Anal Bioanal Chem (2016) 408:2635–2640
DOI 10.1007/s00216-016-9416-0

EDITORIAL

Meet the Contributors

Nicola Oberbeckmann-Winter[1]

Published online: 4 March 2016

This special issue features young investigators by highlighting recent research activities of rising stars in analytical and bioanalytical science. We are grateful for the overwhelming feedback we have received and thank all contributors for generously providing excellent research articles, critical reviews, and trend articles from the forefront of their research. Below, we invite you to meet those who contributed to this exceptional paper collection.

Hui-wang Ai is an Assistant Professor in the Department of Chemistry at the University of California, Riverside (UCR). Huiwang received his B.S. in Chemistry from Tsinghua University in 2003 and his Ph.D. in Chemical Biology from University of Alberta in 2008. After his post doctoral training at The Scripps Research Institute, he joined UCR in 2011. His research program spans from the development of fluorescent probes and peptide-based enzyme inhibitors to understanding oxidative/nitrosative stress in pathophysiology. He has received several awards, including the NSF CAREER Award (2014) and the Hellman Fellows Award (2013).

W. Russ Algar is an Assistant Professor in the Department of Chemistry at the University of British Columbia. He is currently a Canada Research Chair (Tier 2) in Bio/Chemical Sensing and a Michael Smith Foundation for Health Research Scholar. He received his B.Sc. (2005), M.Sc. (2006), and Ph.D. (2010) degrees from the University of Toronto. His group is interested in the development of luminescent materials as tools for bioanalysis, including prospective point-of-care diagnostic technologies, multifunctional cellular probes, molecular photonic logic, and biophysical and bioconjugate chemistry to support these research endeavors.

Yu Bai is an Associate Professor of Analytical Chemistry at Peking University. She obtained her Ph.D. in Chemistry from the Changchun Institute of Applied Chemistry, Chinese Academy of Sciences, in 2004. She was recipient of the Chinese National Science Fund for Excellent Young Scholars of China in 2013. Her major research interests focus on (i) application of nanomaterials in the preparation and analysis of biological samples; and (ii) establishment of novel analytical methods and disease-related metabolomics based on LC and mass spectrometry.

Published in the topical collection featuring *Young Investigators in Analytical and Bioanalytical Science* with guest editors S. Daunert, A. Baeumner, S. Deo, J. Ruiz Encinar, and L. Zhang.

✉ Nicola Oberbeckmann-Winter
nicola.oberbeckmann-winter@springer.com

[1] Analytical and Bioanalytical Chemistry, Springer, Tiergartenstrasse 17, 69121 Heidelberg, Germany

Ana M. Ballesteros-Gómez is researcher at the IVM-VU University Amsterdam (The Netherlands). In 2014 she was awarded a top talent VENI grant from the Netherlands Organisation for Scientific Research (NWO). In June 2015 she received the best young investigator prize by the Analytical Chemistry Spanish Society (SEQA). Her research is focused on the development of fast screening methods for additives in products, mainly based on ambient mass spectrometry, and with special interest in the identification of novel and unknown contaminants.

Maxim V. Berezovski is Associate Professor of Chemistry at the University of Ottawa in Canada and Director of Imaging and Proteomics core facilities. He won a 2015 University of Ottawa Young Researcher Award and was the recipient of an Early Research Award from the Ministry of Research and Innovation in 2012. His research focuses on the study of affinity interactions and conformational dynamics of biomolecules by kinetic capillary electrophoresis and mass spectrometry and on the development of DNA aptamers for sensing pathogens and cancer cells.

Anna Laura Capriotti is Assistant Professor of Analytical Chemistry at the Sapienza University of Rome. She has been awarded seven prizes, such as Best Young Researcher 2015 by the Italian Chemical Society (SCI) in Analytical Chemistry, Ph.D. Thesis Award 2013 granted by Sapienza Università Editrice, Best Bachelor Thesis 2010 in Analytical Chemistry by SCI, and other awards for best oral presentation and poster presentation at national conferences. Her research activities are focused on the development and validation of novel analytical methodologies, based on mass spectrometry and separation techniques, for the characterization and determination of substances, both natural and anthropogenic, in environmental, food, plant, and biological matrices.

