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Forum Builds Leadership Skills

The Intel® Teach to the Future Leadership Forum creates structured opportunities for K-12 instructional leaders to focus on the use of technology in education. Participants say this new professional development offering helps school leaders examine "their critical role in supporting technology integration in the classroom." Read the article.

Ask an Expert: Susan Brooks-Young

Susan Brooks-Young has been an advocate for the effective integration of instructional technology throughout her 27 years as teacher, administrator, author, and consultant. The full promise has not yet been realized, she says, in part because of a lack of support from school leaders when it comes to technology integration. The good news: Administrators don't need to become technology experts in order to be effective technology leaders. Read the article.

Science Competition Opens Doors

With the finals of the 2005 Intel Science Talent Search coming up in March, winners from last year's event reflect on what the experience has meant to them. Their advice for this year's finalists in the nation's oldest and most highly regarded pre-college science competition? Let the judges hear you think through a challenging question. Enjoy the chance to meet "amazing people." And be ready to jump on new opportunities. Read the article.

Featured Resource
Learn to Teach Thinking Skills

A new professional development offering, Intel® Teach to the Future Workshop on Teaching Thinking with Technology, is coming this summer. It provides teachers with face-to-face, hands-on experiences in planning technology-rich units that build students' higher-order thinking skills. The workshop teaches how to use interactive thinking tools to help students communicate their understanding of complex concepts. Learn more.

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Forum Builds Leadership Skills

School Leaders Examine Their Critical Role in Technology Integration

At Columbus Park School in Worcester, Massachusetts, Principal Dolores Gribouski models the use of technology on a daily basis. Teachers see her using a laptop to make classroom observations and a handheld to manage her calendar. She uses software to analyze student assessment data, which guides instructional decisions. She also looks for ways to stretch her elementary school's resources so that her diverse students—many growing up in poverty—will learn to use technologies to "open avenues for additional learning and increased achievement."

Through the new Intel® Teach to the Future Leadership Forum, Gribouski recently had a chance to share her vision of robust technology use with other school leaders from her community. "We learned that principals in our district have different levels of comfort with technology," she says. "We were able to have a conversation about that so we can start to build partnerships and learn from each other."

Launched nationwide in the United States in January 2005, the Intel Teach to the Future Leadership Forum creates structured opportunities for K-12 instructional leaders to come together and focus on the use of technology in education. The Intel Teach to the Future Leadership Forum helps build necessary administrative support for technology integration. In a four-hour session, participants make hands-on use of technology as they:

- Examine the critical role leaders play in the effective integration of technology into teaching and learning
- Create a prioritized list of leadership behaviors that affect the integration of technology as a tool to improve student learning
- Analyze the ISTE National Educational Technology Standards for School Administrators (NETS-A)*
- Begin development of a personalized action plan

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The curriculum also introduces school leaders to the classroom resources available from www.intel.com/education/teach/forums, including online tools and resources and the Intel® Teach to the Future professional development program.

Designed by Leaders

School leaders helped to write and design the Intel Teach to the Future Leadership Forum curriculum. Marion Ginopolis, who directs a statewide professional development program for school administrators, Michigan's LEADing the Future (funded by the Gates Foundation), was part of the writing team. She also organized a group of Michigan school leaders to pilot the curriculum. In all, more than 450 administrators from 10 states participated in the Intel Teach to the Future Leadership Forum pilot. Evaluation results found 95 percent reported they were likely to use the ideas and skills learned in the forum to help them improve teacher effectiveness and student achievement by supporting and promoting the integration of technology.

"The forum takes administrators beyond awareness to the action level," Ginopolis says. "They go back to their schools and prioritize their role as a leader of instructional technology. In their conversations with faculty, they include technology integration. When they conduct classroom observations, they look for effective use of technology because now they know what to look for."

