



Gerard C.L. Wong

Guest Editor for this issue of *MRS Bulletin*

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Wong is currently a professor in the Bioengineering Department and the Chemistry Department at the University of California, Los Angeles. He received his BS degree from the California Institute of Technology and his PhD degree from the University of California, Berkeley, both in physics. In 2000, he joined

the Materials Science Department and the Physics Department at the University of Illinois at Urbana-Champaign. In addition to bacterial biofilms, his current research interests include antimicrobials, innate immunity, apoptosis, cystic fibrosis, and femtosecond hydration dynamics. His awards include the Beckman Young Investigator Award and an Alfred P. Sloan Fellowship.



George A. O'Toole

Guest Editor for this issue of *MRS Bulletin*

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O'Toole is a professor at Dartmouth Medical School. He received his PhD degree from the University of Wisconsin-Madison under the supervision of Jorge Escalante-Semerena and performed postdoctoral studies at Harvard Medical School as a Damon-Runyon Fellow under the supervision of Roberto Kolter. O'Toole joined the Dartmouth

Medical School faculty in 1999 and was promoted to professor in 2010. The current focus of his laboratory is the study of bacterial biofilms in living and non-living surfaces, including studying the role of c-di-GMP signaling in biofilm formation and the study of bacterial biofilms on epithelial cells. O'Toole also is an editor for the *Journal of Bacteriology*. His awards and honors include a NSF Career Award and Dupont Young Investigator Award, he was selected as a Pew Scholar in the Biomedical Sciences, and was recently elected a Fellow of the American Academy of Microbiology.



Thomas E. Angelini

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Angelini is an assistant professor in the Department of Mechanical and Aerospace Engineering at the University of Florida. He received his BS degree in physics and his BA degree in philosophy in 1999 from the University of Nevada, Reno. In 2005, he completed his PhD degree thesis, advised by Professor Gerard C.L. Wong at the University of Illinois. Angelini's postdoctoral

research was done with Professor David A. Weitz at Harvard University, where he studied collective tissue cell migration and bacterial biofilm spreading forces.



Michael P. Brenner

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Brenner is a Harvard College professor and the Glover Professor of Applied Mathematics at the School of Engineering and Applied Sciences. His research interests include mathematical modeling of complex systems in the biological and physical sciences.



Liraz Chai

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Chai is a postdoctoral fellow in Roberto Kolter's laboratory in the Microbiology and Molecular Genetics Department at Harvard Medical School. She received her BS degree in chemistry from the Tel-Aviv University and her PhD degree in chemistry from the Weizmann Institute of Science, Israel. During her doctoral studies in the Department of Materials and Interfaces, she studied the effect of adsorbed

polymers and electric potential on surface forces. Shifting gears to microbiology for her postdoctoral research, Chai is currently studying the effect of surface properties on biofilm formation.



Steven E. Finkel

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Finkel is an associate professor of biological sciences in the Molecular and Computational Biology section at the University of Southern California. He received his BA degree in molecular biology from the University of California, Berkeley, and his PhD degree in biological chemistry from the University of California, Los Angeles. Afterward, Finkel was a Helen Hay

Whitney Foundation Postdoctoral Fellow in the Department of Microbiology and Molecular Genetics at Harvard Medical School. Research in Finkel's laboratory focuses on the long-term survival and evolution of bacteria both in planktonic culture and in biofilms.



Michael Givskov

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Givskov is a professor and center director at the Department of International Health, Immunology, and Microbiology in the Faculty of Health Sciences at the University of Copenhagen. He holds DTech, PhD, and MSc degrees and was educated in biochemistry and microbiology. Givskov has worked extensively with biofilms, interaction with immune system, quorum sensing, and QS inhibition for almost 20 years. He developed

the antipathogenic drug principle for treatment of infections and provided proof of concept. His research is cited 1,200 times per year with an impact factor of 55. Givskov also has been awarded the Statoil Research Award for outstanding research in medical microbiology with innovative industrial application.



Mark W. Grinstaff

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Grinstaff is currently a professor of biomedical engineering and chemistry at Boston University and a College of Engineering Distinguished Faculty Fellow. He is co-founder of three companies that are commercializing his ideas. His current research activities include new macromolecule and amphiphile syntheses, self-assembly chemistry, medical imaging, drug delivery, and implant coatings. Grinstaff has published more than

120 peer-reviewed manuscripts and given more than 200 oral presentations. His awards include the American Chemical Society Nobel Laureate Signature Award, the National Science Foundation Career Award, the Alfred P. Sloan research fellowship, the Edward M. Kennedy Award for Health Care Innovation, and he was a Pew Scholar in the Biomedical Sciences and a Camille Dreyfus Teacher-Scholar.



