We are looking for original pieces of writing or videos on a topic of relevance to molecular bioscience. If so, then enter our 2017 Science Communication Competition. Winners receive a cash prize and professional mentoring session. Mentors include Dr Kat Arney, Dr Steve Cross and Jonathan Sanderson. Find out more and enter biochemistry.org/ScienceCommunicationCompetition. Deadline: 16 April 2018.

Taking inspiration from nature, tackling nature

by Chris Willmott, Science Editor

It is customary when taking over the reins of a publication to thank your predecessor for their labours. Notwithstanding that this is a tradition; I would like to begin by offering genuine and sincere thanks to Freddie Theodoulou, and also to her predecessor Richard Reece, for their careful nurturing of The Biochemist over many years. It has been a pleasure and an honour to work with them and I hope, as I step into their shoes, that I can help to maintain the very high standards they have set for the magazine.

The theme for the features in our first issue of 2018 is the development of biomaterials. Mankind has a long history of exploiting biological materials. In one sense this can be traced all the way back to an initial decision to wear animal skins as protection from the weather or, if that lacks sufficient technological knowhow, certainly from the moment it was feasible to process raw fleece into yarn with which to knit or weave a more sophisticated garment. The articles in this issue look at various ways in which an understanding of molecular biology is being utilized to allow for investigation of novel applications. These include: bone tissue engineering; 3D bioprinting; ways to prevent unwanted immune responses to implanted devices; manufacturing biomimetic spider silk; adaptation of mutable collagenous tissues, such as the dermis of sea cucumbers; and the piezoelectric properties of that old biochemical favourite, lysozyme.

Elsewhere in this issue, I was especially struck by Emma Sykes’ account of the Learned Society Partnership on Antimicrobial Resistance (LeSPAR) workshop, held last November (see Policy Matters, p42). I am encouraged, and yet frustrated, by the recent upsurge in commitment to tackle the unfavourable balance of antibiotic resistance versus new drug development. Encouraged, because it is clearly crucial that this issue has sufficient investment of thought and money directed towards solutions; frustrated because it has taken so long for the international community to acknowledge its importance.

Having completed a PhD on antibacterial mode of action a quarter of a century ago (and having written to the Chief Vet at the time to express my concerns about agricultural use of the class of compounds I was studying), I am acutely aware that this issue is not new. I also realise that our current predicament has complex aetiology. Overuse and misuse of existing antimicrobials for both humans and animals has certainly contributed to the problem. Better stewardship, including quicker identification of the infective agent and selection of an appropriate treatment, are part of an integrated solution. More also needs to be done to incentivize companies to invest in the field. Under prevailing financial models, there has been greater profitability in medicines that patients will take daily, for many years, than in anti-infective which may only be needed infrequently and for a matter of days. The introduction of a Global Innovation Fund, championed in the 2016 Review of Antimicrobial Resistance (the “O’Neill Report”), may turn out to be the most positive thing to emerge from David Cameron’s tenure as Prime Minister.