



## From the Editor

### 2014 *Microscopy Today* Innovation Awards

Congratulations to the winners of the fifth annual *Microscopy Today* Innovation Awards competition. These awards honor innovative microscopy-related products and methods that appeared in the previous year.

Our team of judges, led by Tom Kelly, looked for innovations that will make new scientific investigations possible. The ten winning innovations were selected on the basis of their importance and usefulness to the microscopy community. The entries most likely to win are those that provide better, faster, or entirely new methods of analysis using some type of microscope or microanalytical instrument.

The 2014 *Microscopy Today* Innovation Award winners are:

**AppFive LLC and NanoMegas SPRL** for Topspin Strain Mapping software  
**Applied Nanostructures, Inc.** for the VertiSense™ Scanning Thermal Microscopy module  
**Asylum Research** for blueDrive™ Photothermal Excitation in Tapping Mode atomic force microscopy  
**CoolLED, Ltd.** for the pE-4000 Universal LED Fluorescence Illumination System  
**FEI** for the ExSolve™ and Metrios™ systems enabling an automated metrology workflow  
**Leica Microsystems CMS GmbH** for Super-Resolution 3D Localization Microscopy  
**Max Planck Institute for Biophysical Chemistry and Abberior Instruments GmbH** for Ultraparallel RESOLFT Superresolution Microscopy  
**Manu Prakash of Stanford University** for Foldscope, an origami-based print-and-fold microscope  
**Gavin King and Krishna Sigdel of the University of Missouri–Columbia** for Direct 3D Atomic Force Microscopy  
**Hui Cao and Brandon Redding of Yale University** for the Chip-scale Random Spectrometer

Descriptions of the above innovations are given in an article within this issue. This article also lists the developers of these instruments and methods.

Details of the nomination process for the next competition will be posted on the *Microscopy Today* website ([www.microscopy-today.com](http://www.microscopy-today.com)) by January 1, 2015. Nomination applications will be accepted through March 15, 2015.

Charles Lyman  
 Editor-in-Chief

**Publication Objective:** to provide information of interest to microscopists.

*Microscopy Today* is a controlled-circulation trade magazine owned by the Microscopy Society of America that is published six times a year in the odd months. Editorial coverage spans all microscopy techniques including light microscopy, scanning probe microscopy, electron microscopy, ion-beam techniques, and the wide range of microanalytical methods. Readers and authors come from both the life sciences and the physical sciences. The typical length of an article is about 2,000 words plus figures and tables; feature articles are longer. Interested authors should consult "Instructions for Contributors" on the *Microscopy Today* website: [www.microscopy-today.com](http://www.microscopy-today.com).

ISSN 1551-9295

#### Disclaimer

The Microscopy Society of America and the editors cannot be held responsible for opinions, errors, or for any consequences arising from the use of information contained in *Microscopy Today*. The appearance of advertising in *Microscopy Today* does not constitute an endorsement or approval by the Microscopy Society of America of any claims or information found in the advertisements. By submitting a manuscript to *Microscopy Today*, the author warrants that the article is original or that the author has written permission to use copyrighted material published elsewhere. While the contents of this magazine are believed to be accurate at press time, neither the Microscopy Society of America, the editors, nor the authors can accept legal responsibility for errors or omissions.

© Copyright 2014 by the Microscopy Society of America. All rights reserved.

#### Editorial Staff

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

**Gennifer Levey, Production Manager**  
[glevey@meridianartproduction.com](mailto:glevey@meridianartproduction.com)  
 (212) 780-0315

**Ron Anderson, Executive Editor**  
[microscopytoday@tampabay.rr.com](mailto:microscopytoday@tampabay.rr.com)

**Phil Oshel, Technical Editor**  
[oshel1pe@cmich.edu](mailto:oshel1pe@cmich.edu)

**Stephen Carmichael, Columnist**  
[carmichael.stephen@mayo.edu](mailto:carmichael.stephen@mayo.edu)

**Michael Davidson, Pioneers Editor**  
[davidson@magnet.fsu.edu](mailto:davidson@magnet.fsu.edu)

**Steven Barlow, Education Editor**  
[sbarlow@mail.sdsu.edu](mailto:sbarlow@mail.sdsu.edu)

**Thomas E. Phillips, Consulting Editor**  
[phillipst@missouri.edu](mailto:phillipst@missouri.edu)

**E. Ann Ellis, Microscopy 101 Editor**  
[eann.ellisem@gmail.com](mailto:eann.ellisem@gmail.com)

**Paul Webster, Calendar Editor**  
[pwebster@usc.edu](mailto:pwebster@usc.edu)

**John Shields, Humor Editor**  
[jjshield@uga.edu](mailto:jjshield@uga.edu)

**Thomas Kelly, Chief Awards Judge**  
[Thomas.kelly@ametec.com](mailto:Thomas.kelly@ametec.com)

#### Advertising Sales

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

**Kelly Miller, Account Manager**  
[kmiller@mrvica.com](mailto:kmiller@mrvica.com)

#### Magazine website:

<http://www.microscopy-today.com>

Free subscriptions are available

#### Publisher

Cambridge University Press  
 32 Avenue of the Americas  
 New York, NY 10013-2473  
 (212) 337-5000

Circulation: 18,000

#### Editorial Board

Arlan Benschoter, *Lehigh University*  
 John Bozzola, *Southern Illinois University*  
 Peter Crozier, *Arizona State University*  
 Vinayak Dravid, *Northwestern University*  
 Joseph Goldstein, *University of Massachusetts*  
 David Grubb, *Cornell University*  
 Bryan Huey, *University of Connecticut*  
 John Mackenzie, *North Carolina State Univ.*  
 Paul Maddox, *University of Montreal*  
 Ania Majewska, *U. Rochester Med School*  
 Greg Meeker, *U.S. Geological Survey*  
 Joseph Michael, *Sandia National Labs*  
 Caroline Miller, *Indiana University*  
 Brian M. Patterson, *Los Alamos National Lab*  
 Robert Price, *University of South Carolina*  
 John Reffner, *John Jay College, SUNY*  
 Ian Robertson, *University of Wisconsin*  
 Phillip Russell, *Appalachian State University*  
 Glenn Shipley, *Citizen Microscopist*  
 Robert Simmons, *Georgia State University*  
 Paul Voyles, *University of Wisconsin*  
 Simon Watkins, *University of Pittsburgh*  
 Cynthia Zeissler, *Nat. Inst. of Sci. and Tech. (NIST)*