Ginopolis says the curriculum prompts participants to examine their critical role in supporting technology integration in the classroom. "The forum encourages school leaders to ask: What does technology integration mean? How can I support my teachers' efforts?" When she watches leaders participate in the forum, Ginopolis says, "The biggest 'Aha!' is realizing how to reprioritize your day to be a more effective leader of instructional technology."

When Ginopolis talks with Michigan school leaders about technology issues, she often uses herself as an example. After 30 years in education, she can vouch for the benefits of lifelong learning. "I can present to administrators who may be approaching retirement and think they don't need to learn about technology. I can tell them, you're never too old to learn," she says. "It's incumbent on us to change the way we teach and learn and model for students. You just have to watch kids to see that engaging with technology is a natural phenomenon for them. It's motivating for kids to see their principal using technology, too."

Essential Support

Research shows that support from school leaders is essential for technology integration to succeed. Researchers at the Educational Development Center's Center for Children and Technology concluded that the presence or absence of administrative support affects teachers' abilities to pursue technology integration. The International Society for Technology in Education (ISTE) describes an effective Twenty-First Century administrator as a hands-on user of technology. The ISTE National Educational Technology Standards for Administrators (NETS-A) outline the core technology competencies that leaders need in order to be effective as managers, decision makers, and instructional leaders.

At Columbus Park for example, achieving successful technology integration has taken several years. Principal Gribouski explains that she and her faculty have been committed to focusing on "all aspects—resources, time, professional

development, and access to the technology itself." Gribouski articulates a clear vision for technology integration." I see technology as an essential part of teaching and learning. As teachers and leaders, we need to model the use of it—as a resource for our own learning, as a resource for our teaching, and as a tool for our students to use for research and documentation of their learning."

Gribouski says her faculty's participation in the Intel Teach to the Future program has been "a springboard for us." She participated in the professional development sessions alongside her teachers. "I was increasing my own knowledge base. But as teachers had questions—whether it was about time or additional resources they would need—I could listen to them and could then plan better to support them." Columbus Park is a demonstration site for Accelerated Schools and sets high expectations. Because the school is focused on the continued improvement of student achievement, collaboration and professional development are key strategies for success.

Gribouski has participated in the Leadership Forum with fellow administrators, including many new school principals. "The structured conversations helped these new leaders so they could move forward with action plans and identify key issues for follow up," she says.

Visit the Intel Teach to the Future Leadership Forum to learn more.

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Ask an Expert
Susan Brooks-Young: Helping Leaders 'Get It'

Susan Brooks-Young has been an advocate for effective integration of instructional technology throughout her 27 years as teacher, administrator, author, and consultant. Yet, as she writes in *Making Technology Standards Work for You: A Guide for School Administrators* (International Society for Technology in Education, 2002), "the full promise of instructional technology has yet to be realized." We spoke with Brooks-Young about technology challenges and opportunities facing school leaders today, just as the Intel® Teach to the Future Leadership Forum was launching nationwide. The forum, a free professional development offering designed for K-12 instructional leaders, is designed specifically for those who plan and implement technology integration and professional development in their schools. (See related story.)

What's the biggest challenge administrators face when it comes to technology integration?

Many administrators don't know what effective integration looks like, so they're not in the position to determine whether teachers are making the best use of technology. They haven't been trained to effectively evaluate technology-based lessons and usually do not have an observation tool that addresses this. They're unfamiliar with research that would help them put technology use in its proper context. Therefore, they seem to think that if they have a computer lab and kids are using it for drill and practice, then technology has been integrated into teaching and learning.

In *Making Technology Standards Work for You*, you explain that developing an effective instructional technology program requires a willingness to risk making mistakes and to do things differently. Why is technology integration worth the risk?

Research shows that when technology is readily available and used at more sophisticated levels, students increase their problem-solving and higher-order thinking skills. Students who can think perform better on standardized tests than students who simply parrot facts. It's our job to prepare students to be contributing members of society, not just be good test-takers. They need to learn

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how to be information literate—how to identify problems and find ways to solve them in groups. Administrators need to realize that these efforts will serve our students well—not just in the short run, but for their lifetimes.

