

Paper Express brings industry to the classroom

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It's 10:00 on a Thursday morning at Lower Richland High School in Hopkins, SC. As the ninth-grade students file into third-period biology, they realize that today's class is not going to be typical. After a brief introduction from their teacher, Michael B. Ringley draws the students' attention to the back of the room as he explains why he's standing with Charlie Power and four IPST graduate students among a blender, an industrial vacuum, rolling pins, and ironing boards: "We're from the Technical Association of the Pulp and Paper Industry, and as our project this year, we elected, at each meeting location, to find a school, and come in, and demonstrate how to make paper."

Peter J. Veverka, a student at the Institute of Paper Science and Technology (IPST), moves to the front of the classroom to turn on *Paper: The Video*. Produced by TAPPI, the video highlights the role of paper in daily life. Following the video Veverka leads the students through a brief tour of a paper mill, using a poster board illustration of the papermaking process to describe the steps involved. The lesson concludes with an opportunity for each student to make a sheet of paper. Before the day is over, 80 students will have a new appreciation for how paper is made.

Ringley, who is the Southeast Local Section Paper Express liaison for secondary schools, says that section members saw the ability to reach students at a young age as a way to influence them to plan their curriculum toward science and engineering and ultimately, to perpetuate the pulp and paper industry.

He met IPST students Peter J. Veverka and Lois Forde in June 1992 after TAPPI's Public Relations Manager Pamela Sweat asked the students to demonstrate experiments from TAPPI's newly unveiled Paper Express Program at TAPPI 92.

Learning by example

Ringley and Forde, 1992–1993 TAPPI IPST Student Chapter vice president, recall Charlie Power as a primary influence for the format of their Paper Express demonstrations. During the three decades Power spent with the International Paper Co., he tutored some 18,000 students on papermaking. In 1991, TAPPI presented Power with a special award for his contributions to students.

The Southeast TAPPI Local Section asked Forde and Veverka to assist with a papermaking demonstration for children at the

Using an industrial vacuum, IPST student **Peter J. Veverka** (far left), demonstrates how applied suction removes water from wood fibers to form a sheet of paper.



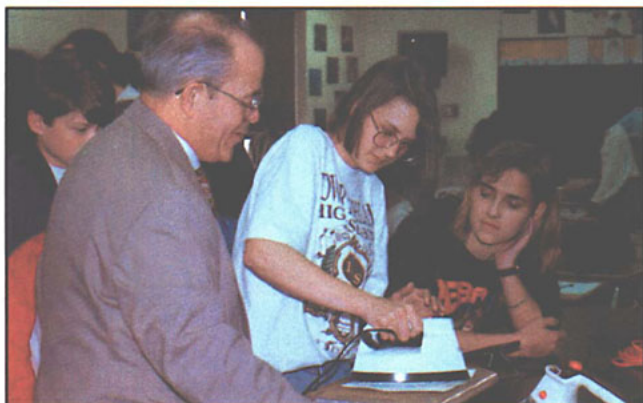
IPST student **Lois J. Forde** (far left) watches a student use a rolling pin and felts to press water from a sheet of paper.



section's June 1992 meeting. That day, above a crowd of children's faces, Charlie Power showed how paper is made. According to Forde, Power's setup exposed Veverka and her to what he used to facilitate his own program.

"When we were at the meeting, we started to think..., *Couldn't we do this on a more regular basis?*" Forde recalls, "and we agreed to always have an IPST representative at the Southeast Section meetings for a demonstration," she said. "From there it sort of ballooned."

Southeast Local Section Paper Express Liaison **Michael B. Ringley** watches a student perform the final step in the classroom papermaking process using an iron to simulate a paper machine dryer section.



Positive influence

What began as an unprecedented grassroots partnership between a TAPPI local section and a student chapter continues to grow. Veverka, 1992–1993 IPST TAPPI Student Chapter president, estimates that since June 1992, the chapter has introduced the Paper Express program to some 650 students.

What is it about Paper Express that motivates Forde and Veverka to volunteer their time?

“Our industry gets a lot of bad press and people don’t recognize the good things that are going on,” says Forde, “so this is an opportunity for us to, in some ways, share what we’ve been given, because our industry has a lot of excellent science going on and careers that spread across the board between science and engineering.”

Paper Express team members (top, l to r) IPST student **Eric Watkins**, **Michael B. Ringley**, **Peter J. Veverka**, and (bottom, l to r) IPST students **Laura M. Thompson** and **Lois J. Forde**



“As a young person, I had no idea even what engineering really was about. The chance to share about the industry and about potential careers for young people is really something that I [like] to do.”

Veverka recalls that during the Paper Express demonstrations he performed at TAPPI 92, he realized that the program had great potential. “Even though we didn’t have kids at TAPPI 92, we saw there was a lot of good that our chapter could do.”

Laura M. Thompson, 1993–1994 IPST TAPPI Student Chapter president recalls, “That was a similar thing for me too. I remember when I was in high school having a group of engineers come to our school and say, ‘If you’re good at math and science, you really ought to go into engineering.’ That’s how I got into chemical engineering and then from there got into papermaking.”

