“Our vision is to shape the future of Neuroscience by putting young researchers in the driver’s seat” says Yiota (Panayiota) Poirazi, a Director of Research at IMBB-FORTH in Heraklion, Crete and the first elected chair of the “FENS-Kavli Network of Excellence”. “We plan to achieve this goal through a number of activities that aim at improving Neuroscience in Europe and where young Neuroscientists are the key players.” These activities include providing opportunities for young scientists, influencing science policy, and facilitating the exchange between science and society.

Strikingly, the first issue that rose unanimously during the first meeting of the scholars was a great concern about the prospects of young Neuroscientists in establishing a successful career in Europe and beyond. According to Yiota Poirazi, “The struggles that a young Neuroscientist has to endure in order to establish excellence, independence and recognition touch upon many different aspects of scientific careers, ranging from publication issues to grant application procedures, things like setting up a lab and attracting qualified people, balancing career and family life, etc. We thought it would be useful to share our own experiences and what we learned from them by writing a series of articles that can serve as a roadmap towards a successful career in the amazing field of Neuroscience.” The articles identify problems and offer solutions for young Neuroscientists in a wide range of career matters and will be published monthly in the European Journal of Neuroscience starting with August 2015.

Get Involved in our events at FENS Forum 2016 (2-6 July, Copenhagen)

- **July 2nd 17.00-18.00**
  New FENS-KAVLI Scholars (2016-2020): Opening Ceremony

- **July 3rd 12.00-13:45**
  CHET event: Code of Conduct and Ethics in Science

- **July 3rd 20.00-22:30**
  PubTalks: Informal talks and discussions with Neuroscientists at local pubs

- **July 4th 17.10-17.30**

- **July 4th 19.15-21.15**
  EJN Social: Your guide to independence: building a successful career in neuroscience

- **July 5th 18.45-21.00**
  FENS-Kavli Network of Excellence social event: Blending Science and Cooking: a Complete Sensory Experience

- **July 5th 18.45-21.00**
  CHET event: Women in Neuroscience
**Q&A with Marian Joëls and Monica Di Luca, past and current FENS presidents**

- **How did the idea of a Network of young neuroscientists emerge?**
  
  **MJ:** It was the one thing I wanted to accomplish during my presidency. It is important for FENS to keep in touch with the next generation, the Neuroscience leadership of tomorrow. And whatever we can do to advance the careers of this group is highest priority of FENS.
  
  **MDL:** This was a project proposed by Marian Joëls during her presidency. I was extremely happy to endorse it during my term and I consider to liaise with the younger generation of colleagues one of the most important task for FENS.

- **How did this evolve over time (current product vs. first idea)?**
  
  **MJ:** We needed to get started first, so we discussed this idea with various parties to secure resources. But after that it was really up to the group of elected Fellows to shape the network.
  
  **MDL:** The development of the project was entirely in the hands of the Network members. I really believe this aspect is crucial; FENS leadership, apart from securing funding at the beginning of the project, did not interfere with the activities. In my opinion the group developed their agenda fully interpreting their mandate.

- **Why do you think such a Network is important?**
  
  **MJ:** Apart from the reasons mentioned above, it is just fun to talk about (Neuro)science with equally motivated and gifted people. I can imagine it is immensely stimulating to meet and discuss science.
  
  **MDL:** This is a group of amazingly gifted Neuroscientists. What's more? I think it will be important that they can continue working and discussing freely about science and research. The hold a great potential and suggestions may come from them on how to shape European Neuroscience in the future.

- **How in your view has Neuroscience changed over the past 10 years?**
  
  **MJ:** Like anything else, Neuroscience is in the fast lane. Techniques have become more and more powerful, both at the microlevel and at the level of the whole brain or even social interactions. There is a massive amount of data available. But what remains the same is the challenge to make sense of it and to design smart experiments to advance our knowledge.
  
  **MDL:** I always sais that Neuroscience is at forefront of science. Advancement in technologies helped tremendously and changed our potential. We gained an incredible amount of data at molecular/cellular level and we need to learn how to integrate them in a general picture.

- **How do you see the future of Neuroscience in Europe?**
  
  **MJ:** Collaboration is becoming more and more important. So I hardly see the future as something exclusively taking place in Europe. It is a global enterprise. We need our collective power to understand the brain and its diseases. It is really essential to make steps forward in understanding, preventing and treating these diseases.
  
  **MDL:** We are still confronted with the need to advance our knowledge about brain functioning. And we are confronted with a great societal challenge, that is to say to curb the socioeconomic impact of brain disorders. Thus, in the future years we will face opportunities and responsibilities: as scientists we will have the responsibility to advance our knowledge on the functioning of the brain, but we will have also the great opportunity, to find new therapies for brain disorders. We can however capitalize on previous achievements, and from a collaborative effort. Indeed, we learnt in these years on how to work together.
Three FENS-KAVLI Scholars have recently received prestigious ERC grants from the European Research Council: Johannes Gräff (“Starting” grant), from the EPFL, in Switzerland, Ileana Hanganu-Opatz (“Consolidator” grant), from the University of Hamburg, Germany, and Tara Spires-Jones (“Consolidator” grant), from the University of Edinburgh, UK. They tell us about their story.

