

October 30, 2010

RE: Update and Fees - Electron Microscopy and Cryoelectron Microscopy Research Core

Dear Colleagues,

The Electron Microscopy and Cryoelectron Microscopy Research Core, which is located in the Medical School, has as its goal to serve as a major technology resource to Yale and beyond. In 2009-2010, the Core served more than 70 laboratories from across the campus.

Additions to the Core over the past year include:

1. Installation of a new FEI Tecnai TF20 Tomography microscope. This high resolution EM with STEM and EDAX accessories allows qualitative imaging of nanomaterials and the analysis of cellular structures, and organelles in three dimensions (3D) in TEM and STEM tomography modes. Not only can objects be seen in 3D by EM tomography, but reconstruction allows very high axial resolution and can provide virtual optical sections 10-100 times thinner than conventional serial sections. The new microscope is configured for FEI STEM Microprobe Tomography on thick resin sections up to 1 um and equipped with a standard FEI single tilt compustage holder, double tilt holder, and Fischione high-precision tomography holder. The microscope was purchased with help from an NSF Major Instrumentation Grant and is currently being used by a number of laboratories. We are excited about introducing this new technology to other Yale investigators. Please contact Christoph Rahner (see below) if you feel that it might be a useful tool in your research.
2. A new Leica Ultracut Microtome is being installed for ultrathin sectioning.
3. Two UltraScan 4000 4k x 4k pixel, ultra-high sensitivity Gatan cameras have been installed on the Tecnai F20 and T12. These allow structural analysis of objects of nanometer or sub-nanometer resolution.
4. Leginon software and computer monitors have been installed in the rooms housing the F20 HRTEM and T12 HRTEM. These allow for automated operation and remote control of the microscopes for high volume data collection.

## Administration

Historically, the Electron Microscopy and Cryoelectron Microscopy Cores have been treated as separate resources, but because of the increasingly close relationship between the two technologies, they are now being administered together. A combined Faculty Advisory Committee comprised of Pietro De Camilli, Hongwei Wang, Fred Sigworth, and Carolyn Slayman is overseeing both cores, and would be pleased to hear from you if you have any suggestions to strengthen the facility.

Dr. Christoph Rahner and Morven Graham are your day-to-day contacts in the facility. Christoph manages the microscopes and ancillary equipment, and provides training on the microscopes. Morven manages the service group that is responsible for sample preparation; she also assists on the microscopes. Both are available to discuss your proposed projects.

Christoph Rahner—email ([christoph.rahner@yale.edu](mailto:christoph.rahner@yale.edu)), m 203-500-9801, w 5-4322

Morven Graham—email ([morven.graham@yale.edu](mailto:morven.graham@yale.edu)), lab 5-5390, o 5-7943

Christoph and Morven are assisted by Chrissie Horensavitz and Kim Zichichi, who prepare samples for users. To address the growing need for sample processing, we are searching for additional help in that area.

I am providing administrative oversight over the Core, working closely with Christoph, Morven and the FAC to continue to improve the service provided. Please feel free to contact me if you have questions or concerns that cannot be addressed by Christoph and Morven:

Jim Slattery—email ([james.slattery@yale.edu](mailto:james.slattery@yale.edu)), 203-785-5272

Billing and financial continues to be handled by Penny Riggione in the YSM Finance group:

Penny Riggione—email ([penny.riggione@yale.edu](mailto:penny.riggione@yale.edu)), 203-737-1147

## Revised Fee Structure

Following the regular annual review of the Core, we have decided to revise some fees, effective November 1, 2010. It has been more than three years since the fees were last adjusted. A full description of the changes will appear shortly on the following web site:

<http://www.cellbiology.yale.edu/ccmi/ccmi>

Highlights include:

1. Tecnai Biotwin – rate unchanged at \$45/hour
2. CryoEM microscopes (F20 HRTEM and T12 HRTEM) – rate is now \$37/hour and will be scaled for laboratories with substantial usage.

3. Tecnai TF20 Tomography/STEM – The purchase of this instrument was funded by a National Science Foundation grant (1 DBI-0821432). Consistent with the institutional commitment to the granting agency, there will be no instrument use fee through September 2012. After that date, we estimate that the hourly cost for use of this instrument will be \$90/hour; please use this rate for budgeting purposes. Reasonable assistance will be provided at no charge for work appropriate to the tomography instrument. However, if a substantial amount of assistance is required by a user or group, there will be a \$60/hour charge for assistance. A full course of training is available for new users at \$600. Training on this and the F20 HRTEM microscope is available only after proficiency has been demonstrated on the T12 Biotwin or T12 HRTEM.
4. Full service options for cryo-substitution have been added.

### Reservations and Billing

The online scheduler available at <http://tools.medicine.yale.edu/resource/> is our primary billing tool. For accurate billing please:

- a. Schedule your time in advance
- b. Assign the correct PTAO - work will not be started without a PTAO
- c. If your needs change, please update the schedule.
  - i. Before the scheduled time, you may do this on the website.
  - ii. If you use either more time or less time than planned, please inform the staff by email, and they will update the scheduler to show actual time.
  - iii. Any changes must be communicated before the last business day of the month.
  - iv. Billing is based on information in the scheduler and is calculated in hour increments.

Contact information, policies, and sample submission forms are available online at the following website: <http://medicine.yale.edu/cellbio/ccmi/ccmi/index.aspx>

Please let us know if there are any questions or concerns related to facility.

Regards,

James Slattery, Ph.D.

Director of Finance & Administration, Department of Cell Biology, and Special Assistant to the Dean's Office for Research Cores