

# Update on Project MICRO

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*NESM Winter Meeting  
December 3, 2009*

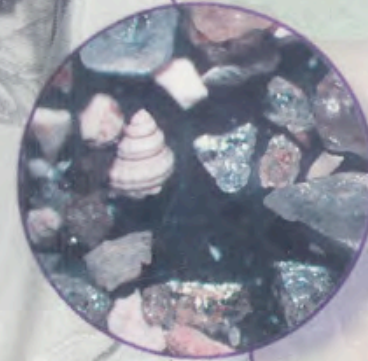
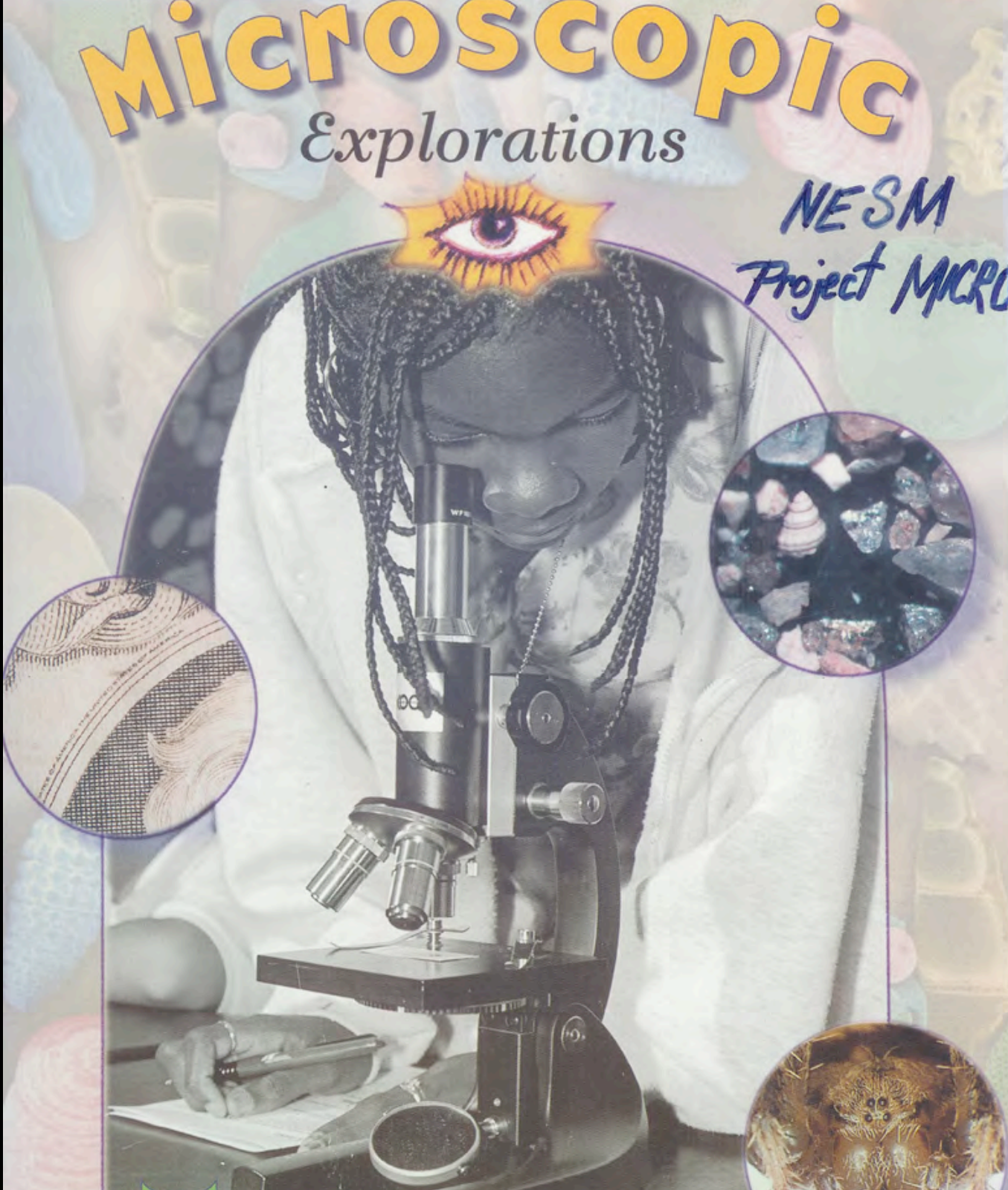
*Mary McCann*



# Microscopic

Explorations

NESM  
Project MICRO





# Project MICRO - Project MICRO Update

- *Based on the book  
Microscopic  
Explorations*
- *Geared toward Grades  
4 to 8*





# *Microscopic Explorations* describes Ten Activities

*Up Close  
Fingerprint Ridges  
Dots and Dollars  
Fabrics  
Salts  
Sand  
Kitchen Powders  
Small Creatures  
Brine Shrimp  
Pond Life*

- *Materials needed for activity*
- *Questions to explore*
- *Notebooks for students*
- *Background Info for teachers*



# NESM started in 1999

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- *Caroline Schooley, MSA Project MICRO coordinator spoke at meeting*
- *A memorial project for Paul Burnett, colleague and NESM Director*
- *With Contributions from NESM, Corporate Sponsors and Individual Members*
- *NESM Assembled three Project MICRO kits for \$1500 each*



