PPPL
PRINCETON PLASMA PHYSICS LABORATORY
HOTLINE

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Certification and Training

Happy First Anniversary

Now, more than ever before, training and certification are crucial to the effective workings of the Laboratory. Preparation for the introduction of tritium requires much new training. That, combined with the post-Tiger Team mandate to increase safety training, has added to the already substantial task of maintaining a well-trained work force.

With the pressure to train, it's hard to imagine that the Office of Certification and Training, headed by Sue Murphy, came into existence only one year ago. The purpose of the Office is to centralize and focus training so that it can most effectively meet the needs of the Laboratory.

In one year, the staff has grown from Murphy alone to a total of five staff members. Secretary Sonja Patterson handles the records data base, provides office support, and assists recently promoted Training Coordinator Sue Hill in setting up training sessions. Anthony Contino and Brian Trombley are Training Specialists.

Hill has the mammoth job of coordinating Environment, Safety, and Health technical training and Employee Development courses that are offered through the Office. In addition, she coordinates off-site training— necessary because of the limited space available to hold courses here. Hill also notifies staff members and supervisors three months in advance that it's time for them to retake basic courses. (For example, the Basic Safety Course must be retaken every two years.)

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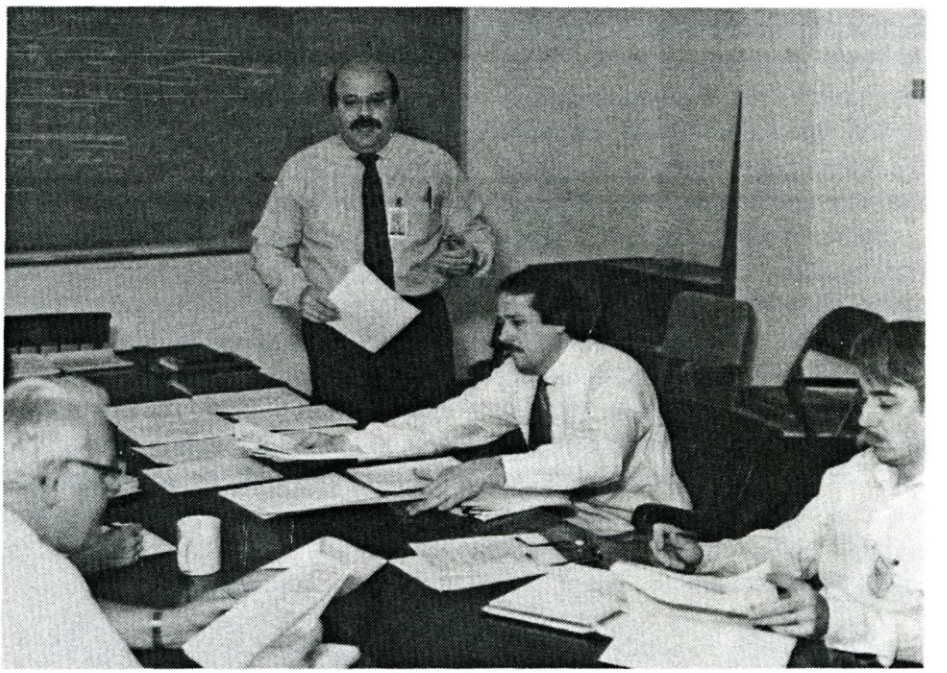

Anthony Contino of Certification and Training (standing) and Steve Gordon, TFTR Training Coordinator (seated, center), discuss the requirements of the Tritium Certification Program during a meeting with Tritium Operations Branch Head Bob Sissingh (far left) and Tritium Supervisor Rich Rossmassler (far right) as well as other tritium supervisors. Photo: D. Applewhite

Training, Qualification, and Certification

Three terms that are often confused in the training field are *training, qualification, and certification.*

Training is the process of instruction that increases an employee's ability to do a certain job or manage a certain situation.

Qualification is a formal process to verify that an employee has the prerequisite background or experience necessary for a certain task. *Qualification* is often issued for a fixed period—often two years.

Certification is the highest classification and provides *independent verification* that an employee is qualified in a certain area. For example, a manager may be required to administer the relevant staff member to be certified a written, oral or hands-on test demonstrating competence. Then the manager must provide written confirmation that an employee is *certified* to do a certain job.

