main research areas are: epidemiology of neurodegenerative diseases in the elderly and of cardiovascular disease in middle age.

Her research interests including (1) influence of lifestyle (smoking, vitamin B12 and folate, social network, and leisure activities) and psychosocial factors (personality, work stress, sleep, life-course cognitive reserve enhancing factors) and their interactions with genetic factors on risk of dementia, cognitive decline, metabolic health, depression and mortality; and (2) impact of psychosocial factors (social support, work stress, and depressive symptoms) on progression of coronary heart disease. Contact: huixin.wang@su.se





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Professor Hugo Westerlund, Stockholm University (SU)

Hugo Westerlund is Professor of Epidemiology (Ph.D., 2005, Karolinska institutet) and Head of the Stress Research Institute, Stockholm University with expertise also in stress research, psychology and psychosocial medicine. His main research interests are: health effects of the psychosocial work environment, especially in the context of an ageing workforce, determinants and consequences of retirement and labour market exit, as well as methodological development for better understanding of causality in observational studies.



He is the PI of the Swedish Longitudinal Occupational Survey of Health (SLOSH), a nationally representative prospective panel study (n=40,877) which provides data for investigations of longitudinal relationships between work organisation, work environment, labour market participation, health, and well-being, taking social conditions, individual differences, health behaviours, coping, work-private life interaction, sleep, and ageing into account. He is furthermore PI of the Forte research programme 'Healthy and Productive Work in Later Life: Longitudinal studies of the determinants of a sustainable working life for the ageing population' and the coordinator of the IDEAR network (Integrated Datasets in Europe for Ageing Research, www.idear-net.net/). Contact: hugo.westerlund@su.se

Professor Britt Östlund, Royal Institute of Technology (KTH)

Britt Östlund is a Professor in the Department of Health Systems Engineering, specializing in the study of Technology, Ageing and Design and implementation of new technologies in health care by promoting the collaboration between The Royal Institute of Technology and the Red Cross University College. The goal for this collaboration is to transform nurses' experience into artifacts and systems that support their work and increase citizens' trust in healthcare through participation in innovation processes.



She has twenty five years of experience in developing products and services to promote modern ageing and methods for user driven innovations as Professor in Welfare Technology at Lund University and responsible for the Ageing and Design program. Contact: britt.ostlund@design.lth.se

End of day 1



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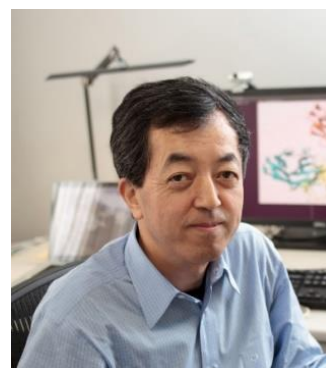
Friday 22 September

9.00-12.00 Group Discussions

Towards healthier ageing: Biophysical approach

Professor Hideaki Fujitani, The University of Tokyo (UTokyo)

Hideaki Fujitani is the Professor at the Research Center of Advanced Science and Technology (RCAST), the University of Tokyo. He is also a project member of Priority Issue on Post-K computer (Building Innovative Drug Discovery Infrastructure Through Functional Control of Biomolecular System) supported by MEXT (Ministry of Education, Culture, Sports, Science and Technology, Japan). He studies thermodynamic characters of biomolecules by performing large-scale molecular dynamics simulations on high performance computers.



He developed the massively parallel computation method of an absolute binding free energy of protein and ligand based on the nonequilibrium equality of free energy between thermodynamic states. He is developing a FUJI force field to describe arbitrary organic molecules in a unified manner including proteins, nucleic acids, small molecules, and lipids.

In contrast to the common empirical fitting to experimental data, he uses the first principle theoretical method to refine the force field. After finishing the doctor degree course of science in the University of Tokyo, he joined a Japanese computer company FUJITSU. He studied materials science and developed semiconductor technologies and a massive parallel computer in the FUJITSU laboratory. He engaged in the development of 90 nm semiconductor technology which was used by D. E. Shaw Research for the molecular dynamics special computer ANTON. After the 25 years' research life in FUJITSU he moved to the University of Tokyo in 2010. Contact: fjtani@nifty.com



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Personalized medicine: Biomedical approach

Davide Vetrano, Karolinska Institutet

Davide L. Vetrano is a PhD student in geriatric epidemiology at the Aging Research Center – Karolinska Institutet, under the supervision of prof. Laura Fratiglioni. He is a medical doctor specialized in geriatric medicine (Catholic University of Rome). His main research interests are: 1) The impact of multimorbidity and frailty on older people's health. 2) Comprehensive geriatric assessment and multidimensional assessment tools. 3) Medication utilization, polypharmacy and quality of prescription in older adults; 4) Long-term care services' quality assessment (i.e. home care, nursing home). 5) Cardiovascular dysautonomia in Parkinson's disease.



He is currently working on data from a large Swedish database; the Swedish National Study on Aging and Care in Kungsholmen (SNAC-K) and from several other big databases from multicentre European and Italian studies (e.g. SHELTER, IBenC, AdHoc, CRIME). Contact: davide.vetrano@ki.se