

A Futurist and *Hybrid* Scientist, the result of a

Multidisciplinary Education by Irene Kamberidou (ECWT Executive Group)



Eleni Antoniadou is a multidisciplinary scientist in Artificial Organ Technology and currently serves as the President of the European Health Parliament

I was blessed to be born in the land of light, Greece, where philosophy, art, politics and literature thrived and became the roots of modern science. Philosophy in Greek means 'love of wisdom', my guiding force in my journey to knowledge (Eleni Antoniadou).

Introduction

Eleni Antoniadou, one of the Top 10 Nominees for the ECWC Awards 2016, is a Greek scientist, a human rights activist, and co-founder in a start-up initiative entitled "Transplants Without Donors"—an entrepreneurship activity that could lead to ending human organ trafficking. This innovative venture concerns the production of organs bioreactors and organ scaffolds in the laboratory, a technology of tissue engineered organs ready for transplantation. As Eleni pointed out: "I think of myself as a futurist and a hybrid scientist which is the result of acquiring a multidisciplinary education. As a researcher, I'm trying to understand the changes in life sciences and to enjoy challenging myself with problems in the fields of regenerative medicine, the development of artificial organs, bioengineering, and space exploration."

Eleni has also been working on raising awareness on the issue of organ trafficking in Africa and Latin America. She has been assisting victims of illegal human organ trafficking while working as a volunteer group leader in medical missions in Peru, Uganda and Costa Rica that provide healthcare (pharmaceuticals, vaccinations and surgical procedures) to distressed groups, and primarily children.

Eleni Antoniadou, born in Greece in 1988, completed her undergraduate studies in Computer Science and Biomedical Informatics in 2009 at the University of Thessaly in Greece; her master's degree in nanotechnology and regenerative medicine at University College of London (UCL), and her MSc in Bioengineering at the University of Illinois in the U.S, including her PhD studies in Regenerative Medicine and Stem Cell Research. In 2012 she joined the NASA Academy—the top candidate among 1200 nominees—and has worked as a Research Associate at the Biosciences Division/Mars Exploration Laboratory at NASA Ames in Silicon Valley, where she investigated the effects of radiation on the neurological system in order to protect astronauts traveling in space. Eleni participated in the Astronaut training Division preparing biomedical experiments for the ISS as well. At the same time she is President of the European Health Parliament as well as the Chair of the Prevention and Self-Care Committee.

Alternative therapeutic pathways

Irene: It seems that, through the prism of innovation, you've been connecting the dots between research, technology policies, public governance and entrepreneurship. Which role would you say is your number one priority or mission in life: scientist, researcher, social activist, entrepreneur, something in between or a combination of all?

Eleni: As a multidisciplinary researcher, I strive to direct all my efforts coming from different angles towards solving the transplantation problem, through the establishment of artificial organs as an *alternative therapeutic pathway*. Whether I'm in the lab programming a 3D organ printer, culturing artificial tissues from stem cells in microgravity, engineering an organ bioreactor; or at the European Health Parliament advocating for a centralized medical record system and the adoption of innovation in healthcare, or even on a medical mission in Latin America assisting victims of the illegal organ trade and trafficking, I always try to make a contribution that will move us closer to a better reality for people in need of transplants. I believe that progress, in such complex issues, can be achieved through diversity in strategies and tactics, by connecting the dots between research, technology policies and public

governance, along with our ability to use every opportunity we can to prepare and lay the ground for later, successive gains. It is also vital to understand that motivating authorities towards a solution or to take action could be made possible only through a worthy cause and action.

Irene: How do you see the situation of young female talent in Greece. Is progress being made to get more women into STEM, science and technology?

Eleni: The statistics of Greek women in science and technology have gradually improved from just ~1.5% in 1970s to ~30% in 2000s, and the race is on to attract more girls and women into the STEM fields. The business case for diversity and the ever present job shortage is an acknowledged reality. During the current recession, computer science, more than ever, could provide the means for cost-effective research, and build bridges with organizations in more prosperous countries, if we challenge existing gender stereotypes. I strongly believe that female talent in science and technology is blossoming in Greece among the youth, in spite of the limited resources. On the other hand, it is lost early due to the brain drain. As it is often observed around the globe, the best people create a lot of opportunities, reach for the sky, “join rocket ships”, among other things. Our hope is to develop an ambitious plan so that they can thrive at home and regenerate civic engagement for social good.

Irene: What would you advise young women and girls when choosing their future careers? Any *Tips for Success*?

Eleni: I would advise them to become adaptable and pursue every possible opportunity to evolve. The future will unavoidably bring complex problems that will demand a more comprehensive, earnest and holistic approach and as a result multidisciplinary sciences will become an eclectic priority. More than anything, I encourage young girls to develop their inclination for learning and embrace their creative curiosity in the sciences. My personal journey through science has taught me that if you are brave enough to take one little chance in studying and learning, and then another, before you know it your hands will be full of possibilities.

Irene: Eleni, have you confronted any social discrimination or gender barriers during the course of your studies, in *moving up the ladder*, or the opposite, have you been enjoying positive discrimination?

Eleni: Unfortunately, throughout my educational and professional life, I had been navigating through rough waters. I had to learn how to overcome barriers and tackle steep climbs. But, I learned that when you identify exactly who you are and what you stand for, you become your own *filter* and can overcome gender barriers. Above all, social discrimination and personal hurdles, made me cultivate an unfailing compassion for others and a hope for a brighter future that is fueled or reproduced through my work.

At this point I would like to express my appreciation for having been chosen as one of the Top 10 Nominees for the ECWC Awards 2016 and need refer to the [European Celebration of Women in Computing \(ECWC\)](#) platform. The ECWC platform gave me the opportunity to share my message through my video and I'm very thankful for the overwhelming response. My interactions and communications with all of you were eye opening, humbling and reflective with regard to my own priorities in life. Several of you mentioned that you "don't have the means to afford your own computer, which makes you feel invisible in this world" and that "your education relies on your capacity to do research through online articles but your university cannot pay subscriptions to research portals". Others described their bureaucratic struggles to receive medical records, get them translated for specialized clinics EU countries while fighting for their lives. Additionally, we had countless discussions on finding the right balance between technological progress, data privacy and social interactions. Many of the most beautiful people I met owing to this platform, have been deeply scarred from a lifetime of such battles. But let's not allow these battles to be given in vain! Let's make these sacrifices worth it so that younger people and future generations will no longer need to come to grips with the same fears and uncertainties.