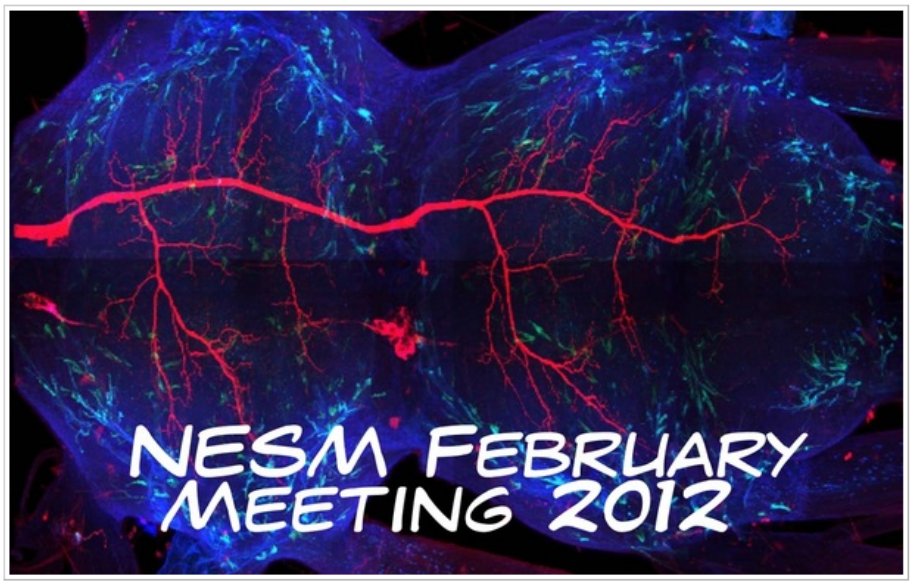

February Meeting @ Saint-Gobain, Research & Development Center, Northboro, MA

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Meeting Description:

Join NESM for our February Meeting on Feb. 15, 2012 at Saint-Gobain Research and Development Center, Northboro, MA. The meeting is composed of a facility tour, a buffet dinner, a NESM business meeting, and two technical talks.

Meeting Costs (including a buffet dinner):
$20 General Members
$45 General Non-members (includes 2012-year membership)
$0 Student Members
$10 Student Non-members (includes 2012-year membership)
$10 Retiree Members
$20 Retiree Non-members (includes 2012-year membership)
Walk-In Registration: Additional $5

Bring a Colleague:
NESM members who bring two new members to join during 2012, will receive free membership for 2013!!!

Students are FREE:
Student members are encouraged to attend for FREE (including a buffet dinner)!

Meeting Schedule:

February 15, 2012

5:30-6:00 Registration and Facility Tours

6:00-6:45 Dinner

6:50-7:10 Welcome

7:10-7:20 NESM Business Meeting

7:20-8:00 **"Crystals as Stacked Layers and the Infinite World of Intergrowth"**, Charles Bateman, Ph.D., Saint-Gobain, Northboro, MA

8:00-8:40 **"Microscopy Tools: Visual Resolution of Insect Eyes"**, Paloma Gonzalez Bellido, Ph.D., Marine Biological Laboratory, Woods Hole, MA

8:40-8:45 Closing Remarks

Abstracts:

"Crystals as Stacked Layers and the Infinite World of Intergrowth", Charles Bateman, Ph.D., Saint-Gobain, Northboro, MA

Materials scientists are taught that face centered cubic and hexagonal close packed crystals are made up by stacking layers in different sequences. However, these two perfect structures are simply the end members of an infinite series of materials that have intergrowth structures. A number of different zeolite systems will be presented and methods to understand and describe their structures discussed.

"Microscopy Tools: Visual Resolution of Insect Eyes", Paloma Gonzalez Bellido, Ph.D., Marine Biological Laboratory, Woods Hole, MA

The compound eyes of insects have a lens for each photoreceptor unit. Thus, for an insect to obtain high visual resolution, the number of lenses must increase, resulting in a large eye. Large eyes are energetically costly and heavy, so a large body is needed to carry them. For these reasons, the prevailing dogma states that only large insects, with large eyes, can excel as visual predators. For example, dragonflies. I have used electron microscopy to image the early visual systems of fruit flies and killer flies. The results concur with the intracellular electrophysiology data, confirming that the visuals system of small insects can also be adapted to afford a predatory lifestyle.

Seeing a potential prey is only the beginning. For a successful attack, a predatory insect must process and relay visual information to the wings in a timely and efficient manner. I have impaled and dye injected the cells that carry information about the direction and position of a small target from the brain to the wings in the dragonfly *L. luctuosa*. I have used confocal microscopy to build a 3D atlas of such cells in the pre-motor centers for the wings. The results will be discussed.

Location:

Saint-Gobain Research & Development Center, Northboro, MA
9 Goddard Road, Northboro, MA 01532
Get Directions

Parking:

Free parking facilities are located on site

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Image credits: Banner - Dr. Paloma Gonzalez Bellido, Marine Biological Laboratory