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**Production by** Portland Press Limited**Editorial team:** Emma Pettengale and Ben Borthwick**Design by** Peter Jones**Printed by** Ashford Colour Press Ltd

Published by Portland Press Limited six times a year  
 (February, April, June, August, October and December).  
 The Biochemist © 2019 Biochemical Society  
 ISSN 0954-982X (Print); ISSN 1740-1194 (Online)

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 London WC1N 2JU  
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 website: www.portlandpresspublishing.com/content/  
 biochemist-magazine-0  
 Registered charity no. 253894

**Subscriptions**

email: sales@portlandpress.com

**Science Editor:** Chris Willmott (University of Leicester, UK)**Editorial Board:** David Pye, Shane Hegarty, Harriet Groom, Matthew Lloyd, Patrick Walter, Heather Doran and Roseanna Hare.

*The Editors are pleased to consider items submitted by Society members for publication. Opinions expressed in signed articles are not necessarily those of the Society.*

*US agent: Air Business Ltd, c/o Worldnet Shipping Inc., 156-15, 146th Avenue, 2nd Floor, Jamaica, NY 11431, USA*

*Periodicals postage paid at Jamaica, NY 11431, USA.  
 Postmaster: address corrections to The Biochemist,  
 Air Business Ltd, c/o Worldnet Shipping Inc., 156-15,  
 146th Avenue, 2nd Floor, Jamaica, NY 11431, USA*

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## A Golden Age for Biophysics?

by Chris Willmott, Science Editor



When you hear news stories reporting an increase in the occurrence of some phenomena, crime statistics would be a classic example, there is always a question about the extent to which any change is a genuine escalation or whether the apparent shift is, at least in part, fuelled by a rise in awareness.

It seems to me that we are currently experiencing an increase in the prominence of various biophysical techniques. This is not a view supported by hours spent scrutinising publication data, hence the caveat that it may, in fact, be a change in my awareness of these approaches rather than their usage *per se*. For this reason I couldn't guarantee that we are truly in a golden age for biophysics (hence the addition of the question mark in my title). Nevertheless it certainly *feels* that way. The award of the 2017 Nobel Prize in Chemistry to the inventors of Cryogenic Electron Microscopy (cryo-EM) is empirical evidence that my perception is not without substance. (Incidentally, Richard Henderson, co-winner of that prize, was visiting Leicester at the time he heard the news of his award and conducted initial media interviews in a borrowed office next to my own. This is likely to be the closest I ever get to the excitement of winning a Nobel Prize.)

It has, as always, been a privilege to get prior sight of the articles in this issue of the magazine. We have a lovely set of pieces looking at the (re)emergence of methods and tools for biophysics. These include investigation of biomolecular interactions, variously using isothermal titration calorimetry (ITC), microscale thermophoresis (MST), and multi-wavelength analytical ultracentrifugation (MWL-AUC). There are insights drawn from neutron macromolecular crystallography (NMX) and ultrafast pulses of X-rays derived from X-ray free electron lasers (XFEL). We look at the potential to study molecular dynamics using 2D Infrared Spectroscopy. There are reflections on the convergence of different approaches that are/will be integral to "single molecule science", and the deployment of techniques such as single-molecule fluorescence resonance energy transfer (FRET) to investigate RNA-based regulation.

Finally, we have 'A beginner's guide to cryo-EM'. This is the first of what, we hope, will be a regular 'Beginner's Guide...' feature in forthcoming issues of *The Biochemist*. The launch of this series is a recognition that "biochemistry" is a broad discipline and that methods which are bread-and-butter to colleagues in one sector of our community may be little more than mysterious acronyms to others. If you have recommendations for techniques and methods that could be discussed in this series (maybe prompted by the next time you sit in a departmental seminar or presentation and the speaker launches in assuming prior knowledge that you do not have) then please do let us know. ■