



## Shelley Berger, PhD

Daniel S. Och University Professor  
Director, Epigenetics Institute  
Penn Integrated Knowledge Professor (PIK)  
The Perelman School of Medicine at the University of Pennsylvania  
Department of Cell and Developmental Biology; Biology; Genetics  
Philadelphia, PA

**Dr. Berger**, Ph.D., is the Daniel S. Och University Professor at University of Pennsylvania (Penn), and is a faculty member in the Cell & Developmental Biology Department and the Genetics Department in the Perelman School of Medicine (PSOM), as well as the Biology Department in the School of Arts and Sciences. Dr. Berger also serves as founding and current Director of the Epigenetics Institute in the PSOM, an internationally respected group of faculty members working on chromatin and epigenetics. Dr. Berger earned her PhD from University of Michigan and was a post-doctoral fellow at Massachusetts Institute of Technology. She previously held the Hilary Koprowski Professorship at Wistar Institute in Philadelphia. Dr. Berger has organized numerous international meetings on epigenetics and chromatin, has served as Senior Editor at *Molecular and Cellular Biology*, and other journals and participates on advisory committees for foundations (such as Stand Up to Cancer, CA), for research institutions (such as Max Planck Institute, Germany), and for biotechnology companies (such as Novartis and Chroma). She serves on review boards and panels for NIH/NIA Board of Scientific Counselors, Gladstone Institute at UCSF, IGBMC (Strasbourg), CPRIT (Texas), European Research Council (Brussels), Cancer Research UK (London), and numerous panels at NIH extramural and intramural (such as the Board of Scientific Counselors, NIA). She has served on international committees to establish nomenclature for histone modifying enzymes, and to help create the NIH-sponsored Human Epigenome Project. Dr. Berger received the HHMI Collaborative Innovator award, the Ellison Foundation Senior Scholar award, the Glenn Foundation award for Mechanisms in Aging and awards from the Stand Up To Cancer Foundation, the Kleberg Foundation, Sanofi, and Celgene. Dr. Berger received the Stanley N. Cohen award in 2016, the highest recognition for basic biomedical research at the Penn School of Medicine. Dr. Berger is an elected member of the National Academy of Sciences (18), National Academy of Medicine (12), and American Academy of Arts and Sciences (13).

Dr. Berger has been a faculty member for more than twenty years, recently at the University of Pennsylvania. Her laboratory studies chromatin and epigenetic regulation of the eukaryotic genome, focusing on post translational modifications (PTMs) of histone proteins, and she teaches and mentors in these subjects for undergraduates and graduate students in the Biology Department and in the School of Medicine at Penn. Dr. Berger has trained numerous graduate students and postdoctoral fellows who are successful in careers in academia, in the pharmaceutical industry, and in scientific writing and teaching; an additional ~20 trainees are currently in the lab, including a mix of undergraduates, graduate students, postdoctoral, and medical fellows. Dr. Berger received the 2016 Penn Biomedical Postdoctoral Programs Distinguished Mentor Award and the 2017 Award for Faculty Mentoring Undergraduate Research.

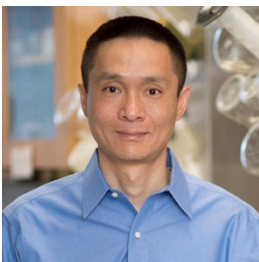
Over its history, research in Dr. Berger's lab has uncovered numerous chromatin enzymes and has addressed fundamental questions on their mechanisms in modifying both histones and DNA binding activators (i.e. the tumor suppressor, p53) in transcription. These findings have contributed to the explosion in broad interest and focus on epigenetics in biomedical research. Indeed, in recent years her lab's effort has become increasingly focused on the study of mammalian biology and human diseases, including cancer and other diseases associated with aging, as well as epigenetic control of learning and memory in mammals and complex social behavior in the ant model system. The lab has published more than 200 papers and reviews and many in high impact journals, such as recent papers in *Cell*, *Nature*, *Science*, *Nature Neuroscience*, and *Genes & Development*. Her work on epigenetics of behavior in ants has been covered in *The New York Times*, *The New Yorker*, and the *Washington Post*.



### **Margaret ("Peggy") Goodell, PhD**

Professor and Chair, Molecular and Cellular Biology  
Vivian L. Smith Chair in Regenerative Medicine  
Director, Stem Cells and Regenerative Medicine Center (STaR)  
Baylor College of Medicine  
Houston, TX

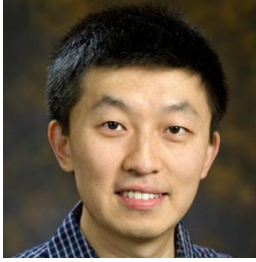
**Dr. Goodell** is Professor and Chair of the Department of Molecular and Cellular Biology, and Director of the Stem Cells and Regenerative Medicine Center, at Baylor College of Medicine, in Houston, Texas. Goodell's research is focused on the mechanisms that regulate hematopoietic stem cells, and their dysregulation in malignancies, particularly DNA Methyltransferase 3A (DNMT3A). Goodell is a former president of the International Society for Experimental Hematology (2013). She is a recipient of the Damashek Prize from the American Society of Hematology (2012), the Edith and Peter O'Donnell Award in Medicine from TAMEST (2011) and the Tobias Award from the International Society for Stem Cell Research (2020). Goodell is a member of the National Academy of Medicine and holds the Vivian L. Smith Chair in Regenerative Medicine. She is Chair of the Scientific Advisory Board of the Keystone Symposia and is a member of their Board of Directors. She has served on the editorial board of *PLoS Biology*, and as an Associated Editor of *Blood*, and currently serves on the editorial boards of *Cell Stem Cell* and *Cancer Cell*. Goodell directs a laboratory of about 15 trainees.



