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Editorial

New beginnings

As 2022 begins, the COVID-19 pandemic is still ongoing and continuing to impact our lives. Since its initial characterization, the structural biology community has made invaluable contributions towards the understanding of the SARS-CoV-2 virus and its components on a molecular level, facilitating structure-guided antiviral drug discovery and the development of novel therapeutic approaches against COVID-19. These efforts are helped by continuous innovations in the field. It seems a good time to reflect on some of the structural approaches that have enabled this progress in our understanding of SARS-CoV-2 as well as many other biological systems. In this spirit, in this Focus issue we highlight recent developments in different areas of structural biology.

The articles in this first part of a special collection on “Structural tools in biological discovery” cover a wide range of methods. David Goodsell and Stephen Burley describe RCSB Protein Data Bank resources for the structure-guided design of mRNA vaccines against SARS-CoV-2 and other viral pathogens. A perspective from Angela Gronenborn discusses the benefits of ^{19}F NMR spectroscopy for studying biological systems and its potential for in-cell NMR measurements. Babis Kalodimos and co-workers provide an overview of Methyl-TROSY spectroscopy and present programs that enable rapid methyl assignment in their resource article. Recent advances in biomolecular small-angle scattering are reviewed by Jill Trehwella. In a review, Andrea Graziadei and Juri Rappsilber highlight the importance of crosslinking mass spectrometry for structural model validation and integrative modeling and discuss future in-cell applications of crosslinking mass spectrometry. The importance of integrative approaches in structural biology is further emphasized in a review from Frank Alber and colleagues, who describe how integrated imaging, sequencing-based assays, and computational analysis can be combined for genome structure analysis.

With the start of 2022, we are also completing the transition of *Structure* to an in-house editorial team. Indeed, the articles in this Focus issue were commissioned by our former Academic Editors Andrej Sali and Christopher Lima, who stepped down at the end of September 2021, and the former in-house Editor of *Structure*, Mishtu Dey. We at Cell Press are very grateful and indebted to Andrej Sali and Christopher Lima for their efforts, hard work, and dedication during their 18 years at the helm of *Structure* and for their continuing support of the journal as advisory board members. I wish them all the best for the future. I also want to express my gratitude to Mishtu Dey, who has guided the journal for the past 4 years and is now focusing on her role as Editor-in-Chief of *Cell Chemical Biology*. Finally, I thank the interim Editor-in-Chief, Ilil Carmi, for covering the transition period until I took up my position as the new in-house Editor-in-Chief of *Structure* in December 2021.

Throughout my career, I have been passionate about structural biology. I learned X-ray crystallography during my PhD studies at the University of Cambridge working on RNA degradosome components. After two postdoctoral positions at the Max Planck Institute for Molecular Physiology in Dortmund and the Max Planck Institute for Medical Research in Heidelberg, I became a group leader in the Department of Neurobiology at the Max Planck Institute for Biophysical Chemistry in Göttingen, where I studied the structures of autophagy-related proteins for nine years. In 2016, I joined *Nature Communications* as an editor and handled manuscripts related to structural biology and protein folding.

I am excited to bring these diverse experiences into my new leadership role at *Structure*. *Structure* was founded in 1993 as the first journal exclusively devoted to structural biology, and as Editor-in-Chief I hope to expand its content and readership and publish the kind of exciting research that will inspire a younger generation of structural biologists. I am committed to serving the community and providing good author service. I will be sharing more about my plans for the journal in the near future.

I wish all our readers, authors, reviewers, and advisory board members a happy, healthy, and successful new year.

Karin Kühnel

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