2nd HealthAge Newsletter

MARIE SKLODOWSKA-CURIE ACTIONS

Innovative Training Networks (ITN)

Joint Training and Research Program on

Lifespan Regulation Mechanisms in Health and Disease

The ITN-HealthAge is centered around 15 young early-stage Researchers whose work is focused on research aims structured into three functionally-linked thematic areas:

Functional insights into lifespan regulation mechanisms

Longevity assurance pathways in development and disease

Novel approaches against age-related diseases and progeria

Our news

Kick-off meeting – IMBB, Heraklion – 15-16 May 2019

Project management course – teleconference – 18 June 2020

1st Annual meeting – teleconference – 7 July 2020

Coming up

1st Workshop – Developmental Circuits in Aging – 28-31 May 2021, Heraklion, Crete
https://meetings.embo.org/event/20-aging

2nd Annual meeting – 18 March 2021

Learn more on
https://itn-healthage.gr/index.php/news

https://www.facebook.com/ITN-Healthage-115255713265244

@HealthAgeITN

Look for our past and upcoming newsletters on
https://www.itn-healthage.gr/

Meet our young bright minds

Hello everyone! I am Christina and I studied Biology with a focus on Molecular Biology and Biomedicine at the University of Crete. Currently I am working on a cellular process of programmed cell death, called apoptosis, in Prof. Schumacher's lab in Cologne. Apoptosis is required in order to eliminate aberrant and damaged cells during development while it can also be induced by genotoxic stress. Through Healthage ITN program I have the chance to investigate new factors that are involved in the proper regulation of apoptosis upon DNA damage, so that tissue impairment or tumor formation is avoided. **Christina Efraimoglou**

After graduating in molecular biotechnology at Scuola Normale Superiore (Pisa, Italy), I have joined prof. Auwerx's laboratory to start my doctoral studies. The focus of our laboratory are the mitochondria, the pathways that regulate their functionality and their role in health, aging and disease. We use a combination of approaches including bioinformatic tools, *in vitro* cell biology, *C. elegans* disease models and *in vivo* mice studies. The project I am currently working on was born as a collaboration between our laboratory and the pharmaceutical company NOV Metapharma. We are testing novel compounds that could improve mitochondrial functionality and therefore be beneficial in the context of metabolic diseases and aging. **Alessia De Masi**

After finishing my Bachelor in Biomedical Sciences at Edinburgh Napier University, I deepened my knowledge in cellular and molecular mechanisms that underlie physiological and abnormal processes, with a Master in Molecular Biology and Biotechnology in the University of Groningen. Currently, I am an Early-Stage Researcher in Healthage ITN, studying the role of mitophagy in neuronal physiology and neurodegeneration during ageing in FORTH-IMBB, in Crete. Nuclear hormone receptors (NRs) have a crucial role in important processes across taxa, such as development and metabolism. *Caenorhabditis elegans* is a very good model to study ageing, as it has a short lifespan and large brood size. It contains around three hundred NRs, mainly involved in molting and development. My project is focused on the investigation of the role of NRs in mitophagy, as their efficiency is usually decreased during ageing and neurodegeneration. **Dikaia Tsagkari**

https://www.itn-healthage.gr/index.php/fellows

I studied Molecular Biology and Genetics at the Istanbul Technical University, Turkey. Then I moved to the UK for my Master's degree and studied Cell Biology at the University of Manchester. During my studies, I worked on different topics including; myeloid cell differentiation and endocytosis in zebrafish neuroepithelium. I'm currently an ITN Fellow in the HealthAge network in Nollen Lab at ERIBA in Groningen and my project focuses on age-related neurodegenerative disease, ALS. I'm hoping to find disease mechanisms and uncover targets to suppress ALS-related TDP-43 toxicity. In my research, I am using a combination of genetic- and phenotypic screens in a *Caenorhabditis elegans* model for the disease. **Lale Güngördü**

I completed my undergraduate degree in chemistry and master's degree in biochemistry in Edinburgh, Scotland before moving to Basel, Switzerland to join the ESR network. My area of interest is mTOR signalling, which plays a central role in the aging process as well as many diseases such as cancer. In particular, I am interested in using structural biology techniques as well as biochemistry to understand protein interactions with mTOR. I hope that my research will contribute to gaining a better understanding of various mechanisms within the cell, which is crucial in understanding aging and disease. **Louise-Marie Craigie**

Hi! I am a PhD candidate in the Institute of Molecular Biology and Biotechnology in Crete, Greece. I was always delighted by research regarding life and how the cells work so I applied for the PhD position in HealthAge network of Marie Currie. During this program I am working on cellular post-transcriptional regulation upon DNA damage. I am searching how cells respond in different types of damage regarding mostly the RNA metabolism. I am very glad to be part of HealthAge Network and have the opportunity to contribute to in the amazing world of science! **Vivian Kalamara**