Shelley A. Claridge is Assistant Professor in the Department of Chemistry and the Weldon School of Biomedical Engineering at Purdue University. She completed her Ph.D. in Chemistry at UC Berkeley in 2008 with A. Paul Alivisatos and Jean M. J. Fréchet, and was a NIH Postdoctoral Fellow and Mirkin Family Postdoctoral Fellow with Paul S. Weiss at UCLA and Penn State University, developing custom multimodal scanning probe techniques for applications in biology. Her research in biomolecule-graphene interfaces and nanoscale characterization has been recognized with an ACS Doctoral New Investigator Award, the UCLA Chancellor's Award for Outstanding Postdoctoral Research, and the UCLA Molecular Biology Institute Award for Postdoctoral Research. She has also been recognized as a Teach for Tomorrow Fellow at Purdue.

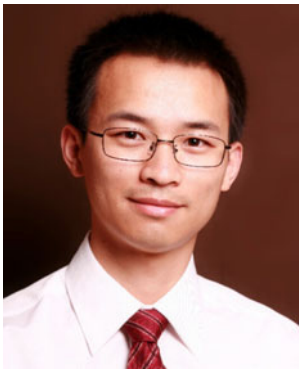
Alexander Gundlach-Graham is a Marie-Curie Postdoctoral Fellow in the group of Professor Dr. Detlef Günther at ETH Zurich. His current research focuses on high-resolution laser-ablation ICP-TOFMS imaging and engineered nanoparticle detection and sizing with single-particle ICP-TOFMS. He received his Ph.D. in 2013 from Indiana University, for the development and characterization of distance-of-flight mass spectrometry (DOFMS).

Xiaoxiao He is a Professor at the College of Biology at Hunan University in China. She received the 2nd class of the State Natural Science Award of P.R. of China in 2011, and the 1st class of the Natural Science Award (Hunan Province) in 2009. She has published over 100 papers in her major research areas, including bioanalytical chemistry and bionanotechnology.

Xiue Jiang
is a Professor at the Changchun Institute of Applied Chemistry, Chinese Academy of Science, where she received her Ph.D. degree. She is a recipient of P and G Scholarship, CAS, and Alexander von Humboldt Scholarship, Germany. In 2013, she won the National Science Foundation for Excellent Young Scholars of China. Her main research interests are studying the nano-biological interface by spectroelectrochemistry and visulization method to gain insight into the molecular mechanism of nano-biological interaction.

Lisa M. Jones
is Assistant Professor in the Department of Chemistry and Chemical Biology at Indiana University-Purdue University Indianapolis. Her research interests include the use of the oxidative-based footprinting method fast photochemical oxidation of proteins (FPOP) coupled with mass spectrometry to identify protein–protein interaction sites, and she is currently extending the use of this method for the in cell analysis of proteins.

Sebastian Kruss
is an independent group leader (equivalent to Assistant Professor) at the Institute of Physical Chemistry at Göttingen University in Germany. He received a DFG postdoctoral fellowship in 2012 and a Liebig-fellowship from the FCI (Fonds der chemischen Industrie) in 2014. His group is working on nanomaterials, biosensors, and novel approaches to interrogate complex biological systems.

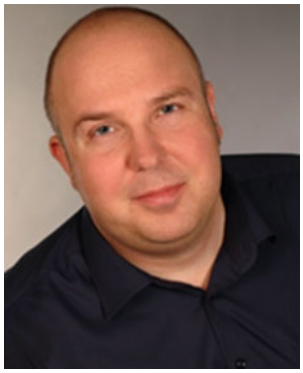


Qian Liu
has been Associate Professor of Chemistry at the Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences, since December 2012. He has won the National Science Fund for Excellent Young Scholars of China and the Chinese Chemical Society Award for Outstanding Young Chemist. His current research interests include the development of new analytical methods for trace level of pollutants, environmental application of nanomaterials, and using stable isotopes to study the processes and trace the sources of pollutants.

Matthew Ryen Lockett
is Assistant Professor of Chemistry at the University of North Carolina at Chapel Hill and a member of the UNC Lineberger Comprehensive Cancer Center. His group is interested in developing paper-based scaffolds for generating 3D tumor models, and using these models to understand the role of the microenvironment in modulating cellular phenotype and invasiveness; new technologies to express and purify membrane-bound cytochrome P450 enzymes for biophysical studies of membrane–protein interactions and applications in drug screening; new surface chemistries to study light-mediated reduction reactions at or near the surface of amorphous carbon thin films.

