

>> Grand Rapids CCHS pre-engineering students and designers of the award winning Hand Typer pictured during their visit to Washington D.C. (from left) Madalyn Esch, Jen Zarzecki, Ann Schumar, Seth Holton, Nic Lannes, Nick Rudell, Dan Klimas, Kevin Greene, Anthony Tross and Joe Gorman.



Spark of the Divine

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You know you're a part of something big when CNN picks up your story. What began in bits and pieces on a basement floor – tubing, tape, even rubber gloves – evolved into an invention that has captured national attention; and earned the heartfelt gratitude of a Grand Rapids religion teacher.

Earlier this year, a group of Grand Rapids Catholic Central High School (CCHS) pre-engineering students, under the guidance of their teacher Jeanine Gasper, invented an assistive prosthetic device for teacher Michael Martin who lost his left hand and part of his arm years ago in a punch-press accident.

“When we began the process, we had several ‘idea groups,’” said Madalyn Esch, a CCHS senior and member of the pre-engineering team, “We had to think of a device that would help someone with a disability – and we all wanted to help someone we knew. That meant a lot to us.”

The device, dubbed the Handy Typer and worn as an extension of Martin’s

left arm, helps him with his typing and can also be used for other jobs requiring pressing of keys.

“I’m in awe of how God worked through these students to help me,” said Martin, who has taught at CCHS for over 20 years. “In a lot of ways, it’s changed my life. And it’s going to change others’.”

Simple in design, and made from just \$20 in materials, the invention took the students all the way to a first place win in the finals of the 2009 Junior Engineering Technical Society (JETS)/ AbilityOne National Engineering Design Challenge (NEDC) in Washington, D.C. The JETS/AbilityOne NEDC encourages teams of high school students to research, design and build a device that will help people with disabilities succeed in the workplace.

“From a faith perspective, helping our teacher (Mr. Martin) was worth it, in and of itself,” said CCHS senior and team member Dan Klimas. “Winning the competition was icing on the cake.”

The team additionally won for “most marketable device”, earning \$3,000 for CCHS’s pre-engineering program and a

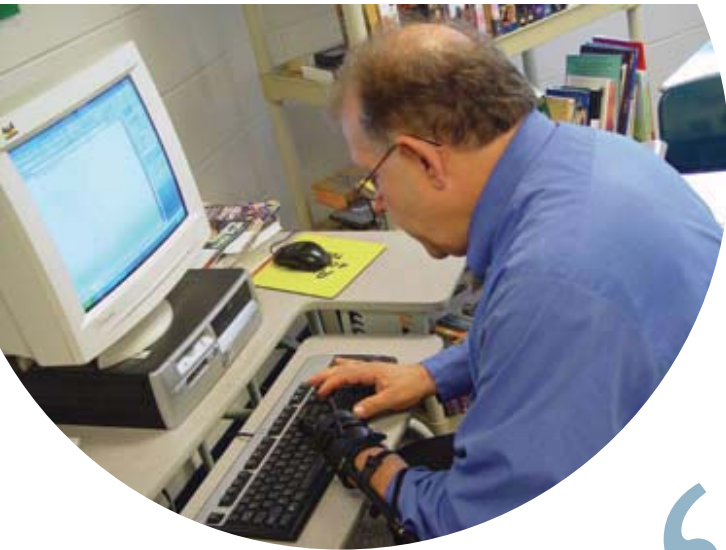
trip to Atlanta, Georgia, in May where they will present at the NISH annual conference. NISH is a national nonprofit agency whose mission is to create employment opportunities for people with severe disabilities.

“We could develop a device for a hypothetical person or an actual person, and we wanted to create something for an actual person. We wanted to immediately be able to help someone,” said Kevin Greene, a senior at CCHS and member of the team.

In addition to Esch, Greene, and Klimas, the national winning team also included fellow CCHS seniors Joe Gorman, Seth Holton, Nic Lannes, Nick Rudell, Ann Schumar, Anthony Tross and Jen Zarzecki. The 10 engineering students in Gasper’s class immediately thought of Mr. Martin – each had been taught religion or history by him at some point during their years at CCHS.

“The students came to my classroom and asked me if I’d like to have a device created that would help with typing, and I thought they were speaking theoretically. So when they came back

>> CCHS teacher Mike Martin uses the Handy Typer.



with a product, I was in shock. They reached into a spark of the divine and created something special,” Martin said.

In the 40 years since his accident, Martin’s right hand has had to do the job of two. Typing up just one test could take an entire evening. And when you’ve been teaching since the 1970s – first at West Catholic High School and then at Catholic Central since 1985 – that’s a lot of late nights. The students custom-designed the Handy Typer to fit securely on Martin’s left arm. Two finger-like prongs extend from the device and enable him to tap the keyboard shift key and space bar.

“I feel like I’ve got my left hand back – and huge chunk of my life back,” he said.

Catholic Central’s school newspaper, the *Blue & White*, first broke the story of the invention and what it meant for Martin – and it snowballed from there: a front-page story in *The Grand Rapids Press*; coverage in local business and community newspapers; news reports and in-studio interviews on West Michigan’s ABC, NBC and CBS affiliates and the local National Public Radio (NPR) radio station.

The students felt like they hit the big time when CNN picked up the story.

One person who heard about the story was Tom Williams, a local patent attorney and a 1988 Catholic Central graduate. He contacted the school and offered to help with the patent application process which is now underway and takes several



>> The Handy Typer designed by GRCC’s pre-engineering team.

years. If successful, Catholic Central would own its first-ever patent. The media attention also garnered interest from students at Hudsonville High School who want to learn about the device. And two people approached the school about having Handy Typers custom-made for them. The students plan to demonstrate the device at this spring’s West Michigan Science & Technology Initiative expo as well as at the conference in May.

“This is an example of how a single act of kindness has the potential to change the world,” Martin said.

It’s also brought people together. Martin has received letters and emails and even phone calls from students going back to the 1970s and 1980s who saw him on the news.

Jeanine Gasper’s engineering team has grown together through this whole process.

“I feel like I’ve got my left hand back – and huge chunk of my life back.”

“The students have developed a growing understanding and empathy for those with disabilities. They have also grown in terms of working with each other and their own differing personalities,” Gasper said. “The project not only gave

them a chance to look outside themselves and help someone, but also to look beyond themselves when working with others. They really honed in on each other’s strengths to make the project work.”

An engineer herself, Gasper started teaching at Catholic Central four years ago, helping the school to launch its first-ever engineering class now in only its second year. Last year’s class made it to the JETS semi-finals and three years ago Catholic Central sent its first engineering team to the finals. At that time the group was simply a student-led club with an interest in engineering.

No pressure on next year’s class, right? – which is already at capacity with more than 20 students registered.

“The interest in the class has become huge!” Gasper said.

Martin offered a suggestion for next year’s team: “Design an automatic back-scratcher,” he quipped. “That’s something everyone can use!”

Kidding aside, he praises the gift he has received – a gift he believes was inspired by the Holy Spirit.

“It’s more than the device. It’s the bond that it has created between me and these students,” he said. “No matter where they go in life, I’ll be with them, and they’ll be with me.” ☺



>> CCHS pre-engineering students pictured with teachers Jeanine Gasper (back row center) and Mike Martin (seated).

>> To watch a video of the CCHS pre-engineering students’ development of the Handy Typer, and see and hear Mike Martin’s comments, go to vimeo.com/2786702