Your recent book is organized around ISTE's National Educational Technology Standards for Administrators (NETS-A). Similarly, the Intel Teach to the Future Leadership Forum guides leaders to analyze the NETS-A, then synthesize their understanding to develop an action plan. What do you hear from administrators about the value of these standards?

The NETS-A provide a framework for administrators to approach the tasks at hand. Most of the administrators I work with are relieved to learn that they don't need to become technology experts in order to be effective technology leaders. Personal proficiency with technology is important, because that's how leaders gain skills to model effective technology use. But that's just one small piece—the NETS-A are more about leadership than technical expertise.

During the forum, participants read case studies about real school administrators, then reflect on each leader's vision and how well the leader is modeling technology use. What value do you see in providing leaders with time and opportunity to examine these topics with their peers?

Sometimes administrators don't know what they don't know. Case studies help put things into context. I also remind leaders that they should not expect to implement the NETS-A in isolation. Discussions with other educational leaders can help to advance their understanding and shape their vision.

What does effective technology integration look like to you?

It's about using the appropriate tool at the right time—using technology when it will provide better support to students than another tool in a teacher's instructional toolbox.

What keeps you excited about this work?

The most exciting thing for me is when teachers and administrators "get it." I've actually had people get teary-eyed during workshops and say that before looking at the research and examples of how this translates to classroom use, they didn't understand why they were having difficulty making effective use of technology. A recent survey shows that today's students are approaching their life and their daily activities differently because of the technology. This gives educators a whole new viewpoint of why they may see things differently than their students do.
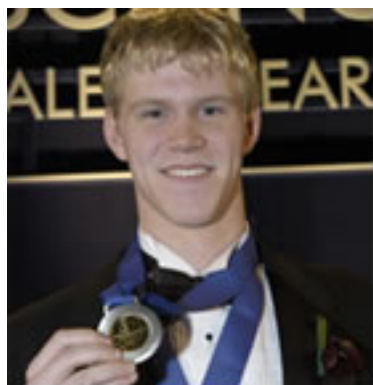
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Science Competition Opens Doors
Intel STS Finalists Gather in Washington, D.C.

When 17-year-old Mason Hedberg, then a senior from North Attleboro High School in Massachusetts, won the 2004 Intel Science Talent Search (Intel STS) he joined the ranks of alumni who have made extraordinary contributions to mathematics and science. The honor roll of America's oldest and most highly regarded pre-college science competition includes six Nobel Prizes, three National Medals of Science, 10 MacArthur Foundation Fellowships, and two Fields Medals, among many other accolades. Hedberg's biochemistry research project focused on the role of telomerase enzyme inhibitors as potential tumor suppressors. Inspired to conduct cancer research when his grandmother was diagnosed with a rare form of the disease, he invented a novel dialysis chamber to conduct what he says is a faster, more efficient method to screen for telomerase inhibitors. Now a freshman at Brown University, Hedberg says, "At this point in my life, I can't fathom changing the world. I'm just trying to take advantage of all the opportunities I can."

Once-in-a-Lifetime Experience
The 40 high school seniors who gather in Washington, D.C., March 10-15 for the 2005 Intel STS finals can anticipate a once-in-a-lifetime experience, according to Hedberg and other recent finalists. Ryna Karnik, who placed third in Intel STS last year and is now a freshman at Stanford University, says, "You can't just go for the competition. You also get to see Washington, D.C., meet Nobel Prize winners, and get to know all the other finalists—who are these amazing, awesome people. That's the best part of it."

A hallmark of the competition is the rigorous judging process. Each finalist goes through formal interviews with four separate judging panels made up of world-class scientists. What are the judges looking for? "Most of what they want to know about you is how you think, whether or not you can apply the scientific method, what kind of scientist you actually are," Hedberg says. His advice? "Even if you don't know the answer, start talking through it. Let the judges hear how you approach a problem."