Xiaojuan Khoo

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Khoo is currently a postdoctoral research fellow in the Langer Lab at the Massachusetts Institute of Technology. She earned a BS degree (2003) in bioengineering at the University of California, Berkeley, and a PhD degree (2011) in biomedical engineering from Boston University. Her graduate thesis research in the laboratory of Professor Mark Grinstaff involved the develop-

ment and characterization of bacteriophobic PEGylated-peptide coatings on titanium surfaces. Khoo's current research under the supervision of Daniel S. Kohane focuses on the development of novel drug delivery systems for the trans-tympanic treatment of middle ear infections.



Roberto Kolter

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Kolter is professor of microbiology and molecular genetics at Harvard Medical School, where he has been a faculty member since 1983 and co-director of Harvard's university-wide Microbial Sciences Initiative since 2003. He earned his BS degree at Carnegie Mellon University, his PhD degree at the University of California, San Diego, and carried out postdoctoral training at Stanford University. At Harvard, Kolter has

worked on antibiotic synthesis, bacterial starvation physiology, experimental evolution, bacterial biofilms, and chemical communication in the microbial world. He also has been involved in science teaching and policy worldwide. Kolter recently served as the president of the American Society for Microbiology and now serves as chair of its Public and Scientific Affairs Board.



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Nealson received a BS degree in biochemistry (1965) and his PhD degree in microbiology (1969), both from the University of Chicago. He then performed postdoctoral work at Harvard University with Professor J.W. Hastings. Nealson has worked at the University of California, San Diego's Scripps Institution of Oceanography; was a distinguished professor at the University of Wisconsin, Milwaukee and the Jet Propulsion

Laboratory at the California Institute of Technology; and was the Wrigley Chaired Professor at the University of Southern California. His current areas of interest include the study of alkaliphilic microbes and the study of extracellular electron transport by and between microbes. Nealson is a member of the American Academy of Microbiology and has received numerous awards, the most recent being the DC White Medal for research and mentoring from the American Society for Microbiology (2010).



Matthew R. Parsek

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Parsek has been an associate professor of microbiology at the University of Washington Medical Center in Seattle, since 2005. He obtained his PhD degree in microbiology from the University of Illinois at Chicago in the lab of Ananda M. Chakrabarty, where he studied LasR-type regulators in *P. aeruginosa*. Parsek then pursued postdoctoral studies on bacterial quorum sensing with E. Peter Greenberg at the University of Iowa,

Iowa City. He also was an assistant professor in both civil and environmental engineering at Northwestern University, Evanston, IL, and microbiology at the University of Iowa. His research interests include the ecology and evolution of quorum sensing in Gram-negative bacteria, diversification of bacterial populations in biofilms, and the structure, function, and regulation of the biofilm matrix of *P. aeruginosa*.



Lars D. Renner

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Renner is a DFG postdoctoral fellow in the lab of Professor Douglas Weibel at the University of Wisconsin-Madison in the Department of Biochemistry. He completed his PhD degree at the Leibniz Institute for Polymer Research and the Technical University Dresden, Germany (2009), under the supervision of Professor Carsten Werner. Renner's main research interests are biointerfaces and the behavior of bacteria at interfaces.



Agnese Seminara

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Seminara has been a Marie-Curie postdoctoral fellow at Institut Pasteur and Harvard University since 2008. She graduated from the University of Nice with a thesis on turbulence (2007) and completed her undergraduate studies in theoretical physics at the University of Genoa (2004). During her PhD degree studies, Seminara received, among other grants, the

L'Oreal-Unesco Award for Women in Science. She is broadly interested in modeling of biological systems, in particular the biomechanics of various collective motility mechanisms in bacteria and fungi and the evolution of cooperation.



Joshua D. Shrout

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Shrout is an assistant professor of civil engineering and geological sciences and a member of the Eck Institute for Global Health at the University of Notre Dame. He holds a BS degree in environmental engineering from Northwestern University, an MS degree in civil and environmental engineering from Marquette University, and a PhD degree in environmental engineering from the University of Iowa. Shrout began researching

bacterial biofilms and surface motility as a postdoctoral fellow in the laboratory of Matthew Parsek at the University of Washington. His research focuses on bacterial community interactions, motility, and biofilm formation.