What is your research project about?

JG: Identifying the cellular subpopulations that underlie fear memory extinction. In particular, we are also interested in deciphering the molecular mechanisms in a subpopulation-specific manner.

IHO: Understanding the cellular mechanisms accounting for abnormal network maturation in neuropsychiatric disorders.

TSJ: We are examining the causes of Alzheimer’s disease with a particular focus on synaptic changes.

How did you come about this idea?

JG: It already started to take shape when I was still a postdoc. After several weeks of intense reading, I decided that it’s probably an idea that’s worth pursuing for such a grant application.

IHO: A long time ago, in a Karaoke bar ;-) However, it took more than 5 years of team work to get the proper controls. I don’t have a general rule for developing grant ideas... They mainly appear as a logical follow-up of the work and troubleshooting in the lab.

TSJ: To come up with grant ideas, I try to think of the biggest questions in the field and the most innovative way to answer them. To investigate the molecular mechanisms of the amyloid cascade, I thought that bridging high resolution imaging of synapses in three systems, human postmortem brain, transgenic mouse model, and human stem cell derived neurons might together yield meaningful progress.

Did you ask for advice while writing the grant? To whom?

JG: Yes. From my mentor at my home institution.

IHO: No. However, I got great support in all administrative matters from our EU Office at the University. They convinced me to write an ERC proposal once again (my first one failed in 2013). My family, especially my husband, were very supportive and helped sharing childcare responsibilities.

TSJ: I asked for advice from MANY people while writing. Two senior academic mentors, several people who have been on similar grant panels, and several people who have recently won similar grants. In addition, around 10 colleagues participated in mock interviews to help me prepare.

How much preliminary results do you really need?

JG: I don’t know. We had some preliminary results at the time of applying and I included most of them. But I have heard from other people who submitted their application without any preliminary data and also got it.

IHO: The project has the solid basis of at least 5 years-work. To have "proof of principle" pilot studies for at least 1/3-1/2 of your workload is certainly helpful.

TSJ: In general, I’d say you need enough preliminary data to convince the reviewers and the board that you can do the experiments. You need less preliminary data for pilot grants and career development grants and more for project grants.

Any tips for the interview?

JG: Be authentic.

IHO: 1) Remove the details and keep the focus on the knowledge gain. 2) Make a clear presentation with simple schemes and images. 3) Enjoy the talk and the Q & A session. You worked so hard to be invited to the interview and having the opportunity to discuss your project with renowned and experienced scientists of the panel is just great.

TSJ: Practice and get input from colleagues. Ask as many people as you can for critical input on your science and your presentation.

What was the hardest part?

JG: The writing and submission procedure was obviously very hard, but also manageable. For me, the hardest part was to travel to Brussels for the interview the day before and just have to wait and idle away the hours until it was my turn.

IHO: Not to give up after the first attempt in 2013.

TSJ: Mock interviews were the hardest part for me. They were much harsher than the real thing!
A selection of fresh publications straight out of the Scholars’ labs

From the Hoogenraad lab:
Kuijpers et al., Neuron, 2016.
*Dynein Regulator NDEL1 Controls Polarized Cargo Transport at the Axon Initial Segment.*
Polarized cargo transport ensures the sorting of vesicles specifically into the axon or dendrites. Kuijpers et al. reveal a critical role for dynein regulator NDEL1 as a gatekeeper of somatodendritic cargos at the axon initial segment.

From the Haganu-Opatz lab:
Sieben et al., PLoS Biol 2015
*Neonatal Restriction of Tactile Inputs Leads to Long-Lasting Impairments of Cross-Modal Processing.*
Optimal behavior relies on the combination of inputs from multiple senses through complex interactions within neocortical networks. The ontogeny of this multisensory interplay is still unknown. This study identifies critical factors that control the development of visual-tactile processing by combining in vivo electrophysiology with anatomical/functional assessment of cortico-cortical communication and behavioral investigation of pigmented rats.

From the Yaski lab:
*Evolutionary conserved brainstem circuits encode category, concentration and mixtures of taste.*
This study shows that evolutionary conserved brainstem circuits encode taste category, concentration and mixtures, which can be utilized for detecting food items at broad range of concentrations of tastes and rejecting inedible substances.

From the Mameli lab:
Lecca et al., Nat Medicine 2016
*Rescue of GABAB and GIRK function in the lateral habenula by protein phosphatase 2A inhibition ameliorates depression-like phenotypes in mice.*
Using a variety of electrophysiological, viral-based and pharmacological approaches this study identifies the cellular mechanisms underlying negative experience, and to design a rescue strategy by targeting a specific phosphatase (PP2A). Inhibition of PP2A in turn efficiently ameliorates depressive phenotypes in mouse models of mood disorders. These results provide a detailed mechanistic picture of the events occurring upon a stressful stimuli highlighting the role of the habenula in depression and providing new insights for the treatment of mood disorders.