Training

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Brian Trombley develops and documents approximately 20 courses within the regular curriculum—including ladder safety, electrical safety, materiel handling, and fire extinguisher training. His goal is to build a top-quality training program.

Contino serves as certification specialist as well as participating in the development of training materials. He is also instrumental in developing policy for certification and training and writes documents that quantify and explain training, qualification, and certification requirements.

Steve Gordon, the TFTR Training Coordinator, is presently working closely with Sue Murphy to plan, develop and schedule courses for TFTR. Gordon also works closely with Contino to develop and review TFTR procedures and training materials. One major job facing Gordon as well as the Certification and Training staff is training 22 tritium operators, supervisors, and managers.

Credit Courses in Progress

First Grad Course Offered

Three courses for college credit that are free to PPPL employees are in progress on site this spring—including the first graduate course ever offered here. Called "Digital Processing of Signals," the graduate course is sponsored (paid for) by the Electrical Engineering Division.

Both that course and a senior-level undergraduate course in Thermodynamics, sponsored by Mechanical Engineering, are being taught by professors from New Jersey Institute of Technology (NJIT).

The third course, English Composition I, is being taught through Mercer County Community College (MCCC). PPPL's Bill Johnson, Manager, Training and Development, coordinates arrangements for the courses between the relevant educational institution and the Lab group requesting the course.

According to Electrical Engineering Division Head Charlie Staloff, who came up with the idea for the graduate course, "Knowledge of digital signal processing will enable engineering staff to take advantage of recent advances in the field. This will translate into improved design here at PPPL."

"We're delighted that so many staff members are taking advantage of this opportunity..."

Electrical Engineer Tom Senko is both the sponsor of the course and a student in the class. He says, "The course is very successful because it really speaks to the interests of those enrolled. This success reflects the fact that we met with staff here in advance to discuss their needs, and then we negotiated with NJIT and the professor to design the course accordingly."

Senko describes the class as "very challenging, with much reading and with papers and tests—a true graduate course that challenges one's limits." The class meets his immediate needs here at the Lab because, as he explains, "I am now designing a Plasma Position Calculator for Physicist Mike Bell, and I will use a digital signal processor for the design."

Senko is enthusiastic about seeing additional courses taught here. He says, "We need more such courses at PPPL. They are a real investment in Lab personnel, with the double benefit of a better trained staff and higher staff morale."

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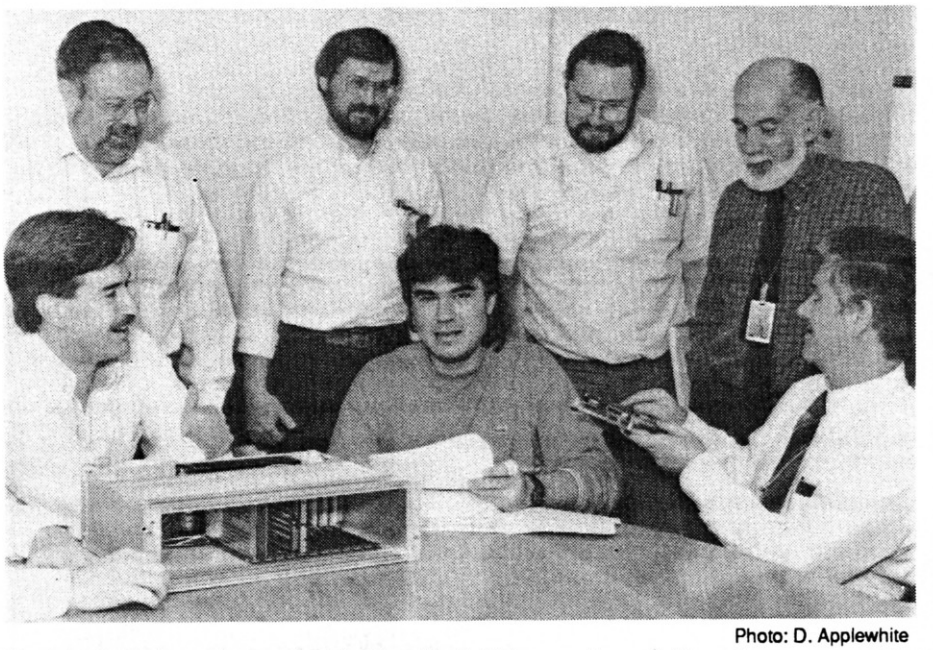