### **Chuan He, PhD**

John T. Wilson Distinguished Service Professor  
Department of Chemistry  
The University of Chicago  
Chicago, IL

**Dr. He** is the John T. Wilson Distinguished Service Professor in the Department of Chemistry and Department of Biochemistry and Molecular Biology at the University of Chicago. He received his bachelor of science degree in 1994 from the University of Science and Technology of China and his Ph.D. in chemistry from the Massachusetts Institute of Technology in 2000, studying under professor Stephen J. Lippard. After training as a Damon-Runyon postdoctoral fellow with professor Gregory L. Verdine at Harvard University, he joined the University of Chicago as an assistant professor, rising to associate professor in 2008 and full professor in 2010. He was selected as an investigator of the Howard Hughes Medical Institute in 2013. Dr. He's research spans a broad range of fields including chemical biology, RNA biology, epigenetics, biochemistry, and genomics. His recent research concerns reversible RNA and DNA methylation in biological regulation. In 2011, his group discovered reversible RNA methylation as a new mechanism of gene expression regulation. His laboratory has spearheaded the development of enabling technologies to study the biology of RNA and DNA modifications.



### **Yuan He, PhD**

Assistant Professor  
Department of Molecular Biosciences  
Northwestern University  
Evanston, IL

**Dr. He** obtained his Bachelor's degree from Beijing Technology and Business University in China and Ph.D. from Northwestern University. His post-doctoral studies were conducted with Dr. Eva Nogales at Lawrence Berkeley National Laboratory. Dr. He returned to Northwestern University and joined the faculty in the Department of Molecular Biosciences as an Assistant Professor. His lab is interested in studying the molecular mechanisms by which large, multi-subunit complexes engage in DNA-centric processes. Current research topics include two main areas: (1) how gene transcription is regulated by the assembly of the initiation complex at the core promoter and (2) how various types of DNA damage are repaired and why deficiencies in these repair pathways lead to pathology of cancer predisposition or accelerated aging.



### **Cigall Kadoch, PhD**

Associate Professor, Pediatric Oncology, Dana-Farber Cancer Institute  
Affiliated Faculty, Biological Chemistry and Molecular Pharmacology, Harvard Medical School  
Institute Member and Epigenetics Program Co-Director, Broad Institute of MIT and Harvard  
Boston, MA

**Dr. Kadoch**, Ph.D. is an Associate Professor of Pediatric Oncology at the Dana-Farber Cancer Institute, Affiliate Faculty of Biological Chemistry and Molecular Biology at Harvard Medical School, and Institute Member and Epigenomics Program Co-Director at the Broad Institute of MIT and Harvard.

She established her independent laboratory in 2014, at age 28, one of the youngest scientists ever appointed to the Harvard Medical School faculty, immediately following completion of her Ph.D. studies in Cancer Biology at Stanford University working with developmental biologist Gerald Crabtree. She has quickly become a leading expert in chromatin and gene regulation and is internationally recognized for her groundbreaking studies in these areas. Specifically, her laboratory studies the structure and function of chromatin remodeling complexes such as the mammalian SWI/SNF (or BAF) complex, with emphasis on defining the mechanisms underlying cancer-specific perturbations. Of note, the recent surge in exome- and genome-wide sequencing efforts has unmasked the major, previously unappreciated contribution of these regulators to malignancy: indeed, the genes encoding subunits of mammalian SWI/SNF complexes are mutated in over 25% of human cancers.

Dr. Kadoch has received numerous prestigious awards and research grants to support her academic laboratory at Harvard, including the NIH Director's New Innovator Award, the Pew Scholar Award, the American Cancer Society Research Scholar Award, and, most recently, the American Association for the Advancement of Science (AAAS) Martin and Rose Wachtel Cancer Research Prize. Additionally, she was named to the Forbes 30 Under 30 list, MIT Technology Review 35 Innovators Under 35, Popular Science Brilliant 10, and Business Insider Top 30 Young Leaders in Biopharma.



## Danny Reinberg, PhD

Terry and Mel Karmazin Professor  
Department of Biochemistry and Molecular Pharmacology  
Howard Hughes Medical Institute  
New York Langone School of Medicine at Smilow Research Center  
Boston, MA

**Dr. Reinberg's** career-long investigation of the mechanistic basis of RNA polymerase II-mediated transcription in mammalian cells incorporated increasingly complex and biologically relevant contexts. The reconstitution of transcription initiation *in vitro* on naked DNA revealed fundamental mechanistic features of this process. The generation of biologically relevant chromatinized templates facilitated the discovery of FACT and its role in enabling the polymerase to traverse impeding nucleosomes. A major effort was made towards understanding signals and factors that naturally convert the chromatin structure to a repressed state, inaccessible to the transcription machinery. The means by which repressive complexes (Sin3 and NuRD) foster transcriptionally inactive chromatin were revealed. Some of these processes are epigenetic, being both independent of DNA sequence and heritable such that distinct cellular gene expression programs are re-established in daughter cells. The laboratory investigated specific modifications of the histones that are associated with repressed chromatin with respect to their catalysis, their outcome to transcription and in some cases their inheritance. The mechanistic basis for how the epigenetically-related PRC2 complex establishes a repressive chromatin domain and how this domain is copied during cell division was derived. Investigations were initiated into epigenetic mechanisms within the context of a whole organism that exhibits social interaction: ants.