

# CONDUCTING A MULTI-UNIVERSITY GRADUATE STUDENT SYMPOSIUM

## *Goals, Guidelines, and Experiences*

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Effective communication is an integral part of high-quality research. While in graduate school, students need opportunities to practice their presentation skills, to meet and interact with industrial and academic researchers, and to receive feedback from a variety of sources in order to enhance their professional development. While professional meetings may foster this type of growth, these opportunities are often limited to senior students, and the size of the meetings may not allow extensive interaction between students and industry.

In September of 1997, West Virginia University (WVU) hosted a regional symposium based on the goals and guidelines developed by the University of Kentucky (UK) in symposiums held at UK the previous four years. The regional symposiums gave graduate students an opportunity to present their research and to interact with industry.

The original idea and format of hosting a symposium came from Carnegie Mellon University (CMU). CMU's internal symposium gave graduate students a formal opportunity

to share their research with their peers. Many schools hold graduate student symposiums with similar formats. Similarly, the UK event began as an internal one; but over the years it grew to become a regional event and to incorporate several novel concepts. Currently, the symposium draws upon various schools and industries within the region. This allows graduate students from the host school to gain experience in organizing a regional event and allows industrial representatives to sample graduate research throughout the region. In addition, moving the symposium location throughout the region allows graduate students to make several new industrial contacts each year.

This article demonstrates how a regional symposium might be hosted. Included are a brief history of the event, goals and guidelines for hosting such a symposium, and an illustration of a successful symposium. We hope that this article will encourage other universities to host a similar symposium in their region.

### HISTORY

The UK Chemical Engineering Graduate Student Association (ChEGSA) held its first symposium in September of 1993. The idea to host the event was initially proposed by then-ChEGSA faculty advisor, Dr. Kimberly Anderson. Having graduated from CMU, she suggested modeling a meeting on the annual ChEGSA Symposium that CMU had been holding since 1979.<sup>[1]</sup> The primary intention of the event was to provide a forum that allowed graduate students to improve their presentation skills and to give them industrial exposure.

From an internal event involving representatives from a few local companies, UK expanded the symposium to include regional universities and industries. Due to this growth and success, UK felt it was time to encourage other schools in the area to jointly host the symposium. As a result, the Fifth Annual Chemical Engineering Graduate Student Symposium was hosted by the WVU Graduate Student Organization (GSO) in September of 1997. It attracted graduate student participants from seven major chemical engineering

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programs and involved eight industrial corporations.

**GOALS AND GUIDELINES**

The goal of the symposium is to provide a learning environment that promotes professional development of graduate students and an interactive exchange of ideas among regional industries and universities. This goal is facilitated by student posters and oral presentations that are judged by a panel of industrial representatives on the quality of the research and the effectiveness of the presentation. Additionally, this interactive structure provides an opportunity for researchers in industry and academia to increase their awareness of the ongoing research activities in their geographical region.

To promote interaction between industry and academia, opportunities for attendees to network are designed into the day's activities. Industrial involvement is encouraged through the use of judges and a keynote speaker from recognized, engineering-related industrial organizations. This networking benefits all attendees by increasing contacts, giving new perspectives, and accommodating different viewpoints. The use of industrial judges not only ensures unbiased evaluation, but also gives the graduate students an occasion to tailor their talks for an industrial audience as opposed to the primarily academic audience usually encountered. Simultaneously, the graduate students get feedback from an industrial perspective on their research and presentation skills.

Industry also plays a role in the symposium through monetary support. Though some money is provided by various sources within the host school, industry provides much of the funding. Student organizers gain experience marketing their ideas to industrial representatives and encounter the challenges of fundraising.

Regional school participation brings depth to the symposium. Not only does this give an advantage of peer-to-peer

networking, but it also allows for a larger industrial draw than if each school held their own internal symposium. To attract student participation, monetary awards for the best three oral presentations and posters are presented. The use of awards creates an opportunity for unbiased industrial judges to give valuable feedback to the students.

An inherent benefit of the symposium lies in the fact that it is entirely managed by graduate students. They gain first-hand experience in communication with industry, communication with academic peers, and event organization. Faculty support is appreciated, but should be limited to advice and attendance. To facilitate efficient organization of the symposium, the host school should have an established organization of graduate students such as UK's ChEGSA or WVU's GSO.

Hosting the symposium involves a considerable input of time, effort, and money. To retain a sense of continuity and to best meet the symposium goals discussed above, a set of guidelines was jointly outlined by UK and WVU. They require that 1) the event be organized and run by students, 2) the keynote speaker and a majority of the judges come from industrial corporations, 3) the host school extend invitations to several schools in the region, 4) no more than 50% of participation be from the host school, and 5) cash prizes be provided to winners of both the oral and poster presentations. An approximate timetable (Table 1) and budget (Table 2) have been prepared for use in planning activities. As shown, hosting a symposium requires a full year's preparation and a significant budget.

