



SPRING
2007

A community newsletter from Intel Massachusetts Public Affairs

Report to the Community

Sharing knowledge with the neighbors



Hudson Police Lieutenant Michael Burks and Intel's Neil Fairall (above).
(Right) Sylvia Moriarty and Martial Frechette.



Volunteers Lend A Hand With Computers, Math, And Safety

The type of manufacturing and research and development that Intel does in Hudson requires many people who know a great deal about working with computers, or ensuring a safe work environment, or planning how a team can accomplish a goal quickly and well. Intel wants to be an asset to its communities everywhere. What better way than to encourage employees to share some of their skills, knowledge and energy with the neighbors?

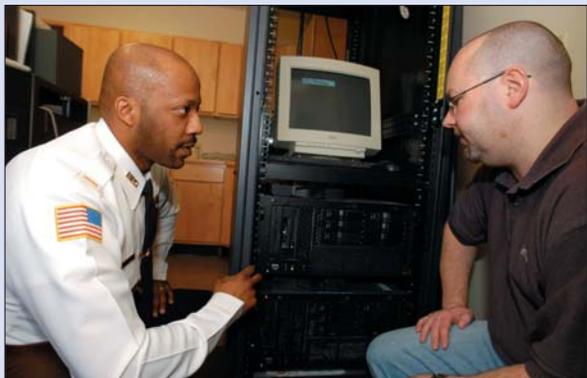
The Hudson Police department needed to upgrade its computer system. Intel computer operations specialist Neil Fairall volunteered to lend a hand. Lieutenant Michael Burks said it made all the difference.

Intel has many employees who are good at math, so when Hudson High requested tutors to prepare students for the MCAS exam, a number signed up. Everyone they tutored last year passed.

Intel safety experts constantly look for ways to make Intel's enviable safety record even stronger. In April, they shared their knowledge at the Seniors Conference at Assabet.

Many seniors want to learn to use email to stay in touch with family and friends. Engineer Martial Frechette enjoys teaching them how.

We hope you enjoy this report from Intel.



Hudson Police Lieutenant Michael Burks, left, and Intel Information Technology specialist Neil Fairall.

Intel specialist helps 'close the case' on computer problem at Hudson Police Dept.

Something was wrong with the Hudson Police Department's computer system last December. Print jobs would not print. New anti-virus software would not load. The system needed to be restarted several times a week.

The computer system plays a pivotal role in the town's police department. Among other things, it runs the department's database for record keeping; reports on incidents, such as breaking and entry, accidents, photos; and more. Fifty Hudson police officers and civilian employees depend on it. Late last year, the system increasingly could not do what they needed it to do.

Lieutenant Michael Burks, a shift commander, also manages the computer system. Four years ago, Intel computer specialists volunteered to help him install it. However, four years is a fairly long time in the life of a computer system, especially when the volume of information entered into it keeps

growing.

Buying a new system now "just wasn't in the budget," Burks said. He decided the system needed more disk storage, but knew that installing it without disrupting police operations would require professional help.

Computer services companies told Burks it would cost \$3,000 just for them to come and analyze the problem. Burks knew from experience Intel had the skills he needed. One day when Intel information technology specialist Neil Fairall and his wife were visiting family in England, their cell phone rang. It was Lieutenant Burks, asking Fairall to come by and consult on the police computer system.

Fairall used his operations experience to integrate the new storage on the busy server without losing data and with minimal down time.

The system is now working fine, Lieutenant Burks says, but he adds, "I hope we don't have to call in Neil for another four years!"

Tutors build Hudson students' confidence in their math skills

Last year a number of Intel employees, many of them engineers and all of them good at math, began tutoring a group of Hudson High students to prepare them for the MCAS math test. Several of the students were new to this country, and were anxious about the taking the exam, especially since English was not their primary language. After working with the Intel volunteers, all the students who were tutored passed the test, which is a state requirement for a high school diploma.

