

For Immediate Release

Microscopy Society of America Announces 2021 Major Award Winners

Awardees to be honored at Microscopy & Microanalysis 2021 meeting held virtually in August.

RESTON, Virginia – May 10, 2021 – The Microscopy Society of America (MSA) announced today its 2021 major award winners. Ten individuals will be honored on August 4, 2021, at the Microscopy & Microanalysis 2021 virtual meeting. The Major Awards of the Society honor distinguished scientific contributions to the field of microscopy and microanalysis by technologists and by scientists at various career stages, as well as distinguished service to the Society.

The Society's **Distinguished Scientist Awards** annually honor preeminent senior scientists, one each in the biological and physical sciences, for a long-standing record of achievement in the field of microscopy and microanalysis during his or her career. The 2021 MSA Distinguished Scientists are:

David Agard, *University of California, San Francisco* (biological sciences);
Maximilian Haider (physical sciences); and
Knut Urban (physical sciences)

“A US biophysicist, **David Agard**, is currently a Professor of Biochemistry & Biophysics and Professor of Pharmaceutical Chemistry at the University of California, San Francisco. Having a strong background in structural biophysics, David's work focuses on elucidating the mechanisms of assisted folding by the Hsp90 molecular chaperone system, microtubule nucleation, and phage nucleus assembly, and the development of advanced technologies for light and electron microscopy. His work has been recognized by his election to the National Academy of Sciences in 2007 and American Academy of Arts and Sciences in 2009.”

“**Maximilian Haider**, an Austrian, living in Germany for 50 years, studied physics in Kiel and Darmstadt where he was introduced to electron optics by O. Scherzer and H. Rose. For his diploma work, he developed a multipole-element for a Cs-Cc aberration correction project in Darmstadt and, after developing a new electron spectrometer, he received a PhD in Physics in 1987. He then worked as staff scientist and then group leader in

the Instrumentation Program of the European Molecular Biology Laboratory in Heidelberg. Although working in a biological environment, he convinced the laboratory to accept a project, funded by the VW-Foundation, to develop a Cs-corrected TEM for high resolution EM in cooperation with the theoretician H. Rose and K. Urban for applications. In 1996 he founded, together with J. Zach, the CEOS GmbH company in Heidelberg for which he acted as managing director together with J. Zach till 2015. Since then, he has served as senior advisor to CEOS. In 2008 he was appointed as Honorary Professor at the Karlsruhe Institute of Technology. He received several highly notable awards including the Wolf-Prize. Last year, Dr. Haider was one of the winners of the highly prestigious Kavli Prize.”

“**Knut W. Urban** studied physics at the University of Stuttgart where he received his doctoral degree in 1972. He then joined the Max Planck Institute for Metals Research, where he was appointed head of the high-voltage electron microscopy group. He spent extended research stays at CEN Saclay/Paris, at BARC Mumbai, and at Tohoku University, Sendai. In 1984 he was appointed Professor of Materials Science at the University of Erlangen, and in 1987 he became Chair of Experimental Physics at RWTH Aachen University and Director of Institute for Solid State Research, Research Center Juelich. In 2004 he was co-founder of the Ernst Ruska Center for Microscopy and Spectroscopy with Electrons. In 2009 he became a Distinguished Professor at Juelich-Aachen Research Alliance (JARA). He worked in many fields of experimental physics, including atomic defects in metals and alloys, plasticity of quasicrystals, oxide superconductor thin films and devices, and structural properties of oxide materials. Urban received a number of national and international awards. Among these are the MRS von Hippel Award, and, as a member of the team developing the world's first aberration-corrected transmission electron microscope, he received (together with M. Haider and H. Rose) among others the Honda Prize for Ecotechnology, the BBVA Award in Basic Sciences, and the Wolf Prize in Physics. Urban served as President of the German Physical Society. He has an honorary doctor degree of Tel Aviv University, and he is honorary member of national and international societies including the MRS and the Japanese Institute of Metals and Materials. Last year, Dr. Urban was one of the winners of the highly prestigious Kavli Prize.”