Ángela I. López-Lorente
is a Humboldt postdoctoral research fellow at the Institute of Analytical and Bioanalytical Chemistry at Ulm University, Germany. She is currently working on mid-infrared waveguide-based approaches for advanced protein analysis. She has received awards from the Spanish Society of Applied Spectroscopy, Andalusian Analytical Chemical Society, and Lilly Company for her doctoral thesis and extraordinary Ph.D., and the Jacobo Cárdenas prize from the University of Córdoba as well as the Spanish National Award on Graduate Studies on Chemistry, among others.

Xiliang Luo
is a Professor of Chemistry at the Qingdao University of Science and Technology and an affiliate in the university's Key Laboratory of Sensor Analysis of Tumor Marker, Ministry of Education. He won a Marie Curie International Incoming Fellowship in 2011 and was a recipient of the National Science Foundation for Excellent Young Scholars in 2014. His group is developing new biochemical analysis systems based on nanomaterials and functional polymers.



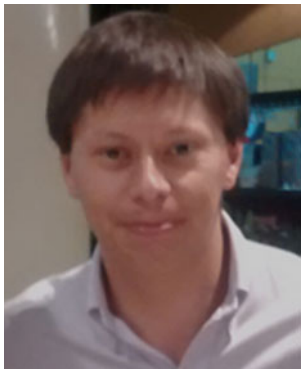
Stefan Nagl
is a group leader at the Institute of Analytical Chemistry, University of Leipzig, Germany. He was awarded fellowships of the German Research Foundation and others and his group is interested in optical chemical micro- and nanosensors, the development of novel optical detection methods, micro-nano-integration and automation of miniaturized (bio-) process, and analytical systems.

Vivek C. Maheshwari
is Associate Professor of Chemistry at the University of Waterloo, Canada. He received the Early Researcher Award from the province of Ontario in 2015. His group is researching development of composite nanoelectrodes using Au nanoparticle chains and their application as sensors and multifunctional materials.

Zhou Nie
obtained his Ph.D. in physical chemistry in 2007 from the Institute of Chemistry, Chinese Academy of Sciences, and then began his academic career at the State Key Laboratory of Chemo/Biosensing and Chemometrics, College of Chemistry and Chemical Engineering in Hunan University. As a Full Professor, he won the National Science Fund (NSFC) for Excellent Young Scholars in 2012 and was selected as the Young Top-Notch Talent in Ten Thousand Talent Program in 2015. His current research interest is mainly focused on the development of new biosensors and bioanalytical methods for epigenetic targets based on functional proteins and nucleic acids.

Na Na
has been a Professor of Chemistry at Beijing Normal University since August 2015. She has won the 2015 National Science Fund for Excellent Young Scholars, 2012 Chinese Chemical Society Award for Outstanding Young Chemist, and 2011 National Excellent Doctoral Dissertation of P.R. China. Her current research interests include the development of new sensing strategies based on chemiluminescence and fluorescence, as well as the fast identification and discrimination by optical sensor array and ambient mass spectrometry.

Nathan D. Olson
is currently a research biologist at NIST. His current research interest is advancing metrology of microbial genomics and metagenomics.



Johann F. Osma is Associate Professor at Universidad de los Andes (Colombia) and head of the biomicrosystems research field from the microelectronics research center (CMUA) at the same university. He manages a clean-room specialized on biosensors and microfluidic systems dedicated to environmental monitoring, hazardous material detection, defense, and aerospace.

Zoyne Pedrero Zayas has been a junior research scientist at CNRS (Centre National de la Recherche Scientifique) since 2012, specifically at the Laboratoire de Chimie Analytique, Bio-inorganique et Environnement, IPREM (Institut pluridisciplinaire de recherche sur l'environnement et les matériaux), Pau, France. Her present research interest is principally related to the use of natural isotopic fractionation and the development of analytical strategies by using MC-ICP-MS as a tool for the understanding of biogeochemical processes of Hg and other metal/loids.

Waldo Quiroz received his Ph.D. at the Pontificia Universidad Católica de Valparaíso in Chile and became an academic at his alma mater in 2006. He is a researcher at the Laboratorio de Química Analítica y Ambiental. His works are focused on analytical chemistry, environmental chemistry, and science education. His main interests today are the bioanalytical chemistry of antimony and also the application of scientific realism for education in chemistry.

Renã Robinson is currently Assistant Professor in the Department of Chemistry at the University of Pittsburgh. She was a Lyman T. Johnson and UNCF/Merck postdoctoral fellow, received the 2010 Society of Analytical Chemists in Pittsburgh Young Investigator Award, and the 2014 Lloyd N. Ferguson Young Investigator Award. She is developing high-throughput proteomics methodology to study aging and age-related diseases, such as Alzheimer's disease.

