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VENICE ASIAGO 2016

DATE: 6th September 2016

TIME: 17:00 - 18:15

LOCATION: Osservatorio Astronomico di Asiago, via dell'Osservatorio, 8; Asiago, Vicenza

From the laboratory bench to the management of research

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ABSTRACT

Science is one of the most fascinating and challenging endeavours of humans. It requires knowledge, intuition and creativity, capacity to question established views and rigorous, extensive work.

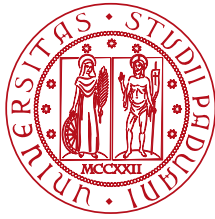
The reward is superb, as it gives the perception of producing a tiny, yet important grain in the progress of human society.

As a scientist, I had the privilege of addressing and solving an important scientific issue regarding an organelle, the mitochondrion, which in the past years has been the object of intense researches. Indeed, the endosymbiont, which colonized our progenitor cell 1,5 billion years ago and became its energy powerhouse, is now known to be a crucial regulator of cell life and death, being responsible for both aerobic metabolism and the triggering of cell death pathways.

This dual, complex regulation requires the exchange of precise signals with the rest of the cell, calcium being the most important messenger. The channel that transports calcium into mitochondria, thus integrating mitochondria in the global signalling network of the cell, was searched for fifty years without success.

We succeeded in doing so by using a novel strategy, that incorporated different experimental approaches: bioinformatics to identify candidates based on the known properties of the putative mitochondrial calcium transporter; cell biology to investigate the functional properties of the identified proteins in living cells; heterologous expression, purification, reconstitution in lipid bilayers and electrophysiology to analyse the channel function and mutagenesis to test the structure/function relationship of the putative channel.

This and many other examples proved that successful research requires not only the action of a strongly motivated team, but also the integration of scientific perspectives that not long ago were



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considered independent, if not distant.

Furthermore, coordinating and integrating different scientific backgrounds and experimental approaches proved to be a fascinating experience.

With this in mind, the step towards governing a multidisciplinary university, albeit very big, can be understood, especially when related to a University that for eight centuries has made quality and freedom of research its undebated mission. In this case as well, success is necessarily a team effort: the leader of a university must share, with his colleagues, clear objectives and effective strategies to be implemented with coherent effort.

In this presentation, I will review the plans of my Rector's term, with special emphasis on the internationalization of teaching and research. This open-mindedness is a proud tradition of our University (Padua has always granted access to all nationalities and religious beliefs, also in times when all other academic institutions were enforcing restrictive policies), still the only possible choice to be a successful international university.

FURTHER READINGS

- 1) Rizzuto, R., et al., (2012). Mitochondria as sensors and regulators of calcium signalling. *Nature Reviews*, Vol. 13, pp. 566-578. doi:10.1038/nrm3412.
- 2) De Stefani, D., et al., (2014). A 40 kDa protein of the inner membrane is the mitochondrial calcium uniporter. *Nature*. 476(7360):336–340. doi:10.1038/nature10230.