The **Burton Medal** annually honors the distinguished contributions in the field of microscopy and microanalysis thus far in the career of a scientist of not more than 40 years of age. This year, the Burton Medalist is awarded in both the biological and physical sciences:

Reto Fiolka, *University of Texas Southwestern* (biological sciences); and **Huolin Xin**, *University of California, Irvine* (physical sciences).

“Trained as a mechanical engineer in computational fluid dynamics, **Reto Fiolka** completed his PhD at the institute of Nanotechnology at ETH Zurich in the group of Dr. Andreas Stemmer. He conducted post-doctoral research in the Howard Hughes Medical Institute's Janelia Research Campus under the late Dr. Mats Gustafsson working on 3D structured illumination microscopy and under Dr. Meng Cui on adaptive optics. At UT Southwestern, the research in his lab aims to extend the current imaging capabilities of optical microscopy such that cancer cell research and drug screening can be performed in physiologically relevant, 3D environments, ex vivo and in vivo. His microscope development is focused on improving the spatiotemporal resolution and optical penetration depth and translating new technologies to biological research.”

“**Huolin Xin** earned his B.S. in Physics from Peking University in 2005 and his Ph.D. from Cornell University in 2011. Now an Associate Professor in the Department of Physics and Astronomy at the University of California-Irvine, his research focuses on applying and developing operando and artificially intelligent transmission electron microscopy techniques to the study of structural and chemical responses of energy storage and conversion materials under external stimuli.”

The **Hildegard H. Crowley Award** and the **Chuck Fiori Award** annually honor technologists, one each in the biological and physical sciences, respectively, for significant contributions in the field of microscopy and microanalysis. The 2021 Crowley Award winner is:

Trace Christensen, *Mayo Clinic*;

the 2021 Fiori Award winner is:

Karen Bustillo, *Lawrence Berkeley National Laboratory*.

“**Trace Christensen** Trace is a Research and Development Specialist at the Mayo Clinic Microscopy and Cell Analysis Core Facility in Rochester, MN. He received a B.S. degree in Biology from Saint John's University and M.S. degree in Biotechnology Enterprise from John's Hopkins's University. Trace has also spent time training at MBL, CU Boulder, and the Scripps

Research Institute. He has worked in biological microscopy and research for over thirty years at Mayo and is involved in designing experiments and developing protocols to facilitate the research goals of investigators using a variety of imaging modalities. He has extensive experience in microwave processing and 3DEM techniques. Recently he has contributed significantly to work in mitochondrial dynamics of Alzheimer's disease, diabetes, Usher syndrome, and ischemic strokes. Trace enjoys mentoring both undergrad and graduate students. He has helped design and build a 3DEM service at Mayo that includes processing, serial block-face imaging, and data analysis - utilized by researchers at Mayo and throughout the country. Trace has been an active member of MSA since 2003 and served as Treasurer of the Diagnostic & Biomedical Microscopy focused interest group for several years. He is also a member of the Minnesota Microscopy Society and is actively working to help bring new microscopy and data analysis technologies to local universities and research institutions."

"Karen Bustillo is a Principal Scientific Engineering Associate at the National Center for Electron Microscopy (NCEM), Molecular Foundry, Lawrence Berkeley National Laboratory in Berkeley, California. She received her PhD in Materials Science and Engineering from UC Berkeley studying electronic materials. At NCEM, Karen trains and collaborates with scientists from all over the world through the Molecular Foundry user program, and her research interests include developing TEM techniques for electron beam-sensitive materials, in-situ TEM, and EDS of nanomaterials."

The **Morton D. Maser Award** annually honors an MSA member who has provided significant volunteer service to the Society over a sustained period of time. This Award recognizes outstanding volunteer service to the Society as exemplified by Mort Maser, who served the Society for many years with great dedication. The 2021 Maser Award winner is:

Leona Cohen-Gould, *Weill Cornell Medicine*.