Photo: D. Applewhite

Electrical engineers enrolled in the Digital Processing of Signals course gather around Louis Prastitis, NJIT instructor (seated, center). Left to right they are: Tom Senko, seated near the Plasma Position Calculator Prototype, Robert Marsala, Tom Kozub, Lew Meixler, Charlie Staloff, Division Head, and Alex Ilic, holding an ADSP-2101 Digital Signal Processor. Not pictured are Physicist Hulbert Hsuan and Electrical Engineers Hal Anderson, Ed Lawson, Mark Oldaker, and Joseph Van.

Courses

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Thermodynamics

According to Dan Kungl, Mechanical Engineering Head, "The subject of thermodynamics *(heat transfer)* is crucial for us, because on machines such as TFTR and PBX-M there can be instantaneous and high heat transfer. We decided to try holding a thermodynamics course here and sent out a flyer. We were pleased that 13 people signed up, since the course requires considerable effort."

He adds, "We've gotten good feedback from students. The teacher is excellent, and the course offers our people new perspectives, which is in itself invigorating. I'm delighted that the Lab is investing in additional training for staff, and I look forward to additional courses."

MCCC Courses

The English Composition class is also successful. Says Bill Johnson, "This course is a part of our continuing effort to provide a series of courses that can lead to one of several associate degrees. We choose courses by meeting in advance with potential students to determine their needs. Previously we've held college level courses here in psychology, business management, and business law."

Johnson adds, "We're delighted that so many staff members are taking advantage of this opportunity. Some have received credit for life experience through a special program offered by Mercer County Community College and are well on their way to an associate's degree."

If you would like further information about enrolling in future courses or setting up courses through your division, please call Bill Johnson at extension 2052.

PPPL is Engineering Students' "Customer"

Combine the need for refinement to the TFTR measuring arm, financial support from the Lab's Technology Transfer Office, and engineering undergraduate ingenuity, and you have the makings of excellent science education that also benefits PPPL.

It all started when PPPL Project Engineer Jim Faunce got a request to be a "customer" for senior engineering students at his *alma mater*, the University of Delaware.

Explains Faunce, "I thought that providing a project would be an excellent way to support my *alma mater* and to encourage young engineering students. The measuring arm project was a good choice because it was a specific, concrete project that could be completed in a limited time period."

Continues Faunce, "The measuring arm is used to determine the position of the bumper limiter and RF limiter. Our goal was to improve the measuring accuracy of the internal hardware position."

The University of Delaware students were given a list of possible projects from which they chose. Explains mechanical engineering student Steve Monteleone, "Our team of three had an opportunity to speak with potential "customers" before we made our choice. We picked the PPPL project because it sounded interesting and challenging and because we wanted to learn more about fusion."

The students then visited the Lab where they met with Faunce and with Kingston Owens and Doug Loesser, designers of the measuring arm, and Ed Hill who works with the arm.

The result was a new forearm for the measuring arm made of lighter material than the original. Although another version, built for PPPL by Hercules, will actually be installed on the measuring arm, the forearm built by the University of Delaware students meets the specifications requested. Says Faunce, "The students did an excellent job, and we are satisfied customers."