Karnik says her curiosity about science helped her get ready for the judging.

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"Reading science magazines helps you pick up on what's happening in different fields, whether it's biophysics, medicine, cosmology, or chemistry." Her high school research project was in electrical engineering and focused upon a new method for constructing microchips. The judges' questions, however, are apt to range across many fields. "That's their point—it's not about how much science you know, but how well you're thinking as a scientist."

Lasting Connections
For students who reach the final round of the Intel Science Talent Search, opportunities continue to unfold long after the contest ends. In fact, since the event was launched more than 60 years ago, it has shaped the lives of many young scientists. Alumni often credit the experience with providing validation at the cusp of adulthood, building confidence in their scientific abilities, and forging connections that last for decades.

Karnik says being part of Intel STS makes you part of a community. When she arrived at Stanford, Intel STS finalists from previous years contacted her "and made me feel welcome. It's a great feeling."

Hedberg spent his summer after high school as a research intern at the Dana Farber Cancer Institute in Boston. Now at Brown University, he's conducting research that involves gene targeting. "These research opportunities never would have been possible without the recognition I got from Intel STS," Hedberg says. The internship at Dana Farber came about after Hedberg won Intel STS, and the president of the institute extended a personal invitation. "I learned so much that summer—it was incredible."

Although only 40 students each year reach the finals of Intel STS, some 1,600 students apply and 300 are recognized as semifinalists. Every student who applies to the competition stands to gain from conducting an independent research project. "Doing a project like this during high school changes the direction you set," says Karnik. "Research becomes a part of your life."

Intel's sponsorship of the Intel Science Talent Search—including $1.25 million in scholarships annually—is part of the Intel® Innovation in Education initiative. To learn more about Intel STS, including news about the 2005 finals, visit the Intel Innovation in Education Web site.

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Now you can read about these and other new developments in a section of the Intel® Innovation in Education Web site, Learning About Technology.

Updated to answer educators' questions about some of the latest trends in technology, this is a site that will shed light on subjects such as wireless hotspots, developments for the digital home, and mobile computing for the classroom. Intel's researchers and technologists also share key information about the future of computing. They offer accessible information about how technology works and answer questions such as: What is a cleanroom? How do microprocessors work? Case studies illustrate how schools are using specific technologies to improve the learning environment. Teachers will also identify resources to use with students, such as an online resource for learning with handhelds.

For more information, visit Learning About Technology.

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Share Your Project Ideas
An Innovation Odyssey Welcomes Teacher Submissions

In Austin, Texas, middle school students studying the Holocaust are conducting a video conference to interview an expert source about hate speech. In Gevenbrioch, Germany, secondary students are learning how statistics can be manipulated by using spreadsheet software to generate diagrams. In the Urals region of Russia, students are using a variety of technologies to help them investigate and analyze the properties of snow.

These geographically diverse classrooms are among the nearly 400 featured in *An Innovation Odyssey*, an online collection of stories from around the world. Each day, a teacher who is making interesting and effective use of technology to enhance student learning shares his or her story on the Intel® Innovation in Education Web site.

Teachers are invited to submit their ideas to *An Innovation Odyssey* and become part of a global community. Those with a technology-rich project to share can download an online submission packet from www.intel.com/education/odyssey.

What kinds of projects are right for *An Innovation Odyssey*? We are especially interested in elementary and secondary projects that:

- Use technology to enhance learning
- Demonstrate effective use of project-based learning
- Prompt students to apply and develop their higher-order thinking skills

Visit *An Innovation Odyssey* to learn more, and explore the Story Finder feature that allows you to search the collection by subject, grade level, or type of technology used.

To submit a story, simply complete a short questionnaire to describe the project, then send photos and permission forms. All completed submissions will be considered for publication. Teachers are notified if their project idea is going to be developed into an Odyssey story.

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