"Leona Cohen-Gould has been a member of (E)MSA since 1980. She joined the Certification Board in 2000 and the Technologists Forum in 2010. She received her MSA Certification in 1996, served as the Chair of the Certification Board from 2011 to 2013 and is currently serving her second term as Chair. She was a Vice-Chair of the Tech Forum from 2014-2017. Lee is a member of the Facilities Operations & Management FIG and has co-chaired sessions of the Tech Forum Roundtable. Lee has been a director of the Microscopy Core Facility at Weill Cornell Medical College since 1988."

The **George Palade Award** and the **Albert Crewe Award** annually honor early career scientists, one each in the biological and physical sciences, respectively, for significant contributions in the field of microscopy and microanalysis during the first six years since doctoral graduation. The 2021 Palade Award winner is:

Yong Zi Tan, *The Hospital for Sick Children*

The 2021 Crewe Award winner is:

Wenpei Gao, *North Carolina State University*.

“**Yong Zi Tan** obtained his BSc in Biochemistry from Imperial College London (UK) and earned his PhD from Columbia University (USA) working under Prof. Bridget Carragher, Prof. Clint Potter and Prof. Filippo Mancini to solve challenging structures using single-particle cryogenic electron microscopy (cryo-EM) and to develop cryo-EM methodologies. He was involved in developing the tilt method for cryo-EM data collection to ameliorate preferred orientation, solved multiple structures of 50S ribosomal biogenesis intermediates and elucidated structures of membrane proteins from pathogens that cause malaria and tuberculosis. He is now working as a post-doctoral fellow in The Hospital for Sick Children (Canada) under Prof. John Rubinstein, focusing on solving large membrane protein complexes using cryo-EM while continuing to contribute to cryo-EM methods development.”

“**Wenpei Gao** is an assistant professor in Materials Science and Engineering at North Carolina State University. He received his Ph.D. in Materials Science and Engineering from the University of Illinois at Urbana-Champaign and was a postdoctoral research fellow at the University of California, Irvine. Gao's work in electron microscopy includes elucidating the interaction between metal and support at the interfaces in catalyst, probing the multi-scale electronic properties of boundaries and interfaces in functional oxides, and developing correlative in situ imaging techniques to study the dynamics of nanostructured catalyst. At North Carolina State University, Gao's research group focuses on using multi-model electron microscopy to understand chemical reaction and transformation of new catalyst and energy materials, bridging the atomic-scale mechanisms with materials functions.”

The Microscopy Society of America was founded as the Electron Microscope Society of America in 1942, a time of rapid development for an instrument that promised, for the first time, better resolving power than that of the traditional light microscope. The Society adopted its current name on

the occasion of its 50th anniversary, to reflect the diversity of microscopy techniques represented by its membership. Today, a variety of microscopes are capable of imaging individual atoms, and providing chemical information to identify what kind of atom is being imaged, while a variety of microscopes of lower resolving power continue to play an enabling role in understanding the world around us at a microscopic scale. The Microscopy Society of America champions all forms of microscopy and the development of new imaging technologies through its annual meeting, its publications, and its educational outreach.

Microscopy & Microanalysis (M&M) is the annual meeting of the Microscopy Society of America and the Microanalysis Society (MAS). M&M 2021 will be held virtually August 1-5.

The Microscopy Society of America is an affiliate society of the American Institute of Physics (AIP) and the American Association for the Advancement of Science (AAAS).

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For promotional purposes, photographs and biographic profiles of the 2021 Major Award winners can be found on the MSA website:

https://www.microscopy.org/awards/2021_awardsrecipient.cfm

For more information on each awardee click on the “List of Recipients” link then on the name of the individual award winner in the list. Information on previous award winners can also be found on the MSA website.

For more information, please contact:

Courtney Eiland, Marketing Communications Specialist
Microscopy Society of America
11130 Sunrise Valley Drive, Suite 350
Reston, VA 20191
E-mail: associationmanagement@microscopy.org