



From *just* physics to biophysics of biological systems

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I have had the honour and the luck to have met Prof. Cristobal G. dos Remedios (Cris), and this *Editorial* is dedicated to celebrate and share this experience on the occasion offered by his 80th birthday, to which Biophysical Reviews—Cris was the Editor-in-Chief for several years and now is still serving the Journal as Emeritus Chief Editor—has dedicated a Special Issue entitled “Biophysics of Human Anatomy and Physiology” that has been just published. I have met Cris at the 17th International Biophysics Congress that took place in Beijing, China, from the 30th of October to the 3rd of November 2011. At that time, I had defended my PhD thesis since almost a year already, and I was looking around for opportunities and applying for postdoctoral fellowships or waiting for their outcome. Presenting my research findings and networking at relevant conferences in my field of interest, i.e. biophysics, I thought it was a good idea in the meantime. My attendance at the 17th International Biophysics Congress was supported by a IUPAB Travel Award for Young Scientists, sponsored by the International Union for Pure and Applied Biophysics (IUPAB) and awarded by Cris who was the IUPAB Secretary-General. Attending this Congress was an open-minding experience for me, mainly because the inter- and trans-disciplinarity of the talks and, in turn, of the international biophysical community itself. In this context, I have been given the opportunity to present part of the findings of my PhD in the form of a contributed talk that, if I remember correctly, was my first talk at such kind of big congresses. In the talk, titled “Protein dynamics by neutron scattering”, I

presented one of the major results achieved during my PhD that was on the protein dynamical transition and its connection to the protein biochemical function (Magazù et al. 2011) as well as on few other findings including one on the different atomic displacement of two homologous natural bioprotectants (Magazù et al. 2012). I have met Cris again few months later in San Diego, CA, at the 56th Annual Meeting of the (American) Biophysical Society (25–29 February). At that time, I have been already communicated that my application for the 2012 Endeavour Awards program of the Australian Government was successful, and so I shared this *good news* with Cris informing him that from the next month, I was moving “Down Under” joying the Bragg Institute of the Australian Nuclear Science and Technology Organization (ANSTO). The Endeavour Research Fellowship is the Australian Government’s internationally competitive, merit-based individual postdoctoral scholarship program providing opportunities for foreign citizens of the Asia-Pacific, Middle East, Europe and the Americas to undertake research in Australia. I have no doubts in saying that both my research and personal experience during my stay in Australia have been made astonishing by Cris. Since the beginning, I believe it was few day after I landed actually, Cris invited me to present a seminar on my research activity to his research group based at the School of Medical Sciences of the University of Sydney and then to join his group as a research associate for the duration of my stay in Australia (Fig. 1). This gave us the opportunity to meet quite often, on weekly basis, to discuss on biophysics. I remember we have often discussed on protein synthesis/expression, protein dynamics and protein amyloidogenesis, subjects that I am exploring also nowadays (Benedetto 2017; Nandi et al. 2017; Pillai and Benedetto 2018). I did not only enjoy the weekly research group meetings of the Friday and the campus facilities—in the meantime I have moved from the Shire to the Sydney University Village in Newtown—but the new point of view coming from the discussion with Cris (on my research projects). Since then I started to move from an almost pure *physics picture* of biomolecules and biophysical systems, generally speaking, to a *trans-disciplinary picture* looking for the biological/

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Fig. 1 Cris and myself after a research meeting at the School of Medicine, Sydney University in March 2012

biochemical relevance of/behind the physics. For this, in particular, I would like and be grateful to Cris. I am still on this *transition path* and I am enjoying it a lot. In this respect, very recently, I have authored a study in which variations in cell membrane mechano-elasticity (*the physics*) trigger variation in cell migration (*the biology/biophysics*) (Kumari et al. 2020). After my research stay in Australia, I moved to the School of Physics of the University College Dublin thanks to an individual Marie-Curie fellowship sponsored by the European Commission, and through the years, I have continued my research in the intriguing field of biophysics and have the pleasure and the honour to meet and collaborate with few/new other colleagues including, in particular, Prof. Pietro Ballone with whom I have started to work on the interaction of ionic liquids and biomolecules (Benedetto and Ballone 2016; Benedetto and Ballone 2018). However, I was always keeping in touch with Cris since when he kindly escorted me to the Sydney airport at the end of my research experience in Australia. We have then met in several more different occasions, including another Annual Meeting of the (American) Biophysical Society. My professional interaction with Cris has also been enriched by the opportunity he gave me to serve as Editor in Biophysical Reviews, which is the IUPAB official scientific journal. This was my first experience as a scientific journal editor, which I am continuing to do with sincere enthusiasm (Benedetto and Galla 2018). I remember two other occasions, in particular, in which Cris and I met: one in Paris where he also introduced me to his favourite restaurant in town (around Saint-Sulpice that is also his favourite area of Paris, if I remember correctly) and the other one was in Sicily—I am from Sicily actually—where I *exchanged the favour* and introduced him to one of my favourite fish

restaurant close by the sea but not too far from the Etna volcano. We have also met very recently and in Sydney. This last—for the moment—meeting was in March 2020 on the occasion of my 1-month research visit to Oz hosted by the University of Sydney to work on my *Elastic neutron scattering for dynamics* project that I am carrying out with Prof. Gordon J. Kearley (Benedetto and Kearley 2019; Benedetto and Kearley 2020), another *chap* that I met in 2012 in Sydney. In this occasion, I have updated Cris on my last research interest, and he *exchanged the favour* telling me about his current research interest. Happy birthday dear Cris!

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