

## MEMORANDUM

To: **Katalin Voros**, Machine Shop Manager  
From: **Ben Lake**, Engineering Technical Supervisor 2  
Subject: 2010/11 Year-End Report  
Date: September 7, 2011

My responsibilities as Engineering Technical Supervisor 2 of the Cory Hall Machine Shop last year were to manage day-to-day operations and provide support to Material Science Engineering's (MSE) machine shop. The Shop supported fifty-four Principal Investigators from various departments including EECS/ERSO, CITRIS, BNC/QB3, ME, COE, NuclearE, ESPM, I.Biology, UCSF, BNLA, MSE, Physics, and MCB.

### I. MANAGEMENT & ORGANIZATION

The Cory Hall Machine Shop is a 100% recharge operation under ERSO management. In 2010/11 the unit consisted of one Engineering Technical Supervisor 2, B. Lake Jr., one Principal Laboratory Mechanician, J. Gavazza, three FTE Development Technician V's, L. Ahtty, R. Amaral, A. Peterson, one FTE Development Technician V, C. Bowen, one Development Technician IV, E. Hester, and a half-time Administrative Assistant III, N. Peshette. During this period there were a number of changes in personnel. E. Hester accepted a position at the Marvell Nanolab and was replaced by Lou Ahtty. After review of the workload, actual and projected, it was decided that a full-time temporary position was needed at a Dev. Tech V level, and this was filled by C. Bowen.

All projects are submitted to the Shop in the form of work orders. Our accounting system consists of two major parts, the Machine Shop Job Management System (MSJMS) and "Time Logs". This system allows for accountability for all expenses and income. We have housekeeping assignments and responsibilities that range from servicing machines, monitoring shared equipment for condition and proper guard settings for grinders, band saws and sanders, to cleaning specific areas such as shared work surfaces, machine tools and the sink. These responsibilities are rotated monthly. The MSE unit consists of two Principal Laboratory Mechanicians, K. Yee and S. Montalvo. They report to C. Kumai, R&D Engineering Supervisor 2 in MSE.

I meet weekly with the Machine Shop Manager, K. Voros, to discuss workload, job priority, and general shop business and activities. I also meet weekly with the Marvell Nanolab Executive Director, A.W. Flounders, to review Nanolab project priorities. I chair monthly Shop meetings, which are attended by my manager, K. Voros, and shop personnel including MSE staff. We have an agenda and discuss financial status, open items from previous meetings, projects specific to the safety and development of the Shop, general housekeeping issues and other items as needed.

## II. PRODUCTION & SERVICES

The Cory Hall Machine Shop completed, or had in process, 371 jobs during FY 2010/11. There were 203 jobs submitted, in the form of job requests, from the Microlab/Nanolab. In addition we provided 244 hours of Pro Forma work for EECS, which included support for instructional laboratories and classrooms, removing and remounting shelving, engraving plaques and nameplates, and installing audio/visual equipment.

Our website, <http://mshop-erso.berkeley.edu>, features our capabilities, lists contact information, and has job request forms and general information such as photographs of completed jobs. It has streamlined our operation by answering some frequently asked questions and gives our customers an easy way contact us. It is searchable through Google as Cory Hall Machine Shop or ERSO Machine Shop.

A high demand for service and accountability was expected from the Machine Shop during this time period. Major semiconductor processing tools such as Centura, MOCVD, Tystar furnaces and GCA Wafer Steppers required relocation from Cory Hall to Sutardja Dai Hall. The critical tasks of developing ways to safely move these delicate and sensitive pieces of equipment were performed successfully by our staff.

## III. SAFETY

Safety is always a concern and I work with the campus Office of EH&S to stay current with information regarding our responsibilities as a machine shop to provide a safe working environment. Our Machine Shop was reviewed twice this year by EH&S. The Shop was cited for two "minor" infractions: dirty rag disposal and metal chips disposal, both of which were corrected.

I pride myself in keeping a safe, well-organized, clean and alert machine shop. I am a participant in the Cory Hall Safety committee, which helps me stay tuned to the changing environment we work in and allows me to pass on important information and guidance.

## IV. DEVELOPMENT

Development of Staff, equipment and facilities are key components to support of world class R&D departments here at U.C. Berkeley. Our staff attended a four-day instructional class for Solidworks design software. We have invested in the rebuild of one Bridgeport manual milling machine to original factory specification and added 3-axis Digital Readouts (DRO) to all of our manual milling machines. DRO's have been ordered for two of our manual lathes. Updated material recycling and waste disposal containers have been acquired.

## **V. FINANCIAL STATUS**

The recharge rate is calculated to include all known and projected costs. R. Spivey, Administrative Manager, supervises this activity. During fiscal year 2010/2011 the Cory Hall Machine Shop collected recharge revenues of \$561.7K, which covered all salaries, supplies and expenses, and most of the deficit carry-over from the last year. The Machine Shop started fiscal year 2011/2012 with a carry-over deficit of \$959.

Finances for the two components of the joint shop, ERSO and MSE, remain separate except for some shared supplies which are split 65% ERSO and 35% MSE.

## **COMMENTS**

The Machine Shop was very involved with the move of the Microlab and fit-up of the new Marvell Nanofabrication Laboratory. Our responsibilities included transplanting delicate, precise, instruments and semiconductor processing equipment from the Micro Lab in Cory Hall to the new facility in Sutardja Dai Hall. We also re-engineered current equipment to operate in the new lab, with new standards, as well as received and installed new equipment such as AMAT EPI, MOCVD2, sts2, lam7 and lam8.

I strive to maintain and develop the quality and capability of the Machine Tools, equipment and education of the shop personnel. My goal continues to be achieving the safest, efficient, organized, and well equipped machine shop on the campus of U.C. Berkeley.