



## DIRECTOR'S CORNER



In August 2001, I will be completing four years as Director of the Mary Kay O'Connor Process Safety Center. It has been a hectic and enjoyable time and I can say sincerely that I have enjoyed the growth of the Center from its humble beginnings to its current status. Not only do we have an active and productive research group but we also have filled several important staff positions, all of which are contributing directly to the success and growth of the Center. As I reminisce about the succession of the chronology of events and activities, I can not but stop and count all the occasions when the Center has been blessed with good hires or direct help and assistance from organizations and individuals from outside the Center. I remember the first Symposium in 1998 when we struggled to put a good program together. This year the fourth Annual Symposium is being held in October with participants and speakers coming from all over the world. While I believe that many more improvements are needed both in the Symposium programming and other elements of the annual event, quite clearly our Annual Symposium is now internationally recognized as an important event contributing to advancements in process safety. What has been even more gratifying is the energy and invigorating research ideas that have been generated from the Annual Symposium. We have been very fortunate that we were able to dedicate the resources and graduate students to address the research ideas generated at the Annual Symposium.

In 1998, our fledgling research program consisted of a couple of small theoretical projects. In these four years, we have made massive strides in both increasing the volume of research as well as expanding into experimental research. A number of students have finished their MS degrees in chemical engineering, which included a thesis on a process safety-related problem. Currently, ten PhD students in various stages in their program and one MS student are conducting research in a broad range of topics related to process safety. A

number of publications have resulted from ongoing research work.

The experimental research at the Center consists of three separate efforts. First, with the acquisition of the Automatic Pressure Tracking Adiabatic Calorimeter, our Reactive Chemicals Research took a new and vibrant life. The Reactive Chemicals Research now involves experimental data acquisition for substances of interest (e.g., hydroxylamine and its derivatives, polymers) as well as theoretical studies of predictive techniques (e.g., computational chemistry, transition state theory approaches) and development of a structured approach for reactive chemical hazard management. Second, the establishment of the Aerosol Laboratory in collaboration with the Mechanical Engineering Department has led to a successful program on understanding and modeling of aerosols generated from heat transfer fluids. The next phase of the aerosol research now being planned is the study of the flammability and explosion characteristics of aerosol fires and explosions. The third experimental research has recently been started in the field of electrostatics research.

In addition to the experimental research, a number of diverse research projects are underway in the fields of Quantitative Risk Assessment, Abnormal Situation Management, Dynamic Fault Diagnosis, Inherently Safer Design, and Metrics and Measurement Systems for Process Safety. One of the more exciting projects is the National Chemical Safety Program (NCSP), which involves participation from a diverse group of stakeholders. While the NCSP is a broad and overarching program with the mission of reducing chemical incidents to zero, a number of targeted activities have resulted as a direct consequence of the NCSP. One such activity is the publication of an Annual Chemical Safety Assessment Report, which provides an annual report card on chemical safety in the United States. Efforts are underway currently to finish publication of the 2001 Assessment Report.

In the area of Continuing Education, I must say that from very humble beginnings we have reached a point where we are running a successful program with course offerings at our Houston site as well as onsite courses at a number of companies. The 2001 catalog contains 15 courses many of which are offered two or three times a year. We continue to work on streamlining and improving our continuing education offerings.

We continue to interact with government agencies, professional associations, industry, and other stakeholders in providing our input and guidance on issues related to process safety. Our goal is to provide input based on good science, which will hopefully advance the cause of process safety in a meaningful way.

To summarize, as I look back on these four years, I feel a combination of emotions. Naturally, there is sense of pride and accomplishment. There is also a deep sense of gratitude for all those who have helped without which much of what we have done would not have been possible. Those who have helped include researchers, staff, and individuals within the Center as well as many individuals and organizations from outside the Center. The countless many that have helped in big and small ways, I extend my heartfelt gratitude and appreciation to them. I sincerely believe that together we are making things better and contributing to making our theme, "Making Safety Second Nature," a reality.

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