From the Jabaudon lab:
Telley*, Govindan* et al., Science 2016
*Sequential transcriptional waves direct the differentiation of newborn neurons in the mouse neocortex.*
Although class-specific genetic signatures exist for cortical neurons late in differentiation, early postmitotic fate specification programs have been inaccessible. In this study, Telley et al. developed a novel labeling technique to investigate these earliest stages of neural development. They identify waves of transcriptional programs that control the sequence and pace of neuronal differentiation.

FENS-KAVLI Scholars
David Belin, U. Cambridge, UK
Camilla Bellone, U. Geneva, Switzerland
Johannes Grüß, EPFL, Switzerland
Matthew Grubb, King’s College London, UK
Ileana Hanganu-Opatz, U. Hamburg, Germany
Casper Hoogenraad, U. Utrecht, Netherlands
Denis Jabaudon, U. Geneva, Switzerland
Ragnhildur Thora Ólafsdóttir, U. Cambridge, UK
Johannes Letzkus, Max Plank Institute, Frankfurt, Germany
Guillermina López-Bendito, Instituto de Neurociencias, Alicante, Spain
Manuel Mameli, INSERM, Institut du Fer a Moulin, Paris, France
Panayiota Poirazi, Institute of Molecular Biology and Biotechnology, Greece
Grega Pribavšek, U. Ljubljana, Slovenia
Carlos Ribeiro, Champalimaud Center for the Unknown, Lisbon, Portugal
Asya Rolls, Israel Institute of Technology, Israel
Lars Schwabe, U. Hamburg, Germany
Tara Spires-Jones, U. Edinburgh, UK
Kristin Tessmar-Raible, U. Vienna, Austria
Tim Vogels, U. Oxford, UK
Emre Yaksa, Kavli Institute for Systems Neuroscience, Trondheim, Norway
From the Káradóttir lab:
Gautier et al., Nature Com, 2015. Neuronal activity regulates remyelination via glutamate signaling to oligodendrocyte progenitors. This work demonstrates that neuronal activity regulates remyelination. The authors identified that demyelinated axons establish synaptic communications with oligodendrocyte precursor cells recruited to demyelinated lesions. Blocking this synaptic transmission or neuronal activity prevented remyelination. These findings advance in our understanding of remyelination and could affect drug development for Multiple Sclerosis.

From the Spires-Jones lab:
Henstridge et al., Acta Neuropath Comms 2015. Post-mortem brain analyses of the Lothian Birth Cohort 1936: extending lifetime cognitive and brain phenotyping to the level of the synapse. This study examines brain integrity postmortem in a participant of a lifelong birth cohort born in 1936. This subject was part of a remarkable cohort of people who have participated in cognitive ageing studies including tests of cognition, in vivo brain imaging, genetics, and a host of other bio-psycho-social, and epidemiological data. Using cutting edge imaging techniques, the study showed a remarkable degree of structural and molecular preservation of synapses in the LBC1936 participant compared to a person who had Alzheimer’s disease, highlighting the differences between healthy and pathological brain ageing.

From the Ribeiro lab:
Walker et al., Curr Biol 2015. Postmating circuitry modulates salt Taste processing to increase reproductive output in drosophila. In most animals, including humans, reproduction is associated with a change in nutrition. How these changes are mediated by the nervous system is poorly understood. Walker et al. show that in the fruit fly, mating increases salt appetite in females. This change is driven by the transfer of a peptide by the male during copulation. This peptide acts on a specific neuronal circuit in the female to increase its taste response to salt. The resulting increase in salt intake ensures a high level of egg production.

From the Schwabe lab:
Bogdanov and Schwabe, J Neurosci 2016. Transcranial Stimulation of the Dorsolateral Prefrontal Cortex Prevents Stress-Induced Working Memory Deficits. Stress is known to impair working memory, which may have implications for stress-related mental disorders. This study shows that anodal transcranial stimulation over the dIPFC can prevent stress-induced working memory deficits in healthy individuals. These findings indicate a causal role of the dIPFC in working memory impairments after stress and point to a potential new avenue for the prevention or treatment of stress-induced cognitive deficits.

From the Bellone lab:
Bariselli, Tzanoulinou, Nat Neurosci 2016. SHANK3 controls maturation of social reward circuits in the VTA. Autism spectrum disorders are characterized by two core symptoms: social behavior impairments and stereotyped actions. In this study, Bariselli, Tzanoulinou and collaborators identify the VTA as a key structure in mediating these deficits in a mouse model of autism. These findings identify specific synaptic and circuit dysfunctions susceptible to pharmacological interventions.