Tim Tolker-Nielsen

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Tolker-Nielsen is an associate professor in the Department of International Health, Immunology and Microbiology, at the University of Copenhagen. He obtained his PhD degree in microbial genetics under the supervision of Lars Boe at the Technical University of Denmark and did postdoctoral studies in the laboratory of Søren Molin at the Technical University of Denmark. Tolker-Nielsen works on molecular

mechanisms involved in microbial biofilm formation, including bacterial

motility, extracellular matrix production, intracellular c-di-GMP signaling pathways, and cell-to-cell signaling.



Hera Vlamakis

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Vlamakis is a research associate in the Department of Microbiology and Molecular Genetics at Harvard Medical School. Her BS degree was in microbiology from the University of Illinois at Urbana-Champaign. She obtained her PhD degree in molecular and cell biology from the University of California at Berkeley, where she studied regulation of pilus-mediated motility in *Myxococcus xanthus*. Vlamakis joined Roberto

Kolter's laboratory at Harvard as a postdoctoral researcher in 2004, where she has focused on studying differentiation of cells within *Bacillus subtilis* biofilms.



Douglas B. Weibel

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Weibel is an assistant professor at the University of Wisconsin-Madison in the Departments of Biochemistry and Biomedical Engineering. He completed his PhD degree in chemistry at Cornell University (2002) under the supervision of Jerrold Meinwald, followed by postdoctoral studies in the laboratory of George M. Whitesides at Harvard University. Weibel's laboratory studies concepts of intracellular and extracellular organization in microbiological systems.



David A. Weitz

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Weitz is a professor of physics and applied physics at Harvard University. He received his PhD degree from Harvard. Weitz worked at Exxon Research and Engineering and then became a professor of physics at the University of Pennsylvania. He moved to Harvard approximately 11 years ago. He also is the director of Harvard's National Science Foundation-funded

Materials Research Science and Engineering Center and co-director of Harvard's Kavli Institute for Bionano Science and Technology. Weitz helped establish the BASF Advance Research Initiative at Harvard, which he co-directs.



James N. Wilking

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Wilking is a postdoctoral fellow at Harvard University in the School of Engineering and Applied Sciences. He received a BS degree in chemistry from Rutgers University in 2002 and his PhD degree in chemistry from the University of California, Los Angeles in 2008; his dissertation research was in the area of soft matter physics. Wilking is interested in colloidal physics and

the material properties of soft matter, in particular the mechanics of microbial systems.



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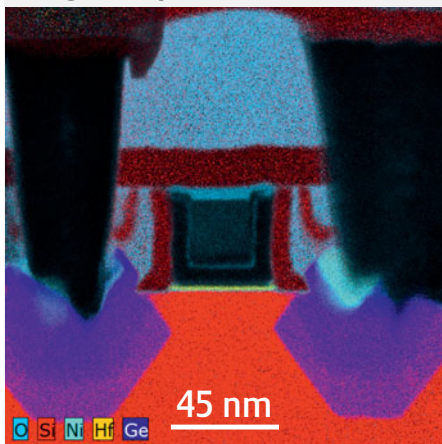
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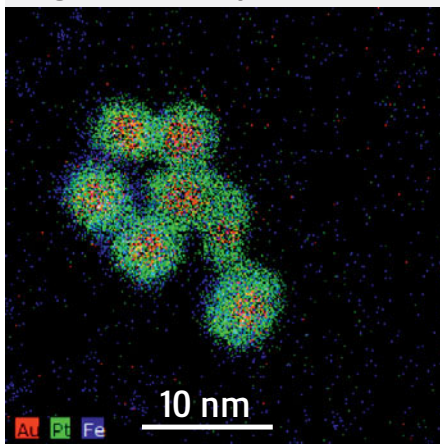
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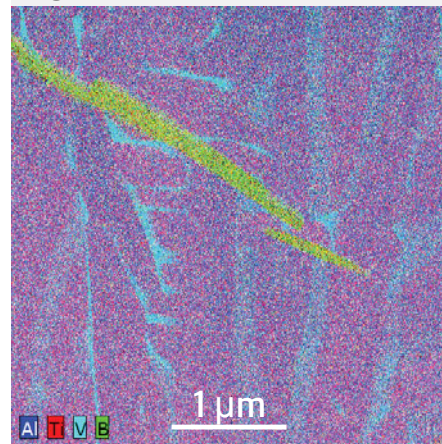
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