This year the tutors are back at Hudson High. For an hour or more each Tuesday, they work with 18 tenth-grade students who will take the Math MCAS in late May.

Those students need "every strategy we can use," says Hudson High's Sandy Nichols. "Most of those students have no self confidence in their math abilities."

This program is having a tremendous impact," she says. Tutors work with the students in small group instruction. "They provide extra math support and build their confidence," Nichols explains. "The students feel comfortable asking questions because they're not in front of the entire class. It's also a change of pace from the daily math class routine."

Hudson High's primary goal is to make sure every student passes the Math MCAS," Nichols says. "Hudson also seeks to prepare students to apply mathematics in the real world. Sometimes the confidence these students build helps them to do so."



Hudson High student Juan Ortiz (l) with Intel tutor Joshua Zelman.

Martial Frechette helps seniors keep in touch with family and friends

Many older people are eager to learn about computers for a very specific reason. They want to know how to do email so they can communicate with family and friends who often live far away. When you no longer drive, three towns away is far away.

"It's all about communication," says Intel engineer Martial Frechette, who enjoys introducing seniors to the wonders of email and the Web at the non-profit New Horizons independent and assisted living center in Marlborough.

Frechette says that the desire to communicate is what draws older students to his informal classes.

"Seniors are trying to learn how to do email so they can talk with their children and grandchildren who live across the street or across the country," he says. Frechette's classes don't have a structured agenda. Instead, seniors ask him, "How do I use email?" or "How do I get on the Internet?"

Frechette says his senior students are



Sylvia Moriarty and Martial Frechette share a laugh at the computer.

interested in what he calls the "human side" of computers. "They want to communicate with loved ones, or look at that Web page that their daughter recommended to them," he says. Some like to do shopping from home. Relatively few of his students want to learn to create a spreadsheet or format a document, which have been the traditional focus of computer classes.

Frechette first came in contact with New Horizons because he has an aunt and uncle living there. He found he had so much fun introducing the residents to email and the Web that he kept it up.

Intel educational grant plants a seed as Nashoba teaches math a new way

A seed was planted when Intel awarded Nashoba Regional High School an educational grant to buy 20 tablet notebook PCs and six wireless projectors in late 2005. Now that \$67,000 investment is beginning to catch attention around the state.

Mary Marotta, the high school's Technology Department Chair, had an ambitious plan to combine tablet personal computers or PC's for math teachers with Microsoft SharePoint technology. Tablet computers enable people to enter data into the computer by writing it on its screen.

The advantages were clear to Marotta. Teachers could write their math lessons on the screen of their tablet PCs before class and project them from anywhere they were in the classroom.

Not only would this save precious class time that they would otherwise spend writing with their backs to the class, but it would enable them to watch their students react to the new material. Teachers could save what they wrote in their tablet computers and share it with other teachers and students.

The seed grows

The Nashoba school district matched the Intel grant and bought 20 more tablets. By May of 2006, the Nashoba High math teachers were presenting their tablet instruction techniques to the entire district. Other local schools began visiting Nashoba for learn more.

In April 2006, Microsoft chose to feature Nashoba High as its Showcase School of the Month. By May, the Nashoba High math teachers were presenting their tablet instruction techniques to the entire district. Other local schools began visiting Nashoba for evaluation of tablet notebooks and SharePoint.

Last fall, Marotta flew to Seattle to receive an Innovative Teacher award from Microsoft and later joined two Nashoba teachers to give a presentation on the "Tablet PC: The Ultimate Teaching and Learning Tool," to MassCue



Nashoba High math teachers write equations onto their tablet PC's screen, above, then project them onto the whiteboard and face students as they teach.

(Massachusetts Computer-Using Educators), a professional group. Marotta and Nashoba teachers presented their program at MassCue a second time this year as the use of tablets continues to grow at Nashoba.

Early in February, Holliston High math teachers Robert Tivnan and Diane Feeley spent the morning with Mary Marotta at Nashoba Regional High School. "We were inspired by her passion for integrating technology and impressed by the breadth of her knowledge in educational technology," Tivnan wrote in an email to Principal John G. Smith.