I obtained my undergraduate degree in Chemistry in the Department of Chemistry of the University of Crete. During my studies, I was amazed by biochemistry and that was the reason why I decided to conduct my Masters in Neurosciences, in order to apply my knowledge in the complicated and mysterious circuits of the brain. I got interested on how neuronal networks work and are maintained and how perception and higher conceptual cognitive functions are regulated in the brain. I am excited joining the laboratory of Vassiliki Nikoletopoulou as an ESR. During my PhD thesis, I am trying to define the role of autophagy in brain ageing and its contribution as a potential target to prolong lifespan. **Akrivi Daskalaki**

I am an Italian 2nd-Year-PhD student in the laboratory of Eric Gilson at the Institute for Research on Cancer and Aging in Nice. Before joining my current laboratory, I obtained a MSc in Biotechnology from the Biotechnology and Biological Sciences School at the University of Milano-Bicocca and carried out my MSc thesis at the Harvard Medical School in Boston. I later worked as a laboratory technician at the Institute for Research in Biomedicine in Bellinzona, and as a research assistant in the department of Immunology and Infectious Diseases at the King's College London.

After these highly formative international experiences I was now looking for an exciting and challenging PhD opportunity – an at-least-3-year-long path in which giving all my best willing to put one more little brick on top of the wall of scientific knowledge.

As the only certainty in life, aging is the phenomenon that always fascinated me, as well as the intricacy and beauty of the nervous system, such a complex and intriguing compartment of the human body upon which all our feelings and emotions, habits and customs, depend on. Therefore, investigating the process of aging in such a context was my ultimate goal. I wanted to participate to the enterprise studying the molecular mechanisms driving this process with the final aim to understand how to "control" it and live healthier, longer and happy lives. When I came to know about the chance to pursue this idea in the honoured Gilson team, in the context of a prestigious international research network such as the MSCA-ITN-HealtAge-2020, I applied hoping to get the position I was dreaming of. Few weeks later (October 2019), there I was in Nice beginning to investigate "The Role of Telomeres in Neuronal Aging", an amazing and challenging project that elegantly joined my uttermost interests.

So far, I can already say that I have learned a lot (really a lot!), both as a researcher and as a human being. The journey just started and with all the complications due to the Covid19 pandemic it was not an easy start. Despite the time lost during the confinement, we were anyways able to obtain interesting preliminary results and, with the power of will characterizing eager scientists, we are going down our research path stronger than ever. The way to go is still very long, and it will be full of exciting but also tough moments, because nothing big comes easy. After all, this is to me the great teaching of science and why I think it is really worth it: if you want something, you really have to believe you can get it. This implies a dramatic growing up from both a personal and professional point of view and, most importantly, all this has a collateral beauty: the result of this individual growth is an increased scientific knowledge (the "one more little brick on top of the wall") to be shared with the whole world to benefit from it.

Marco Raffaelli

I studied Mechanical engineering in my home country, Greece, at the University of Thessaloniki. My continuously growing passion for bioengineering and biotechnology first led me to the Laboratory of Hemodynamics and Cardiovascular Technology at EPFL as a master thesis student. To further my knowledge in biotechnology and fulfill my aspiration of developing cutting-edge biological technology, I decided to pursue a PhD at Nagi Bioscience, a dynamic Swiss startup developing innovative "Organism-on-Chip" technology and bioinformatics tools. The HealthAge ITN network gave me this great opportunity to apply creatively the knowledge of engineering and biology for developing innovative automated microfluidic bio-assays to study aging and age-related diseases using the model organism C. elegans. I believe that my participation in this scientific network is an excellent preparation for a future career in delivering biological technology innovation. **David Liaskos**

I'm from Bordeaux in France where I graduated from my Bachelor's degree in Life Science. After one year in Erasmus in Prague, I moved to Paris-Sud 11 (Paris-Saclay) where I received my Master's degree in Cell Biology. Now I am in Italy for the PhD, in the Laboratory of prof. Luca Scorrano in Padova. The laboratory focuses its research on mitochondria, which are dynamic organelles that undergo constant fusion and fission. Alteration of this mitochondrial dynamics is associated with a lot of diseases, including age-related pathologies. Thus, as part of the HealthAge ITN, my project aims to identify new modulators of mitochondrial fission that are involved in aging. **Erwan Rivière**