Paper Express Kits are available

Introduced at TAPPI 92, Paper Express is TAPPI’s educational outreach program developed through the joint efforts of TAPPI’s Marketing Committee and TAPPI staff. The multicomponent program is designed to attract young people to careers in the paper and related industries. TAPPI members interested in participating in this program can order a Paper Express Kit that provides instructions to conduct experiments and lead discussions on how paper is made.

The Paper Express Kit contains a *Wizard Manual* with instructions to conduct four science modules on papermaking, cryogenics, light and optics, and analytical chemistry. Employees of International Paper Co.’s Corporate Research Center developed the experiments. A Wizard training video shows how to conduct the experiments.

Paper: The Video is another component of the Paper Express Kit. The award-winning video is targeted to students in grades 3-9 and uses rap music and special effects to describe the history of paper, its contributions to society, and what life would be like without it. The kit also contains ads and posters to promote the program.

The Paper Express Kit is available to TAPPI members for US\$ 65 and to nonmembers for US\$ 75. Materials may also be ordered separately. The kits are available to TAPPI Sustaining Member Companies, Local Sections, and Student Chapters at no charge. To order a kit, call TAPPI’s toll-free Service Line at telephone: 1-800-332-8686 (in the United States) and 1-800-446-9431 (in Canada).

For Thompson, Paper Express provides a way for her to reach students and tell them about the industry. "Hopefully some adult will come up to me and say, '*When I was a little kid you taught me how to make paper and now I'm a papermaker*'."

"Education...is not popular with kids," says Eric Watkins, 1993–1994 TAPPI IPST Student Chapter vice president. "If you say, when you're a little kid, '*I want to be a scientist or engineer*',...you get type cast as a nerd. Anything we can do to help show what it's really about and that it's something real and exciting will help in the long run."

Facilitating through a network

How did these IPST students bring the Paper Express program to some 650 students in one year? By building a network within their chapter to facilitate the program.

"Last September when we decided to start doing Paper Express locally, we had people from the student chapter sign up," says Veverka. "We call them Paper Express *Wizards*." These students attended a training session to learn how to assist with Paper Express demonstrations. After watching *Paper: The Video* and learning how to make a sheet of paper by hand these students are ready to accompany those who lead the demonstrations and assist.

"After they do a couple of demonstrations, they could probably lead one themselves," says Veverka, "and that's what we're trying to do."

"I don't think...we've ever sent two people who haven't done it before," notes Forde.

Most often a school visit will be based on a recommendation made by the Southeast Local Section arrangements chairperson to Ringley. After receiving a recommendation, Ringley will contact the school and coordinate a visit. Trips such as the one to Lower Richland High School came to fruition through Ringley's communication with Susan Vaughnan McPherson, manager of community services at Union Camp Corp.'s Fine Paper Division in Eastover, SC. McPherson established the link between Ringley and the high school principal. Ringley then corresponded with the principal and the IPST students to plan the visit.

The IPST students usually travel to local schools on Fridays; such visits usually take a half-day. Visits scheduled to coincide with Southeast Local Section meetings can require a commitment of two or three days, says Forde. But the time is well spent, she believes, because in addition to conducting Paper Express demonstrations at local schools, the students also attend the Local Section meeting and mill tour.

Travel expenses are shared by the Southeast Local Section and the IPST Student Chapter: the Local Section paid for the equipment needed to make the handsheets and the cost of the Paper Express program. The section also covers meal and room expenses. IPST reimburses the students for mileage.

Just the beginning

From their experiences with Paper Express, Ringley and the IPST students envision several possibilities for the program's future.

Education

Prior to demonstrating the Paper Express program in schools, Ringley suggests, "We need to stir up the curiosity of the schools first by presenting them with some information on the pulp and paper industry." Because their knowledge of the industry may be limited, it's difficult for school administrators to make a judgment on whether or not Paper Express should be demonstrated at their schools, he says.

The team brings the Paper Express program to first- through tenth-grade students. "Depending on the age," says Veverka, "you have to tailor your presentation." He would like to see separate curriculums developed for grade school students and for high school students.

"Every elementary school has a fireman come during Fire Prevention Week," Thompson says. "I'd like to see something like our papermaking and Paper Express be as widespread as that."

"It's a good program for the student chapters to handle," says Watkins. With the potential of 22 TAPPI student chapters becoming involved, this approach for demonstrating Paper Express holds promise.

"Ideally," Forde adds, "if you went to the same school for two or three years in a row, you could say, *Okay, now your teachers know how to do this; we'll have to move on and go to other schools.*"

"It would be a great thing to tie into any kind of curriculum," Forde continues, "because there are so many different sciences involved.... That would require a lot of forethought and planning, but it wouldn't be hard to do."

TAPPI's Local Section Operations Council Chairman Paul W. Magnabosco is committed to supporting the Paper Express program. He envisions the local sections and student chapters playing an active role in the program's success: "We hope to be able to publish more stories like [this as]...the local sections and student chapters report on their experiences and successes in bringing this wonderful program to the classroom."

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