"We were equally impressed with the teachers (whose) implementation of technology was powerful yet transparent in that students were not focused on how technology works but on the learning process. Sylvia Bullock used her tablet PC to present a dynamic PowerPoint presentation that fully engaged her geometry students.

"Rick Kempie showed how he used the tablet in his Algebra 2 class to provide a new perspective on logarithms and their applications. Pat Clark engaged her advanced statistics students by using the tablet to break a complex problem into meaningful steps. Overall, our visit was one of the most insightful and practical experiences we have had as educators outside our classrooms," Tivnan wrote.

How Intel-sponsored math course helped one student earn straight A's

Who is an "average" math student? The term could describe a student who has never enjoyed math or done particularly well at it. Or it could be applied to Hudson High student Louis Martinez, but not after he took the Intel-sponsored Math ADDventures course three years ago.

"I was good at math. It was my best subject," says Martinez, now 17 and a senior. "When I was in the seventh grade, I would sit in math class and be bored and not participate much." But Martinez was on an academic track to take easier math courses when he knew he could do more.

Math ADDventures is an Intel-sponsored Saturday math class for students getting C's and B's but who want to do better, or who want to prepare for more difficult courses "I took the course," says Martinez, "to get a better work ethic in math."

"I didn't talk much in math class before. I was afraid of being wrong. Math ADDventures helped me to learn not to doubt myself, that I would be right most of the time when I participated in class. After Math ADDventures, I have got straight A's in every math class I've ever taken".

Today, Martinez is taking advanced placement calculus at Hudson High and aims to become an architect. He also volunteered as a mentor in this year's Math ADDventures



Hudson High's Louis Martinez has earned straight A's in math since taking the Intel-sponsored Math ADDventures course.

course, which began on January 20 and ended April 14. "I figured it would be a good experience for me. It is actually quite challenging to be a volunteer mentor in the class, but I've always liked challenging situations."

Intel Massachusetts Education Manager Rob Richardson worked with retired Hudson High math teacher J. Bryan Sullivan to design the Math ADDventures course four years ago. Intel has sponsored the 10-session program each year since.

Neighbors eagerly await Intel's annual PC/TV recycling event

Intel Massachusetts works with Advanced Recovery, Inc. to professionally recycle its own outdated personal computer equipment. So it makes sense for Intel to share that recycling expertise with Metro-West neighbors each April during Earth Week.

This event has grown in popularity, more than tripling the amount of used electronic gear that it attracted in 2006 compared with the first event in 2003. Employee volunteers help neighbors safely recycle personal computer equipment, televisions, radios, stereos, microwave ovens, faxes, telephones, and more. Residents are simply asked to make a donation to local non-profit agencies.

Intel, which builds components used in computers and other electronic products, believes it shares a responsibility with computer manufacturers, retailers, consumers, governments, and recyclers to participate in the ultimate disposition or recycling of those products. This spring's event marked the fifth year Intel Massachusetts has held this event as part of its commitment to the community and to the environment.



Intel volunteers unload used electronics gear from a neighbor's car.

Intel volunteers tell students it pays to challenge yourself in high school courses

After they pass MCAS and complete all the requirements to graduate from high school, Massachusetts high school students are all set for college or work, right? Too often, "Wrong." Many high school graduates are in for a rude surprise. They find that college and the world of work both demand more skills and a more rigorous education in math, science, and foreign languages than the high schools require for graduation.

If only they had known while they were still in high school. "Too often, high school students don't have a clear view of what kind of course work they really need to be ready for college or work," says Rob Richardson, Intel's East Coast education manager.

Intel is trying to help at Assabet Valley Regional Technical High School in Marlborough. Twelve volunteers completed training to speak to Assabet Valley High students about the demands in the work place and the need to strive for success after high school graduation and not just qualify



High school students often don't have a clear view of what course work they really need for college or work.

for graduation.