I completed my bachelor and master in the double degree of Genetics Magisterium in Paris University. This formation gave me the opportunity to develop my laboratory skills abroad, in Edinburgh University and in New-York University. Then I followed an internship In Dr. Capucine Trollet Laboratory, where I discovered both the bio-informatics and the aging/senescence fields. Applying to HealthAge ITN was the logical way to continue in this path. Prof. Yossi Shiloh offered me an ESR position in his laboratory based in Tel-Aviv University, Israel. This laboratory is historically specialized in the DNA-Damage-Response with the discovery of the ATM gene in 1995. For these reasons, my PhD project focuses on the interface between DNA-repair and Senescence, trying to identify undescribed genes in these two processes. In addition to this wet-bench training, I have the opportunity to develop a bio-informatics side-project in collaboration with Prof. Ran Elkon. This project takes advantage of RNAseq data from our laboratory coupled to public data to describe a link between genomic-instability, senescence and aging. **Yann Frey**

My name is Dionysia Skea, I am from Greece and joined the HealthAge network as a member of ProtATonce, a biotechnology company based in Athens with expertise in biomarker discovery and compound evaluation. My undergraduate studies in the Pharmacy school of Athens lead me to Cardiff University, where I graduated from the MSc Cancer Biology and Therapeutics and gained deep knowledge and research experience in Molecular Biology and mechanisms occurring during cancer development. As part of the HealthAge European network, my project's aim is to study the secretomic and phosphoproteomic profile of aging and senescence in cells of human origin using a proprietary multiplexing platform, and investigate anti-aging strategies to combat age-related conditions. **Sissy Skea**

I believe that if you have curiosity, it can do wonders. I finished my post-graduation in Toxicology from Universität Potsdam, Germany and it was during this time that I got introduced with the research area of DNA damage and DNA repair and developed an inclining interest in this field. I kept following the trail of my curiosity and was fortunate enough to get an amazing opportunity to join HealthAge ITN network. I am currently working at LXRepair, Grenoble and exploring more about DNA repair assays in context to ageing. My current focus is working on fibroblasts derived from the Li-Fraumeni syndrome patients and extrapolating it further to DNA repair. The interesting aspect about the project is its novelty. So far it is progressing well and I am happy to give my contribution to science. **Rajat Bucha**

Choosing a biomedical research career is choosing to explore the world with a magnifying glass: you decide to look for micro-changes with incredibly bigger consequences. I have always been fascinated by the complex world that there is beyond biomedicine. You wake up with a headache, call the doctor, take a pill. Easy. But how all of this has evolved? How did someone discover that this particular pill is proper for your headache? How is your doctor able to explain what is happening in your body and find a cure? The answer is research.

I got my Bachelor and Master of Science in Medical Biotechnology at the Sapienza University of Rome. For my Ph.D., I came to the Institute for Research in Biomedicine in Barcelona to join Manuel Serrano's research group. Here I am studying how cancer cells are able to undergo a stage of dormancy and be responsible for the relapse years after. We are looking for those genes that could be essential for the dormant stage's onset to find new possible drug development candidates against cancer relapse. **Valentina Ramponi**

The ITN-HealthAge Partners


George A. Garinis


Bjoern Schumacher


Johan Auwerx


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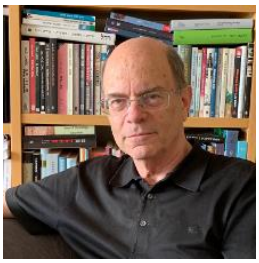
Yosef Shiloh


Vassiliki Nikoletopoulou


Luca Scorrano


Manuel Serrano


Matti Nykter


Sylvie Sauvaigo


Leonidas Alexopoulos


Matteo Cornaglia

Learn more about them and their research on
https://www.itn-healthage.gr/index.php/partners

European Commission

We participated in…

Researchers' Night 2020

Simultaneously in 300 cities around Europe

in virtual format

The **European Researchers' Night**, funded under the Marie Skłodowska-Curie actions (MSCA), is a Europe-wide public event that brings researchers closer to the public.

The Night provides researchers the opportunity to showcase the diversity of science and its impact on citizens' daily lives, and to stimulate interest in research careers – especially among young people. The events highlight how researchers contribute to our society by displaying their work in an interactive and engaging forum.

In 2019, 55 projects were implemented. The projects took place in 433 cities from 27 countries across Europe and beyond. Over 1.6 million visitors attended the event and over **36,000 researchers** took part – including 955 MSCA fellows!

Watch our contribution:

https://www.youtube.com/watch?v=V5223UjvBsQ&feature=emb_title

Find out more on

https://ec.europa.eu/research/mariecurieactions/actions/european-researchers-night_en

Stay tuned for…

Video demonstrations of scientific protocols

Interviews with leading science experts on lifespan, ageing and disease

Join us…

Our co-ordinator George A. Garinis is organizing the EMBO Workshop on Developmental Circuits in Aging
28-31 May, 2021
https://meetings.embo.org/event/20-aging

Our partner Vassiliki Nikoletopoulou is organizing the EMBO Workshop on Autophagy in brain health and disease
24-27 March, 2021
https://meetings.embo.org/event/21-autophagy