

WHAT IS PROJECT MICRO?

Caroline Schooley,
MSA Educational Outreach Coordinator

Project MICRO (Microscopy in Curriculum - Research Outreach) is the Microscopy Society of America's educational outreach program for middle schools. The idea began in 1993, but has taken a lot of time and effort to implement. MSA's early decision to collaborate with experienced science educators at the Lawrence Hall of Science (LHS) of the University of California at Berkeley was a wise one as their educational materials have a well-earned national reputation for excellence. The first phase of MICRO has just been completed, with the publication of a LHS teacher's manual that will support the MSA/MICRO effort to get microscopist-volunteers into classrooms nationwide. The manual will be reviewed in *Microscopy Today* soon; here is a brief description:

Explorations in Math and Science

Brady, S. and Willard, C. 1998 *Microscopic Explorations* 145 pp, paperback, 8.5 x 11", \$21.00 plus \$4.00 shipping - (MSA members may request a 15% discount). ISBN 0-924886-00-5 Lawrence Hall of Science, University of California, Berkeley, CA 94720-5200; (510)642-7262, 642-7771..

A collaboration between the Microscopy Society of America and the Lawrence Hall of Science (University of California at Berkeley) has produced an outstanding Great Explorations in Math and Science (GEMS) guide. It is written in "festival" format, with a dozen explorations that can be presented simultaneously to circulating groups of students. There is a rich assortment of supplemental information on microscopes and how to buy them, curriculum extensions, further reading, and sources of help. The units are more classic than unique and subjects include crystals, color printing, fingerprints, pond

water, brine shrimp, etc. Its uniqueness lies in the carefully written "inquiry science" presentation of those topics and the thorough classroom testing of content that a GEMS guide receives. It will work well in any classroom (grades 4-8) and teachers are not expected to have special skills..

Where do we go from here? MICRO is not just a manual. Publishing a GEMS guide will get the excitement of the microworld into thousands of classrooms. Yes, thousands! The GEMS series reputation will rapidly get Microscopic Explorations into wide use. And when it's possible to get a microscopist-volunteer into the classroom to help present the material, much can be accomplished. The availability of volunteers will encourage hesitant teachers to use microscopy. Microscopist-volunteers will take the enthusiasm generated by the manual down many lines of inquiry - as determined by the needs of the classes and the skills of the volunteers.

MSA will support organized volunteer programs through its network of thirty Local Affiliate Societies. The Saint Paul Society was one which tested the manual and volunteers from the Minnesota Microscopy Society are beginning their third year of a very successful outreach program. Their program (see website: <http://resolution.umn.edu/MMS/ProjectMICRO/Welcome.html>) is definitely worth a visit. Although the Ithaca, NY, area does not have a MSA local society, they do have a third year MICRO program, sponsored by the Cornell Materials Science Center. That program is supervised by a GEMS Associate (see below) at the local science museum. The North Carolina local society has just begun a program with a June workshop for teachers in Wilmington (led by another GEMS Associate) and they hope to expand to other parts of their state in the future. An Arizona program will begin in Tucson in the fall.

MICRO has gained an unexpected major benefit from its association with LHS. The main problem faced by other scientific societies that have begun outreach programs has been the national support of training, both for teachers and volunteers. The LHS/GEMS program is so successful that they have outgrown their ability to provide enough in-house trainers to meet the demand. So, in the period since MICRO's inception, a highly trained category of teacher-trainers, "GEMS Associates", has been developed. There now are hundreds of them, all over the country. Geographic coverage is still spotty, but the numbers are growing rapidly. MSA has access to this network to train and advise teachers and volunteers. GEMS Associates can help MSA's local societies organize programs, and in areas that are not served by participating local societies, they can invite individual microscopist-volunteers to attend GEMS workshops and then help them find a teacher who will work with them. GEMS information (other manuals, Associate addresses, a newsletter, etc.) is available at <http://www.lhs.berkeley.edu/GEMS>.

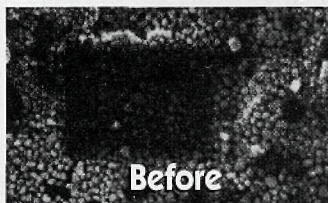
With *Microscopic Explorations* published and volunteer training being available from the GEMS Associates, the next challenge is school microscopes. Fortunately, the best microscopes for middle schools are neither complex nor expensive. Monocular 20x "dissecting" scopes cost around \$75, and three objective compound scopes (mirror, no condenser) can be purchased for \$100, so a middle school class set will cost about \$1000. Many schools already have underutilized microscopes, and all local societies will face the challenge of fundraising for school scopes. Locating microscope purchase funds probably will be easier locally than on a national scale, but MICRO is currently searching for major grant support.

Publication of *Microscopic Explorations* is the endpoint of one process, but it is also the real beginning of MICRO. Will you be a MICRO volunteer? It would take far too much space in *Microscopy Today* to provide the reasons that you're needed. The National Academy of Sciences has compiled these reasons in an excellent website (<http://www.nas.edu/rise>) - please look at it. Project MICRO has a page on the MSA website at <http://www.MSA.microscopy.com/projectMICRO/Books.html>; it will be expanded considerably during the next year. If you are able to assist, contact your local society (listed in <http://www.MSA.microscopy.com/MSALAS/LASInfo.html>) or the Project MICRO coordinator, Caroline Schooley, at schooley@mcn.org or by telephone/fax: (707)964-9460.

The next few years will be exciting, productive and rewarding. ■

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