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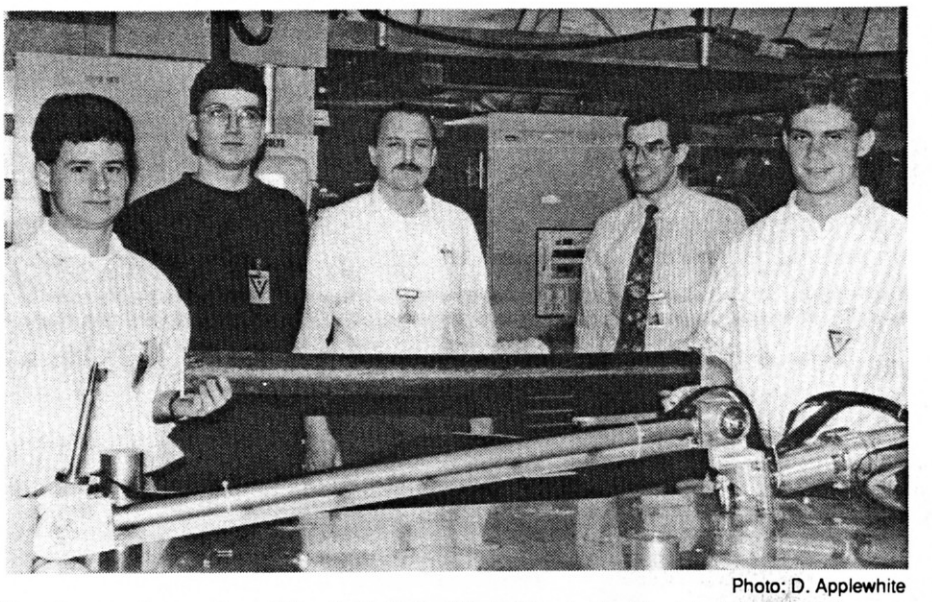

Photo: D. Applewhite

Jim Faunce (center) and Rush Holt (to his left) admire the TFTR measuring arm forearm designed by University of Delaware mechanical engineering students Steve Monteleone (far left), Jeff Boghosian, and Evan Niemkiewicz (far right).

What's Happening at PPPL?

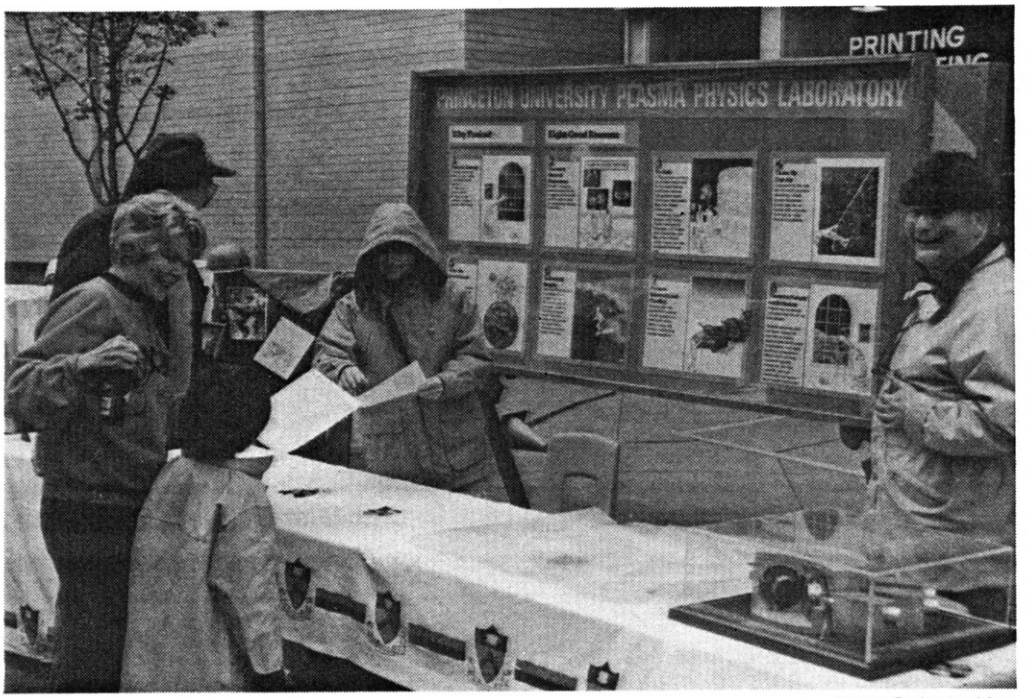

Photo: D. Applewhite

Carol Phillips (left), and George Martin (far right), talk about fusion and PPPL with those attending Communiversity Day on April 25. Dale Meade, Sally Connell, and Bob Budny also participated at the PPPL booth. Held in Princeton, Communiversity Day is a festival of the arts that brings together University and Community members.

