This 'Black Swan' Soars Way Above Expectations

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Christopher C. Wells received his doctorate in inorganic and physical chemistry May 14th from the University at Albany in New York State. While completing a Ph.D. is quite an accomplishment for anyone, it should be noted that Wells is legally blind and profoundly deaf. At his graduation, the 32-year-old also received the 2011 Distinguished Doctoral Dissertation Award, an accolade for the best dissertation in any field in the College of Arts and Sciences.

"Most of the time I find things easy to overcome, but I spend a lot of time reaching out to people," said Wells, interviewed recently at his home in Lake George, N.Y., with his godmother Pat Thompson interpreting and his mom, Eileen, and brother Bobby nearby. "I think most people could work beyond their limits if they tried. I took three years of Spanish, and I did great."

His appetite for learning is huge. He's teaching himself Japanese, Swahili and Polish, and he likes to try to communicate with people on the computer in those languages, though the keyboards don't always have the right characters.

Wells was born two months premature; at birth, he weighed 2 pounds and was deaf. He had bleeding in the brain when he was a baby, which damaged some of his cranial nerves. As a result, it is difficult for him to swallow food, and he cannot breathe very deeply. He has cerebral palsy, which slightly limits his range of motion and affects his balance.

Despite that, he swims and works out regularly and plays basketball, billiards and bowling. He has a shelf of bowling trophies in his room, along with much larger collections of rocks and Transformer toys. All of those, though, are outnumbered by his book collection, which includes plenty of physics, chemistry and philosophy titles, along with novels.

Among his favorite books are Ralph Ellison's "Invisible Man" and anything by Ralph Waldo Emerson. Another writer he admires is bell hooks (Gloria Watson), especially her book "Killing Race: Ending Racism in America."

"I'm really into learning about black culture and how they overcame things," Wells said. He sees the discrimination against African Americans as paralleling the prejudice leveled against people who live with disabilities.

On the birthday of Dr. Martin Luther King Jr. this year, he posted a long note on his Facebook page about the civil rights leader's legacy.

"Genetically, we are too similar to be different," he wrote. "Any two humans among the nearly 7 billion living on Earth share over 99.9

percent of their genetic information. We must apply this information as our defense against discrimination and keep King's legacy alive!”

In March of this year, Wells flew to Texas to present a paper on the energy states in graphene at the American Physics Society. He was the first deaf-blind doctoral student to present research at this annual meeting. Graphene became the focus of his work after a three-month internship at NASA in 2007.

“My research is about enabling electronics to be improved with a pure-carbon material that is 1 atom thick,” he wrote in a reporter’s notebook. “My work has identified ways in which this material (graphene) can be controlled for electronics. This piece of pencil lead has energy states that remain the same in energy and my research hopes to find gentle ways to make these states differ in energy and describe these conditions for future device designs incorporating graphene.”

At some point, Wells said, he plans to write for scientific journals and work more with Dr. Lawrence Snyder at the University at Albany. He’s also looking for computational chemistry work. If he can find a location he likes, he will consider moving. Otherwise, he will stay local.

Wells lived with his family throughout his undergraduate work at Siena College in Loudonville, N.Y., and the nine years he was at Albany. Initially, he planned to get only a master’s degree, but after a year, his advisers suggested he skip that and go straight for the Ph.D.
His family members, who have a strong knowledge of services for the developmentally disabled, have navigated the logistics of his schooling.

Eileen Wells became his foster parent when he was 4, and she adopted him when he was 7. This is the 40th year she has worked for Prospect Child and Family Center, which serves several counties in the lower Adirondack region. Pat Thompson has been with the center for 30 years.

Chris Wells read large-type books throughout high school but switched to normal-sized type before college, a decision that allowed him access to the specialized texts necessary for his studies.

His mother advocated for him on numerous occasions throughout his education. Once, when he was in the seventh grade, she enlisted the

services of a lawyer when SAT moderators wanted him to take the tests in a separate room. (The tests were administered by the Johns Hopkins Center for Talented Youth.)

Normally, his grades would have been marked nonstandard because of the accommodation, but Eileen Wells' perseverance resulted in a precedent-setting victory: now, the visually impaired can be in the same room as other test takers. She also fought for her son to read his Spanish Regents and answer in sign language. That battle was won, too.

Chris Wells taught his brother sign language when the latter joined the family 11 years ago. Bobby, who graduated from high school earlier this year, considers his big brother his role model.

Chris Wells' graduation sparked articles in local newspapers. In one of the stories, he advised people to turn disabilities into abilities. He was asked how he did that.
"It was easy -- like alchemy. That was the old science, before chemistry. If you think you can change something, you can. People tend to think that disabilities are a burden, but I never think down; I think up. It's figuring out how to use what you have, how to use it to work with what you don't have. Think about silence -- being in silence all day long, being able to focus. It's not a bad thing."

That focus has served him well. Though her son was sickly as a child, once his health stabilized, he learned quickly, picking up 100 signs in a weekend, Eileen Wells recalled.

"In grade school I loved math, and I had many other interests," he said.

"Then science came, and I could visualize the movements and molecules in my head. Chemistry was my main love. I started reading books about atoms and power and realized I could do well in chemistry. I loved chemistry. I loved physics.

"I had an interpreter in elementary and high school. Students would take notes for me in high school and in college. Some typed, but most of them wrote. I could read most of them enlarged."

In college, many of the notes “had to be finger spelled because of the letters in chemistry,” said Wells, who noted that his interpreter in graduate school understood his research and work. Sometimes, he said, he felt like her teacher, but that was an asset. “Teaching helps you to learn. To explain things, you also improve the ability to learn from that person.”

Technology plays a big role in Wells’ research and in his daily life.

“I would use (computer) modeling programs when I was younger, so in college everyone wanted me in their group. I use a lot of different interfaces. I have a lot of different scientific programs on my computer, for my research. Things that people do in labs I can show much more quickly by using quantum chemistry software. I can work it up on the computer and show them 3D.”

He uses a program called WordPad on his iPhone to communicate with people, such as store clerks and people who don’t sign.

Of meeting people through technological outlets, he wrote, “My disabilities are well-hidden, eclipsed by my abilities, so well-hidden that people never recognize that I am deaf or visually impaired when they first encounter me.” Texting, he noted, cannot distinguish between people who hear and people who are deaf.

When asked what he might say to the disability community, he wrote: “Never let what society uses to define what a person can do or cannot do deter you from consideration of unprecedented acts by individuals that seem at first glance unlikely to be capable (of doing them). Let the ‘black swans’ speak for themselves and redefine what capability in society really means. Black swan is something that’s very improbable and no one thinks exists, but it can. I am. I’m like a black swan.”
Amy Halloran, a writer, lives in upstate New York with her sons and husband.