The Microscopy Society of America's Project MICRO: The Vermont Experience

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Project MICRO (Microscopy in Curriculum – Research Outreach) is an initiative by the Microscopy Society of America (MSA) to connect scientists with middle school teachers in an effort to introduce young students to the scientific method. Through a collaboration with the Lawrence Hall of Science (LHS) at the University of California, Berkeley, a teacher's manual was produced as part of the LHS GEMS (Great Explorations in Math and Science) series. This manual, entitled "Microscopic Explorations", can be used by scientists and middle school teachers alike to prepare a Project MICRO "Festival" to be presented in the classroom. Detailed information concerning Project MICRO in general, and the Microscopic Explorations manual can be obtained from the Project MICRO web page from MSA (http://www.msa.microscopy.com/ProjectMicro/PMHomePage.html).

Our Project MICRO efforts in Vermont were established through our MSA local affiliate society, the New England Society for Microscopy (NESM). NESM's involvement with Project MICRO occurred following a presentation by Caroline Schooley (MSA Project MICRO Coordinator) on Project MICRO at a NESM meeting. Two NESM members, Mary McCann and Lynne Garone, spearheaded the NESM Project MICRO involvement. They conducted a fund-raising campaign in memory of Paul Burnette, a long-time NESM member. Through major contributions from the Burnette family, JEOL, Inc., and The Rowland Foundation, as well as contributions from individual NESM members, funds were raised to support the purchase of three microscopy kits. These kits consisted of five dissecting microscopes, five compound microscopes, ten "pocket" (30X) microscopes, forty hand-lenses, and the materials to set up the ten learning stations comprising a Project MICRO microscopy festival. These kits were introduced to the NESM members in the form of a Project MICRO festival held at the Annual NESM Spring Symposium in Woods Hole, MA in May of 1999. Following this introductory festival, we brought a kit back to Vermont and proceeded to bring the microworld into a few of the local classrooms. To date, we've reached over 425 students covering grades 5-11 in city, suburban, and rural settings, and we have requests for Microscopy Festivals in 8 schools for the 2000 - 2001 school year.

Each Project MICRO festival has taken approximately 2 hours of class time (20 minute introduction / demonstration and 10 minutes per learning station), and it has been our experience that the optimal group size is approximately 20 students (our festivals have ranged from 10 students per session, to a rather cumbersome group of 95 students, situated in 5 rooms). At least 30 minutes of recovery time were allotted between sessions to straighten each station, replenish materials, and re-make slides if running more than one session. We comfortably presented 2 sessions per day at four of the schools, which was considerably more time efficient than returning to the school a second time. After the initial MICRO festival, set-up time generally lasted two hours, and we have found that it helped to visit the school about two weeks prior to the event to examine the room layout, electrical outlets, sinks and available room lighting. We talked with the teacher(s) about

any special student accommodations and provided them with background information that they could share with the students, including the Student Observation Booklet to photocopy.

Originally, the first two festivals were scheduled by word-of-mouth (parents were employed in the University of Vermont's Cell Imaging Facility) and a brochure was then created to send out to local teachers to acquaint them with Project MICRO. Four more schools subsequently requested Project MICRO Festivals (one the very day they received the brochure!), and the local CBS television affiliate filmed a news segment at one of our rural schools, including interviews with students, a teacher, and a presenter. Since then, technicians and graduate students (from within and without our department), and even office personnel have volunteered to handle the onslaught of requests.

The experiences of the presenters, and the feedback from students and teachers has been overwhelmingly positive, and we plan to continue our Project MICRO festivals in Vermont for the foreseeable future. Already, schools that we have worked with this year have asked us if we would be able to return in two years when a new group of 5th/6th grade students would be available for a Project MICRO festival experience. We would like to encourage all of you that have the time and interest to consider becoming involved as a Project MICRO volunteer in your local community. It is truly a rewarding experience for students and scientists alike! ■

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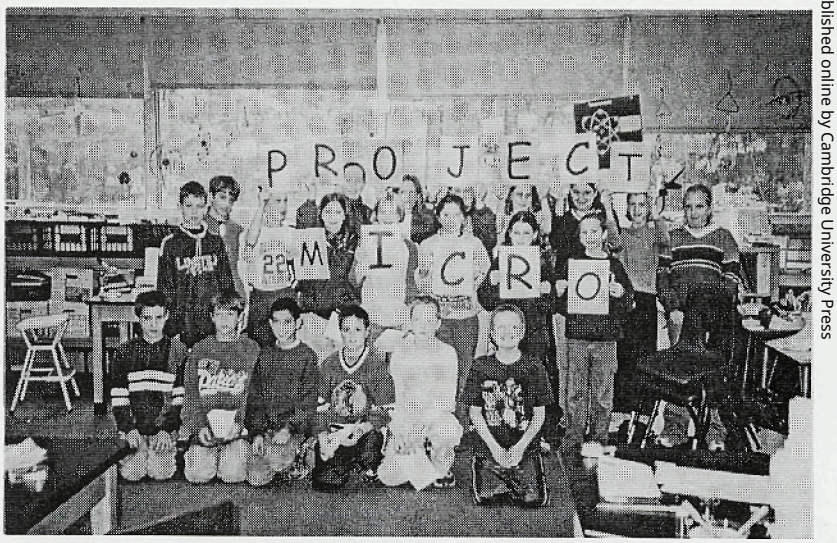

Sixth grade class from Essex Middle School salutes the Project MICRO festival.