What it means to receive the *UEG* Rising Star Award

United European Gastroenterology Journal
2015, Vol. 3(4) 400–402
© Author(s) 2015
Reprints and permissions:
sagepub.co.uk/journalsPermissions.nav
DOI: 10.1177/2050640615596322
ueg.sagepub.com

As one of this year's *UEG* Rising Star Awardees, I couldn't be more grateful or happy! Such recognition has allowed me to get involved in different *UEG* activities and is translating into many other career-boosting opportunities.

My journey began in 2002, when I graduated in Biology and Genetics from the University of Lisbon, Portugal. I then went on to complete my PhD in Pharmacy (Biochemistry) at the University of Lisbon in 2006, having spent a total of 12 months at the Department of Medicine, University of Minnesota Medical School, USA. This was also the point when I first understood that moving between laboratories is vitally important when doing research. Not only was I able to perform ambitious and innovative experiments by having access to well-equipped infrastructures, but I also gained specific skills and valuable insights from the vibrant and daily interactions with different research teams.

The skills and connections gained from my time in Minneapolis formed the foundation of what is allowing me to pave my way toward establishing my own research group. I believe I took a rather different approach from most people in terms of mobility, in the sense that I would travel more frequently, but for shorter periods of time (each visit was for ~3 months). Even after finishing my PhD, I returned to Minneapolis for three additional visits, one of which was funded by a Sheila Sherlock Short-Term Fellowship from the European Association for the Study of the Liver (EASL). For me personally, these short visits were how I could best balance my personal life, family and friends with my career development. I believe it shows that many different approaches can be taken, a critical issue if you are a women scientist or a researcher with family obligations. Although some might say that a mobility scheme like this takes more time to produce dividends, perseverance is key and, in my opinion, it definitely pays off. The bottom line is that mobility is an important component both for personal and career development, and a very positive factor in the long run. I would encourage any young and aspiring gastroenterologist or scientist to pursue it!

Upon my return to Portugal, I started thinking of establishing myself in an area of relevance within the hepatology field—one that would not only allow me to

make novel and significant discoveries, but that would also start pushing my career toward scientific independence. I had studied the role of bile acids as signaling molecules in the liver during my PhD, particularly regarding modulation of cell death and survival pathways. I was now interested in expanding these studies to unravel novel molecular targets for bile acids and, perhaps more keenly, in identifying and characterizing the functional role of microRNAs (miRNAs or miRs) in liver pathophysiology. At the time, miRNAs were the rising stars in science, but their exploitation in liver diseases was both lacking and/or poorly resolved. For me, this constituted a gap that could allow me to solidify my competitiveness, while working in an area that really appealed to me as a scientist. It is truly rewarding to see the work I've developed since being acknowledged by *UEG* in the form of this Rising Star Award!

As part of the award, *UEG* has invited me to give a talk in the core program of *UEG* Week 2015. I will focus on the role of miRNAs in the pathogenesis and progression of non-alcoholic fatty liver disease (NAFLD). We have recently shown that apoptosis and insulin resistance are important factors that drive NAFLD progression from simple steatosis to non-alcoholic steatohepatitis (NASH).¹ Still, a unifying pathogenic mechanism for NAFLD progression remains unclear, thus hampering the development of effective treatments. This is where miRNAs may come into play. Our group had already shown that global miRNA expression profiles dramatically shift during liver regeneration² and, more recently, that the miR-34a/SIRT1/p53 pro-apoptotic pathway increases with human NAFLD severity, with ursodeoxycholic acid (UDCA) strongly inhibiting it in the rat liver in vivo and in vitro.³ By contrast, deoxycholic acid (DCA), found to be increased and playing a pathogenic role in NASH patients, induces the miR-34a/SIRT1/p53 pathway and apoptosis both in vitro and in vivo.⁴ We recently expanded these studies to show that miRNAs are also differently modulated in the skeletal muscle of individuals with NAFLD, correlating with changes in the liver.⁵ Because the current standard of care for treating NAFLD patients relies almost solely on lifestyle interventions and there is a lack of consensus regarding the most effective and appropriate pharmacologic approach, the development of miRNA-

based therapeutics could have great potential. For this to become a reality, the molecular mechanisms governing NAFLD, including the functional roles of miRNAs in its development and progression, as well as the systemic effects of miRNA modulation, need to first be clearly established. And this is our goal!

I am very much looking forward to be able to share our results at the upcoming *UEG Week* in Barcelona this October (and I hope I will see you there!). I attended *UEG Week* for the first time only in 2012, but I am an absolute fan and now I wouldn't miss it! *UEG Week* was also one of the first meetings when I truly felt engaged and actually networked and interacted with other participants (and this has nothing to do with the fact that Amsterdam was the hosting city that year!). The truth is that during my PhD I was a little shy and would sort of try to be 'invisible' throughout meetings—I would present my poster/talk, attend sessions and that was it. I guess this is something that gradually changes as you mature and start focusing on your career path. Still, *UEG* makes it really easy and fun to engage in different session formats, get to know other participants, interact with speakers and so on. And for anyone trying to build up their career this is a key aspect; networking allows you to develop new partnerships with colleagues that may complement your research efforts and also refresh old ones. It may even get you a new job (if you're looking for one).

