

From the Editor

Science for Everyone, Everywhere



What inspires curious people, young and old? Many are fascinated by organisms that they can't see or by shooting stars that they can see on a clear night. The plenary speakers at M&M 2018 in Baltimore next month will show some surprising examples of microscopy for the curious.

Microscopes are usually only found in laboratories because they are delicate and expensive. What if a microscope could be produced from parts costing less than a dollar and could be mailed as easily as a letter to any place on earth? Manu Prakash and his group at Stanford have designed and mass-produced such a microscope called the "FoldScope," winner of the 2014 *Microscopy Today* Innovation Award (among many other awards). Foldscope is an origami-based print-and-fold light microscope made of paper that incorporates printed micro-optics and illumination. While it can be assembled in 10 minutes, this microscope can deliver sub-micrometer resolution (800 nm). Images from Foldscopes designed to detect specific disease-causing microorganisms can be transmitted by cell phones from remote locations. More than 430,000 Foldscopes have been distributed to schools and clinics in over 140 countries with the intention of inspiring students and tracking serious diseases. These amateur microscopists may even make discoveries of their own, like amateur astronomers.

Amateur astronomy leads us to another question: What happens to those shooting stars that streak across the sky? Do these small meteoroids all burn up as they fall to Earth? Jon Larsen, our second plenary speaker is the author of *In Search of Stardust*, the first comprehensive atlas of micrometeorites showing their interesting surface structures. Using color light microscopy and scanning electron microscopy, Larsen shows us a range of interesting tiny objects, most originating from a band of debris between Mars and Jupiter known as the asteroid belt. Surprisingly, about 100 metric tons of meteorites strike the Earth's surface each day, but most are specks only a few hundred micrometers in size. Some are iron meteorites that are spherical because they melted and solidified as they passed through the atmosphere. Larsen shows us how to find these micrometeorites close to home, for example when they wash down your roof into your gutters. Larsen travels extensively to work with scientists in collecting micrometeorites and analyzing their microstructure and chemistry.

Both Prakash and Larsen have encouraged worldwide online communities of citizen scientists who share their images and discoveries at <http://microcosmos.foldscope.com> and <https://www.facebook.com/micrometeorites>, respectively. Join in the fun—attend these plenary presentations on August 6th to see how microscopy can inspire curiosity seekers young and old.

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Editorial Staff

Charles E. Lyman, *Editor-in-Chief*
charles.lyman@lehigh.edu
(610) 758-4249

Gennifer Levey, *Production Manager*
glevey@meridianartpro.com
(212) 780-0315

Ron Anderson, *Executive Editor*
randerson20@tampabay.rr.com

Phil Oshel, *Technical Editor*
oshel1pe@cmich.edu

Robert Price, *Associate Editor*
bob.price@uscmcd.sc.edu

Stephen Carmichael, *Columnist*
carmichael.stephen@mayo.edu

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eclark@magnet.fsu.edu

Richard Edelmann, *Education Editor*
edelmare@miamioh.edu

Deb Kelly, *Microscopy 101 Editor*
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Paul Webster, *Calendar Editor*
p.webster@oak-crest.org

John Shields, *Humor Editor*
jpshield@uga.edu

Nikolaus Cordes, *Digital Content Editor*
ncordes@lanl.gov

Thomas Kelly, *Chief Awards Judge*
Thomas.kelly@ametek.com

Advertising Sales

M.J. Mrvica Associates, Inc.
2 West Taunton Avenue, Berlin, NJ 08009
mjmrvica@mrvica.com
(856) 768-9360

Kelly Miller, *Account Manager*
kmiller@mrvica.com

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Cambridge University Press
One Liberty Plaza, 20th Floor
New York, New York 10006
(212) 337-5000

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