Joaquín Rodríguez-López has been Assistant Professor of Chemistry at the University of Illinois since 2012. He obtained a Ph.D. in Analytical Chemistry from the University of Texas at Austin with Professor Allen J. Bard (2010), and did postdoctoral research at the Cornell University with Professor Héctor D. Abruña. His interests are at the intersection of analytical chemistry and energy materials. His group advances the design of nano-materials and nano-interrogation methods that lead to a wider understanding of electrode reactivity. An emerging investigator, he aspires to build a dynamic group that creates distinctive tools and concepts in the benefit of green and high-performance energy materials.

Alfonso Salinas Castillo is a Postdoctoral Researcher at the Analytical Chemistry Department of the University of Granada (Spain). He won a 2007 prize for young investigators from the University of Miguel Hernandez. He is currently working as a researcher at the ECsens Group and his present research interest includes optical sensors and biosensors, luminescent nanoparticles, microfluidic paper-analytical detection, and colorimetric sensors.

Bin Su is Full Professor at the Department of Chemistry, Zhejiang University, China. He has more than 15 years of research experience in physical and analytical electrochemistry. His current research interests focus on electrochemiluminescence imaging analysis, molecular separation by nanochannel membranes, and nanofluidics.

Laura Trapiella-Alfonso obtained her Ph.D. in chemistry with a focus on analytical nanoscience in 2013 at the University of Oviedo (Spain) under the supervision of Professor Pereiro-García and Dr. Costa-Fernández. During her Ph.D., she completed a stay at Florida State University (USA) under the supervision of Professor Mattoussi, studying metal nanoclusters. She is currently a postdoctoral researcher at Chimie ParisTech and ESPCI (France) working in a collaborative project with Professor Varenne and Professor Lequeux. Her research focusses on the design of new nanoprobes for biomedical imaging.

Javier L. Urraca studied chemistry at the Universidad Complutense of Madrid (UCM), Spain, where he also received his doctorate. He received the 2007 Award for the Best Ph.D. Thesis from the Faculty of Chemistry at UCM, and the 2007 Outstanding Doctoral Thesis Award in Spectroscopy sponsored by the Spanish Society for Applied Spectroscopy. In 2009 he was awarded a two-year Alexander von Humboldt Research Fellowship for Postdoctoral Researchers to work in Professor B. Sellergren's research group at Dortmund University. Since 2012 he has held a postdoctoral position (UCM Program for Internatio nal Talent Recruitment, PICATA) in the Optical Sensors and Applied Photochemistry group (GSOLFA) at UCM. His main research interests lie in the field of molecularly imprinted polymers (MIPs) and their application to the development of optical sensors and in analytical separations.

Tie Wang is a Professor at the Institute of Chemistry, Chinese Academy of Sciences (ICCAS). He is a recipient of the 1000 Young Talents program, the National Natural Science Foundation of China. His group is mainly engaged in developing novel assemblies of magnetic, electronic, and photonic functional nanomaterials, as well as applying them in various areas, such as energy, catalysis, health, biological imaging, and surface-enhanced Raman scattering (SERS).

Yunsheng Xia is a Professor at the College of Chemistry and Materials Science, Anhui Normal University, China. He is the recipient of the China National Fund for Excellent Young Scientists (2014). His research interest focuses on nanoparticle assembly, optical manipulation, and sensing/biosensing applications.

Xiaojiang Xie received his Ph.D. degree from the University of Geneva and is currently a postdoctoral fellow at the École Normale Supérieure (ENS Paris). He is the recipient of the Chinese government award for outstanding self-financed students abroad and the Metrohm Award in Physical Chemistry at the Swiss Chemical Society fall meeting in 2014. His current research interests include chemical sensors with biological and theranostic relevance, optical nanosensors, solar energy conversion, synthetic molecular probes, protein engineering, and photoswitching.

Ping Yu received her Ph.D. in Chemistry from the Institute of Chemistry, the Chinese Academy of Sciences (ICCAS), in 2007. She is currently Associate Professor in the Key Laboratory of Analytical Chemistry for Living Biosystems at ICCAS. Her ongoing work focuses on interionic interaction and chem/(bio)sensors. She is a recipient of a National Excellent Young Scholars award from the National Natural Science Foundation of China (2013) and the Lu Jiaxi Young Talent Award from the Chinese Academy of Sciences (2014).