In addition to networking, I also feel that *UEG Week* is unique in the sense that it specifically tailors a big part of its program and awards to young clinicians and scientists, ranging from the two-day Postgraduate Teaching Course, to the "Young GI Track" (special sessions and mentoring program) and the "Young GI Lounge"—a personal favorite. In fact, *UEG* has its very own "Young Talent Group" responsible for many of these initiatives. But there is much more young gastroenterologists can gain from *UEG*, starting with *UEG Education*. *UEG's Education* website hosts a huge amount of content, including online courses, a comprehensive library and an interactive news section. I was fortunate enough to join *UEG E-learning's* Web Editorial team approximately a year ago, and it has been one of the most rewarding experiences of my career so far. We have been working close with the Education Committee and *UEG's* Member Societies to keep developing *UEG E-learning* as one of the richest online educational resources in gastroenterology.

As one of *UEG's* Rising Star Awardees, I am now being presented with even more opportunities to engage in *UEG* activities. In May 2015, I participated in the 18th Annual American Gastroenterological Association (AGA) Research Scholar/*UEG* Rising Star Scientific Exchange Program, on the occasion of

Digestive Disease Week 2015, in Washington DC, USA, where I had the chance to meet and exchange ideas with young fellows performing ground breaking research in gastroenterology. I am also honored to have been invited to be part of a panel on "Women in GI—Balancing a career with other commitments," at *UEG Week* this October, as part of *UEG's* commitment to promoting gender balance and career advancement for women gastroenterologists. And these are only two examples.

Furthermore, the award is having a wider impact on my career. I was recently invited to participate as faculty during an Early Morning Workshop at the upcoming American Association for the Study of the Liver (AASLD) Meeting 2015. In addition, I was recently awarded with a research Grant under the Gilead Sciences International Research Scholars Program in Liver Disease. I truly do not believe these achievements would be possible without this high distinction by *UEG*. I am even more grateful owing to the fact that I am a researcher working in translational science, and for me this award is also testimony to *UEG's* support for equality of opportunity, not only in terms of gender and nationality, but also in terms of research activities and career type. New opportunities for networking and career development appear before me all the time now, and I know much of this is due to the visibility I've gained from the *UEG* Rising Star Award. This was exactly the boost I needed at this stage in my career!

If I were to give any advice to future Rising Star applicants, particularly early career scientists or clinicians, I would say that you should first try to find a niche research area in which you can build on your knowledge and expertise. But perhaps more important, you should feel passionate about it—it is hard to go far doing something that may be groundbreaking but that is not pleasing. Again, mobility is important, but I would say communication is equally important. In my case, I discussed my career development and level of independence with my former PhD supervisor, with whom I continue to work and collaborate, while having my own financed research projects and students. At the same time, if your personal circumstances mean that traveling is not an option then you can still advance your career without having to move to a different research group, institute, city, country.... Indeed, there are many different paths to a successful career! Get involved with your national gastroenterology society; my Rising Star application was supported by the Portuguese Society of Gastroenterology (thank you again!). You may also want to check *UEG's* website frequently; *UEG* is keen on engaging young gastroenterologists in many of its activities and, if nothing else, you may discover new opportunities for

collaboration and networking in your specialty, which would undoubtedly enrich your career development!

Rui Castro
Rising Star 2015 and UEG Web Editor,
University Hospital of Lisbon Portugal

Application for Rising Star at UEG Week 2016 is open until September 30, 2015. For more information visit <http://www.ueg.eu/awards-grants/ueg-week-awards/rising-star-awards/>

References

1. Ferreira DM, Castro RE, Machado MV, et al. Apoptosis and insulin resistance in liver and peripheral tissues of morbidly obese patients is associated with different stages of non-alcoholic fatty liver disease. *Diabetologia* 2011; 54: 1788–1798.
2. Castro RE, Ferreira DM, Zhang X, et al. Identification of microRNAs during rat liver regeneration after partial hepatectomy and modulation by ursodeoxycholic acid. *Am J Physiol Gastrointest Liver Physiol* 2010; 299: G887–G897.
3. Castro RE, Ferreira DM, Afonso MB, et al. miR-34a/SIRT1/p53 is suppressed by ursodeoxycholic acid in the rat liver and activated by disease severity in human non-alcoholic fatty liver disease. *J Hepatol* 2013; 58: 119–125.
4. Ferreira DM, Afonso MB, Rodrigues PM, et al. c-Jun N-terminal kinase 1/c-Jun activation of the p53/microRNA 34a/sirtuin 1 pathway contributes to apoptosis induced by deoxycholic acid in rat liver. *Mol Cell Biol* 2014; 34: 1100–1120.
5. Ferreira DMS, Borralho PM, Machado MV, et al. Skeletal muscle miRNAs in non-alcoholic fatty liver disease and targeting by tauroursodeoxycholic acid in vitro. *United European Gastroenterol J* 2013; 1: A99–A100.