# The Microscopes in the Project MICRO Kits

- *5 Compound Microscopes  
4x 10x 40x*
- *5 Dissecting Microscopes*
- *10 Hand-held Microscopes*
- *Simple Magnifiers*





# The Microscopes in the Project

## MICRO Kits

- *5 Compound Microscopes*  
*4x 10x 40x*
- *5 Dissecting Microscopes*





# Plus, All (most) of the materials to be examined

- *Curved Surfaces*
- *Fabrics*
- *Print Samples*
- *Salts Sands & Powders*
- *Bugs, Brine Shrimp & Pond Creatures*



# Teachers supply the following

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- *Tables or Lab benches for Learning Activities*
- *Access to power for 8 Learning Stations*
- *10 - 40 interested Students in Groups of 2-4*
- *Copy of Student Booklet for each student*
- *2-2 1/2 hour of class time for the Micro Festival*



# How can it be used?

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- *Singly*
- *Selected activities*
- *All the activities in a Festival Format*



# Where can it be used?

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- *Classroom Activity*
- *Extended Day Programs*
- *PTA Family Nights*
- *Community Fairs*
- *Day Camps*
- *Science Clubs*



# How can you get one?

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- *In Boston/Massachusetts Area*
- *Mary McCann*
- *mccanns@tiac.net* 617-484-7865
- *In Maine- Jackson Laboratory Bar Harbor*
- *Lesley Bechtold*
- *lesley.bechtold@jax.org*



# NESM's Project MICRO

## Success Story

- *Jan Schwarz, University of Vermont  
Microscopy Imaging Center*
- *She's reached 5000 kids in 10 years*
- *Bringing Project MICRO to kids,*
- *Once a month all over Vermont*



## Appropriate for Grades

**5-8**

*Pertains to the following VT Standards:*

### Communication:

- 1.8 Organize and convey information.
- 1.17 Interpret and communicate using mathematical, scientific, and technological representation.

### Reasoning and Problem Solving:

- 2.2 Use reasoning strategies; finds meaning in patterns and connections; applies appropriate methods, tools and strategies.
- 2.6 Apply prior knowledge, curiosity, imagination and creativity to solve problems.
- 2.12 Modify or change original ideas and/or ideas of others to generate innovative solutions.

### Personal Development:

- 3.3 Demonstrate respect for themselves and others.
- 3.10 Perform effectively on teams to conduct investigations.

### Inquiry, Experimentation, and Theory:

- 7.1 Use scientific methods to describe, investigate, and explain phenomena.
- 7.2 Explain theories based upon observation.
- 7.5 Analyze roles of scientists.
- 7.11 Analyze and understand living and non-living systems.
- 7.12 Observe characteristic properties of matter and use them to distinguish one substance from another.
- 7.13 Identify and use anatomical structures.
- 7.14 Apply knowledge and understanding of technological systems.



The  
**UNIVERSITY**  
of VERMONT

### **Director:**

Douglas J. Taatjes, Ph.D.

### **Staff:**

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Michele VonTurkovich  
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<http://www.med.uvm.edu/microscopyimaging/>

**New England  
Society for  
Microscopy**

**Project  
MICRO**

<http://microscopy.org/ProjectMicro/>





**We will bring to your school the following:**

- 5 Dissecting Microscopes
- 5 Compound Microscopes
- 10 Pocket Microscopes (30x)
- Hand Lenses
- All Materials and Printed Instructions for 10 Learning Stations
- Master Copy of Student Booklet for Teacher to photocopy
- 1-2 Microscopy Professionals to lead & supervise the "Micro Festival"

**You will need to supply the following:**

- Tables or lab benches for 10 Learning Stations
- Access to power for 8 Learning Stations (flashlights are OK for 3)
- 10 – 40 Interested Students in Groups of 2-4
- Copy of Student Booklet Or Journal for each student
- 2 - 2 ½ hours of class time for the "Micro Festival"



**10 Learning Stations:**

- 1) **Up Close** – Construct water drop magnifiers and investigate properties of magnifying lenses.
- 2) **Fingerprint Ridges** – "Lift" impressions of fingerprints; find details of ridge patterns.
- 3) **Dots and Dollars** – Examine a range of imaging and printing techniques; determine how images are formed.
- 4) **Fabrics** – Observe a variety of fabrics; determine how each is made.
- 5) **Salts** – Observe and compare crystals of various salts; identify a salt involved in a make-believe highway spill.
- 6) **Sand** – Compare sand samples from several geographic locations.

**Learning Stations- Continued:**

- 7) **Flower Power** – Study flowers and leaves; compare and contrast shapes, textures, colors
- 8) **Small Creatures** – Study structures of dried insects, spiders, isopods and more.
- 9) **Brine Shrimp** – Observe live brine shrimp; compare appearance, specific structures and movement patterns of adults, larvae and eggs.
- 10) **Pond Life** – Compare animal and plant life found in a pond.





# Next ....

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- *Are you interested?*
- *Any Input on Brochure?*
- *Is Your Lab a Site for Brochures?*
- *Other Ideas for Publicity?*
- *Come do an activity in the lobby!*
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