

## Department of Fire Protection Engineering 2004 Newsletter

We are on the move! The Department went through the University budget restrictions of the past few years with relentless determination to improve and grow in spite of the financial difficulties. This has been a shared vision of the faculty, staff, and students. With the unwavering support of alumni and friends we are seeing outstanding results.

- We have hired a new faculty member who joined us in the fall 2004. Dr. Peter Sunderland is a nationally and internationally recognized researcher in microgravity combustion with specific expertise in soot formation. He will complement and enrich the fire dynamic team working with Jim Quintiere and Andre' Marshall. His work on soot at NASA Glenn is particularly relevant to detection and he will quickly develop expertise directly benefiting the fire community.
- Jim Quintiere has been elected fellow of the American Society of Mechanical Engineers. This recognition was long overdue since his significant contributions to the K-11 Fire and Combustion Technical Committee of the Heat Transfer Division.
- We have launched into a relocation project for the Department with all its facilities to the penthouse of the JM Patterson building. This new location provides extraordinary visibility for the Department and enjoys the proximity of the nearly completed Kim building. I will give more details in the following.
- The Department will celebrate its 50th anniversary on October 14, 2006 with a gala dinner in the Riggs Alumni Center. Art Cote will be the MC for the event. The same day, we will host a luncheon for the dedication of the new venue of the Department in the JM Patterson building. Morriel Kaplan (Schirmer – Beltsville, MD) has volunteered to coordinate the festivities. Robert Gagnon is in charge of the 50th Anniversary History Book.

These are some of the major highlights. Let me review the progress and the future challenges along the various aspects of our strategic plan:

### Education and Outreach

- We have successfully obtained a full six years ABET accreditation last October. We gratefully acknowledge our Undergraduate Curriculum Advisory Committee. In particular, the contributions of David Ilove and of all the committee members continue to be a phenomenal asset in this process.
- Thanks to Jim Milke's efforts the undergraduate enrollment is growing steadily, 116 enrolled students at this writing. The enrollment in the MS program is steady at two dozens students and we now have more than a dozen PhD students.
- Dr. Nathasak Boonmee received his PhD under the direction of Jim Quintiere and has joined the faculty of the Kasetsart University in Bangkok, Thailand. His dissertation describes his seminal contribution to modeling of wood autoignition. Dr. Yi Wang received his PhD under the direction of Arnaud Trouve. He has joined Risk Management Solutions in California. His work on direct numerical simulation of flame wall interactions opens the way for a better understanding and modeling of flame spread and structural fire protection.
- We are revising the graduate introductory course for students joining the program without a fire protection engineering background. We are thinking of using the material prepared by Fred Mowrer for his introductory graduate course in fire protection engineering. This course is available on tapes and could nicely complement the reading assignments with appropriate homework assignments.
- The Distance Program leading to the Professional Master degree is progressing through the development phase. We are at steady state with two offerings per quarter. The program includes now the

full complement of ten courses. We are planning an intensive marketing campaign increasing enrollment to more than 150 class seats per year.

## **Research**

- The total research awards this past year jumped up to an unprecedented high. This is due to a major award for the Center for Firefighter Safety Research and Development. The center that operates in conjunction with the Maryland Fire and Rescue Institute is devoted to enhancing the safety and performance of first responders by addressing their needs through technology innovation including advances in communication, physiology, information management, real time fire simulation, and virtual training.
- The research expenditures are growing from \$483,567 in FY01 to \$633,671 in FY02 to \$664,809 in FY03 to \$947,842 in FY04 to \$1,049,308 in FY05 and so far in FY06 to \$2,132,201. We now generate more than three times the state budget in research expenditures. This is well in par with the A. James Clark School average.

## **Support and Infrastructures**

The Department relocation project is in its planning phase. To date, a number of companies have already pledged significant resources to enable the renovation of the space. Fred Mowrer will have an update on these activities in the following

The new venue will be on the third floor of the J.M. Patterson building. The building is in close proximity to the Kim building. All the departmental activities will be housed on the same floor. In addition to the FPE facilities, one lecture hall and one hi-tech classroom will be available on the same floor. The faculty and staff will occupy a suite of 12 offices with ample storage space and a large conference room.

The graduate students will be housed in a 40 cubicle space adjacent to the faculty offices. The undergraduate students will benefit from a new Alumni Lounge. This facility will be developed with through the contribution of the alumni. Jennie Nelson has taken the lead in organizing this fundraising campaign. The goal is to create a tangible link between the students and the alumni and to foster the participation and the communications among the graduates of all generations.

A major laboratory complex will be adjacent to these facilities and will encompass a variety to dedicated labs. We would like to create a first class fire science lab with large capacity calorimetric hoods and significant instrumentation support. This facility will amplify the research presently conducted in the Potomac Lab. A wet lab will be dedicated to suppression studies with sprinklers, mist, foams and gels. This facility will further enhance the capabilities of the present HTFS lab. A fire diagnostic lab will house the salt water experiment and similar research projects that are now located in the FETS lab. The Pyro lab will be transformed into a teaching facility dedicated to the most up-to-date standard tests used in the industry. We are also planning the development of a number of dedicated lab facilities for dedicated research projects.

The total cost of the renovation inclusive of the initial set up and maintenance costs is estimated at one million dollars. We have secured two thirds of this amount at this writing. This is already extraordinary since we are just starting our development work to acquire the resources need for this endeavor. We are looking into the possibility of including in the renovation teaching elements for the students. Perhaps we may make use of fire rated glazing products for demo applications and incorporate several structural fire resistance products for some of the steel elements to measure and demonstrate their performance. These and other ideas could be developed with the industries that produce these materials and might have an interest in participating to the renovation project.

## **External Relations**

- The FIRE Center is growing to six full members with Schirmer Engineering and the RJA Group joining Combustion Science and Engineering, Inc., Gypsum Association, and Hughes Associates, Inc. and NFPA. Among the Associate Members we list the support of Edwards System Technology, Honeywell Fire Solutions Group, Koffel Associates, Inc., and Reliable Sprinklers Company. We are deeply indebted for these generous contributions that support our graduate and undergraduate students. Some of these funds are instrumental to student recruitment and departmental publications.

- We had several opportunities to get together with our alumni in the past year. Most notable our recent gathering in Las Vegas where more than 100 people were in attendance at the dinner. All other gatherings were also well attended and our gratitude goes to the local organizers for their dedication.

I am completing my first term as chair and I am amazed at how far we have come in these past five years. The extraordinary efforts of faculty, staff, students, alumni and friends have transformed the Department in a major player within the A. James Clark School of Engineering and within the fire science research community. We have kept our strong commitment to the profession and to the growth of our undergraduate program. Four years ago, we titled our strategic plan: "Excellence from the synthesis of heritage and innovation". I am proud to report that we have fulfilled this goal beyond our wildest imagination.