**SEMS 2017 Workshops**

***Wednesday, May 24 2017***

**ProtoChips TEM Fusion System for *in situ* Heating**

**Where:** Barrow Hall, UGA Campus, Rooms 006 and 130

Protochips will provide an *in situ*heating experiment using Protochips Fusion system, which employs a MEMS-based silicon carbide micro-scale heating membrane. The microscope will be UGA's FEI Tecnai TEM. The sample will be gold nanoparticles on iron oxide. The samples will be heated in steps to 1000C. During this experiment, you will see significant activity of both the gold and iron oxide. Protochips will also provide a short presentation describing the capabilities and applications of *in situ* electron microscopy. Dr. Hessam Ghassemi, Protochips application scientist, will perform the workshop.

**Times:** Two sessions - 8:30am-12:00 and 1:30-5:00pm (3.5 hrs each)

Limited to **6 people per session**

**Contact information** for sign-up:

Bob Monteverde

408-858-6297

robert.monteverde@protochips.com

**FEI Field-Emission Analytical SEM with Scanning Transmission EM**

**Where:** Barrow Hall, UGA Campus, Rooms 155 and 157

FEI will provide a workshop on the use of STEM on the Teneo FE-SEM. An Application Specialist will be on-site to work with participants. A brief talk will accompany hands-on work delineating the practical aspects of sample requirements and instrument details.

**Times:** Two sessions - 8:30am-12:00 and 1:30-5:00pm (3.5 hrs each)

Limited to **8 people per session**

**Contact information** for sign-up:

Bryan Majkrzak

843-603-2202

Bryan.Majkrzak@Fei.com

**Back to Basics: Negative Staining in the Electron Microscopy Laboratory**

**Where:** Barrow Hall, UGA Campus, Rooms 154 and 165

This workshop will be a thorough overview of negative staining, also called negative contrast, for those working in the electron microscopy laboratories. Dr. Sara Miller from Duke University and Mary Ard from the University of Georgia will be instructing some of the more popular techniques and troubleshooting that goes into demonstrating the various specimens submitted for this type of service in a biological electron microscopy laboratory. There will be hands on activities, lecture sessions, and actual scope time viewing and evaluating samples.

**Time:** One session – 8:30am – 12:00

Limited to **12 people** in the morning

**Contact information** for sign up:

Mary Ard

706-542-4080

maryard@uga.edu

**Zeiss LSM 710 Confocal Laser Scanning Microscopy**

**Where:** Coverdell Bldg, UGA Campus, Room 106B

Carl Zeiss Microscopy will provide a workshop on Laser scanning or confocal microscopy on the LSM 710 confocal microscope. A 3-D Imaging Specialist will be on-site to work with participants. A brief talk will accompany demonstration on the LSM 710. The demonstration will scan samples sequentially point by point, line by line or multiple points at once and assemble the pixel information to one image. As a result optical slices of the specimen are imaged with high contrast and high resolution in x, y and z. Confocal microscopy supports sensitivity demanding applications in life sciences as well as for topographic tasks on materials surfaces.

**Times: Four Sessions 8:30am-10am, 10am-11:30am, 1:30-3:00pm and 3:00-4:30pm (1.5 hrs each)**

Limited **to 4 people per session**

**Contact information** for sign up:

Johnafel Crowe

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