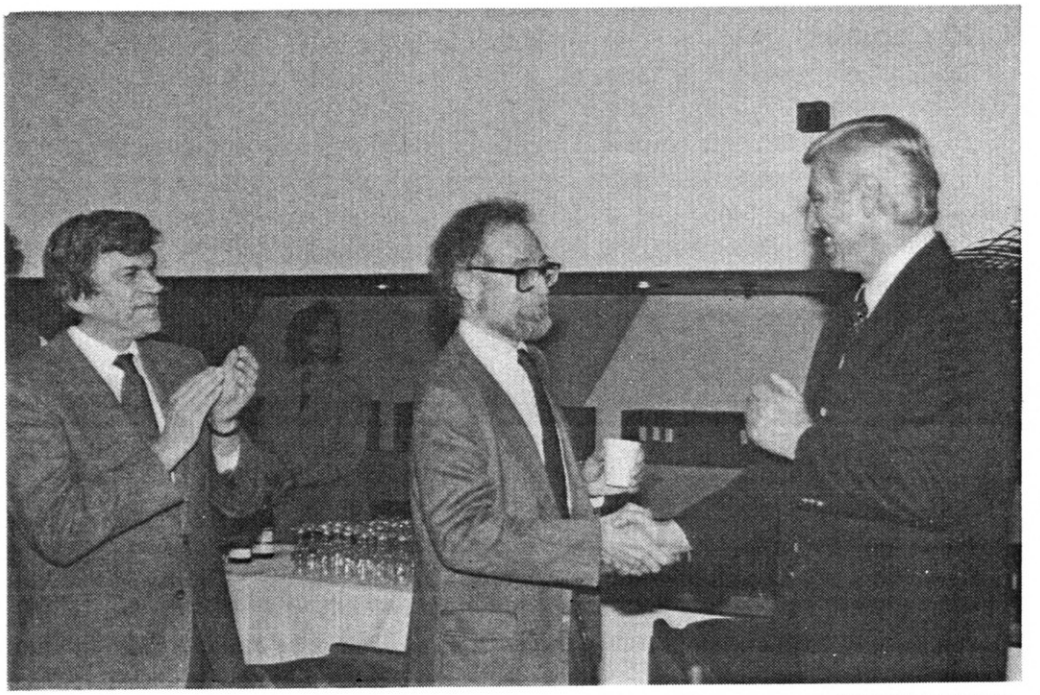

Photo: D. Applewhite

During an April 16 reception in his honor, Dr. Harold Furth (center), former PPPL Director, is congratulated by Deputy Director Dale Meade (right), as Director Ron Davidson applauds. Furth was recently awarded the Franklin Institute's Delmer S. Farney Medal for his "...distinguished contributions to the field of plasma physics, for scientific leadership in international research on controlled nuclear fusion, and for leadership of others as Director of [the] Princeton Plasma Physics Laboratory." Calling Furth the "Father of TFTR," Meade noted that original TFTR experimental predictions are in "remarkably good agreement" with present results—an indication of the meticulous work of Furth and his colleagues. The medal and a certificate were presented during the Franklin Institute's Medal Day dinner April 29.

TRANSITIONS

Births

Congratulations to **Caren Halper** and husband Barnie on the birth of baby daughter Genevieve Estelle on April 1. Caren works in the Physics of Fluids B Office.

All the best to Physicist **Stanley Kaye** of PBX-M and his wife Donna on the arrival of their son Ethan Lewis on April 14.

Best wishes to **Jim Faunce** and his wife Candy on the April 23 birth of daughter Adrienne. Jim is in Deuterium-Tritium Engineering Diagnostics.

Engineering Students

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Says mechanical engineering student Jeff Boghosian, "Through the project we learned a lot about manufacturing—especially the use of a composite material."

Adds Monteleone, "This was an excellent project. It gave us a much more hands-on feel for what it's like to work with a real customer, and what it takes to move from analysis of a need to project design, to manufacture and installation of the resulting machine."

Dylla is AVS President-Elect

H. Frederick Dylla, a physicist at PPPL from 1975 to 1990, is the 1992 President-elect of the American Vacuum Society (AVS). Dylla is now Head of the Superconducting Radio-Frequency Technology Department at the Continuous Electron Beam Accelerator Facility in Newport News, Virginia. His current research involves development of superconducting accelerator technology and free-electron laser systems based on this technology.

HOTLINE

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