**EXAMPLE OF A REGIONAL SYMPOSIUM**

The Fifth Annual Chemical Engineering Graduate Student Symposium is an example of a regional symposium. It was hosted by WVU and included participation by seven regional schools: Carnegie Mellon University, Lehigh University, Pennsylvania State University, University of Kentucky, University of Maryland College Park, University of Pittsburgh, and West Virginia University. Through contacts and mailings, the host school was able to attract approximately 100 people

**TABLE 1**  
**Approximate Timetable for Hosting a Symposium**

<i>DATE</i>	<i>ACTIVITY</i>
November-December	<ul style="list-style-type: none"> <li>Find and contact keynote speaker</li> <li>Set date and venue for symposium</li> <li>Set date for abstracts</li> </ul>
January	<ul style="list-style-type: none"> <li>Send out invitations and guidelines for abstracts</li> <li>Contact industry for contributions/judges</li> </ul>
February-April	<ul style="list-style-type: none"> <li>Follow up on invitations and contacts</li> </ul>
May-June	<ul style="list-style-type: none"> <li>Begin accepting abstracts and monetary support</li> </ul>
July	<ul style="list-style-type: none"> <li>Abstract deadline</li> <li>Organize lunch, dinner, and hotel accommodations</li> </ul>
August	<ul style="list-style-type: none"> <li>Print program and send to judges with judging guidelines</li> </ul>
September	<ul style="list-style-type: none"> <li>Host symposium</li> </ul>

**TABLE 2**  
**Budget for Hosting a Symposium**  
*(Based on 100 Attendees)*

Food and venue*	\$25 per person
Keynote speaker	NA**
Awards	\$1200
Proceedings	\$500
Miscellaneous	\$800
<b>TOTAL</b>	<b>\$5000</b>

\* Lunch, banquet, snacks

\*\* Many companies will sponsor their employee

to the day's events.

The symposium activities were planned around graduate student research, which included nineteen oral presentations and ten posters covering a variety of areas in chemical engineering. Invited judges represented DuPont, Union Carbide Corporation, Bayer Corporation, Air Products and Chemicals, Inc., PPG Industries, Witco Corporation, and the Department of Energy. Symposium organizers provided the judges and participants with detailed judging criteria one month before the presentations. The industry judges generously spent the extra time and effort required to give excellent written comments to the participants in addition to the general scoring. This gave participants valuable feedback not normally received during a professional meeting. In addition, score-based prizes in the form of monetary awards, plaques, and certificates were awarded to first, second, and third places in both oral and poster presentation categories.

Interaction among students and industrial judges was further promoted during both a formal luncheon and an evening awards banquet. In the tradition of previous symposiums, a highlight of the day's activities was the keynote address given by a prominent figure in the field of chemical engineering. Past keynote speakers have included Dr. Rakesh Gupta (WVU), Dr. David Ollis (North Carolina State University), Dr. Michael Jaffe (Hoechst Celanese Corporation), Dr. George Keller (Union Carbide Corporation), and Dr. Frank Derbyshire (Center for Applied Energy Research, UK). For the Fifth Symposium, Dr. Stan Speed, Chief Scientist for Exxon Corporation in Baytown, Texas, gave the keynote address, "R&D at the Academic/Industrial Interface." Symposium organizers developed their skills in fundraising as the host school successfully obtained financial support through DuPont, Union Carbide Corporation, Witco Corporation, Hoescht Celanese Corporation, Exxon Corporation, and WVU to fund the event.

### CONCLUDING REMARKS

The Chemical Engineering Graduate Student Symposium provides a learning environment that promotes professional development of graduate students and the active exchange of ideas among regional industries and universities. It offers benefits beyond professional meetings for graduate students through detailed industrial feedback and firsthand experience in leadership and organization. The success and usefulness of the symposium is evidenced by its growth over the past five years. The goals and guidelines described here will hopefully encourage other schools to host regional symposia in their area. For further information on how to organize this type of event, please contact symposium organizers at

Chesga-pres@enr.uky.edu or cheadm@cemr.wvu.edu

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### REFERENCES

1. Modi, A.K., and P.T. Bowman, "The ChEGSA Symposium: A Continuing Tradition at Carnegie Mellon University," *Chem. Eng. Ed.*, **23**(2), 100 (1989) □

## ChE book review

### Analysis, Synthesis, and Design of Chemical Processes

by Richard Turton, Richard C. Bailie, Wallace B. Whiting,  
and Joseph A. Shaeiwitz

#### Reviewed by

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This is a new textbook for the process design course (one- or two-term) taught in almost all chemical engineering curricula. I have now used the book twice (once in a "beta" version) in the one-term, senior-level design course taught at Notre Dame. In general, I have found this text to be very well written, both clear and concise, with feedback from students positive in this regard as well. Much of the material covered is well supported by examples.

The book begins with a relatively detailed discussion of the various types of process diagrams, ranging from simple input-output diagrams to detailed piping and instrumentation diagrams. This serves not only to introduce a "language" for process design, but also, through the hierarchy of increasingly detailed diagrams, to emphasize to the student the evolutionary nature of design.

The first major section of the text covers engineering economics, including cost estimation. This material is concise and to the point, covering the necessary material without introducing unnecessary complexities. For capital cost estimation, an easy-to-use computer program (CAPCOST) running under Microsoft Windows™ is provided, a unique feature among currently available texts. The fairly extensive cost correlations and data incorporated in CAPCOST are also given in an appendix (in both tabular and graphical form).

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Chemical Engineering Education