They'll encourage students to choose the more rigorous "State Scholars" regimen of courses (four years of math, three years of science, two of foreign language and keep a 3.0 grade point average). They'll speak from personal experience that this is the kind of coursework

colleges want, and that builds the skills and competencies that employers want.

The State Scholar Initiative is a federally funded program that uses business leaders to encourage students to choose and complete a rigorous course load. Students who take this course regimen can qualify for certain incentives, including scholarships.

The Massachusetts Business Alliance for Education coordinates the State Scholars Program with Assabet and four other schools. Each school has a business partner, like Assabet and Intel, to help bring another, credible voice to the chorus of adults who say to students, "we care, we want you to reach higher."

Engineer Idol: TV series elevates engineering to rock star status

Design Squad, a new TV series that aired on PBS this spring with Intel sponsorship, provides lively entertainment with a serious purpose: to help kids learn that designing and building things can be fun, even cool, and that they can be great at engineering.

The Intel Foundation sponsors Design Squad as part of Intel's commitment to strengthen education in science, technology, engineering and math. Design Squad aims to change outdated perceptions of engineering and attract more young people to engineering as a career.

Design Squad highlights the little-known fun aspects of engineering such as creativity, problem solving and teamwork as young people compete on projects assigned by two real-life young engineers. "Design Squad is a unique way to pique students' interest in engineering as a creative career that enables one to turn science into reality," says Brenda Musilli, director of education for Intel. "To meet today's global competitive challenges, we need to increase the number of students pursuing science, mathematics and engineering in school and in their careers."

Forty-two Hudson employees, many of them engineers, took a Design Squad training class in December to prepare them to introduce middle school students to engineering. In March and



Intel is a major sponsor of the Design Squad show about young engineers, filmed at WGBH in Cambridge.

April, they visited 7th-grade classes in Hudson and Marlborough as well as Worcester Middle schools to help students experience the challenge, teamwork, and excitement that engineering work offers.

After a visit to her school, Hudson Middle School Science teacher Jennifer Keck said, "The students have talked about it all day and I am confident that the presentation and activity today will continue to be discussed in my classes in the days to come."



Hudson High senior Mike Mullinax joined Intel employees for a day to learn about their jobs.

Mentors kick-start students' interest in engineering

Job Shadow Day gets teenagers to open up

The 23 high school students from Hudson High, Assabet Valley Regional Technical High School in Marlborough, and Milbury High were quiet as they filed into an HD2 conference room on February 2. After a tour of the manufacturing area and a couple of hours with 21 volunteer mentors, they came back different people.

"They were amazed by how we manufacture chip sets," said Intel project manager Harry Danso, who helped run the event. "They saw that engineering is much more dynamic than they had thought it was," he said. "They saw that being an engineer doesn't mean that you just sit in the office. It's a lot of problem solving."

"These kids were unique," Danso added, "because about 90 percent were interested in engineering or technical careers. They became much more open and engaged after the tour and the time with the mentors."

Duffy Tilson took Hudson senior Mike Mullinax on a tour of the central utilities building, which supports the clean room manufacturing area. Mullinax, the son of an Intel

employee, had been to the site before but said "I really wanted to see what goes on here beyond what I could see from the cubes (open offices)." Tilson's tour took Mullinax "to the big generator, the switch gear, the pumps, the control room," Tilson said. "He even had a chance to sit in a meeting — woo hoo!"

Mullinax, who plans a college major in mechanical engineering, found it fascinating to watch Tilson monitor the site's electrical use from his computer. Tilson and Mullinax then joined two other engineers at lunch. They talked to the Hudson High senior about courses he should be looking at and emphasized "study, study, study and do what you enjoy," Tilson said.

It is clear that a previous exposure to robotics has already helped Mike Mullinax decide that he enjoys engineering. He learned from participating in a high school robotics team that the whole process of "here's a problem, go solve it by this date, on these parameters" appeals to him.

"It's been really exciting to meet the challenge of it," Mullinax said.