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Tyler Gray, a Northeast Kingdom teenager often called a genius by family and teachers, is leaving the family farm and heading to MIT in the fall. EMILY MCMANAMY/FREE PRESS

Farmer, student, genius

How a struggling town in the Northeast Kingdom cultivated the talents of its brightest son



VERMONT LIVES



DAVID GOODMAN
Free Press Correspondent

"If a chicken and a half lays an egg and a half in a day and a half, how long does it take for one chicken to lay one egg?"

Canaan Memorial High School valedictorian Tyler Gray peered out from beneath his mortarboard with a mischievous smile and a twinkle in his eye. He surveyed the audience to see if anyone had the answer. Seeing no hands go up, Tyler started to walk off the stage as if he were an impatient teacher. There was an uncomfortable silence, then laughter as he turned around and returned to the microphone to continue his valedictory address.

"They knew I would ask a math question," he recounts with a chuckle as we sit around the kitchen table of his family's farm house.

The residents of Vermont's northeastern-most town have become accustomed to the quiet humor and extraordinary accomplishments of this self-effacing 18-year-old farm boy. To his family and neighbors, he's a kind young man, the son of fourth-generation Vermont farmers who rises at 6 a.m. every day to help his disabled father on the family's beef cattle farm before going to school.

To the outside world, a different word keeps popping up when Tyler Gray's name is mentioned. "He's a genius," says Chris Danforth, associate professor of math

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Lynne, Tyler and David Gray on their family farm in Canaan. DAVID GOODMAN/FOR THE FREE PRESS

Genius

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at UVM.

Farmer. Soccer and basketball team captain. Expert woodsman. Math genius. I made the long journey to Canaan to meet this remarkable homegrown young talent. Three hours after leaving my home in Waterbury, I arrive in Canaan, one of Vermont's smallest and most remote towns, a place where French and English are still interchangeable in conversation.

"John Deere parking only" announces a green sign hanging on the side of the Gray home. As I approach the two-story clapboard house, a trim, handsome man with an angular jaw and weathered skin pulls up on a tractor. He climbs down, grabs a cane, and walks slowly and with a pronounced limp toward me. He wears a plastic back brace that extends from his chest to his waist. David Gray, Tyler's father, grips my hand tightly in greeting, and welcomes me to his home.

A young man dressed in a gray baseball T-shirt and worn blue work pants bounds over. Tyler's face, framed by a shock of short blonde hair, is a rosy red from working long days in the sun. I apologize for interrupting the family's haying schedule. Tyler laughs and reassures me that it's OK — but he can only spend a few hours with me before he has to get back to haying.

Tyler, his mother Lynne and father David join me around the kitchen table in the house that David built 30 years ago. That was before the accident that changed the life of this family, which includes Tyler and his three older siblings. David explains that a few months before Tyler was

born, he ruptured a disc in his back while trying to lift a cow. The injury damaged nerves and limits his ability to lift. In the course of our conversation, David frequently has to stand up and move around. He doesn't complain, but Lynne says, "He's in constant pain."

From a young age, Tyler's life revolved around two seemingly unrelated things: farm work and math. Tyler's brother Timothy, who is 10 years older, was a math major at Norwich University. Tim began teaching Tyler multiplication and division in kindergarten. By the time he was in middle school, Tyler would race his older brother to see who could finish Tim's college math assignments faster. By seventh grade, Tyler was winning.

Like many gifted students, Tyler sometimes struggled in school. "I had been pretty bored since fourth grade. I got stuck doing the same math as everyone else in Canaan Elementary School. In seventh grade, I stopped paying attention and played games on my calculator." His teacher finally suggested that Tyler go across the hall and take a ninth-grade algebra class.

It was like letting the horse out of the barn: from that moment, Tyler took off in a mad intellectual dash. By ninth grade, Tyler completed physics, and a year later, he polished off advanced calculus — the highest science and math courses offered at Canaan Memorial High School.

Canaan now had a problem: what to do with Tyler Gray?

Hard times in a small town

Canaan has taken some hard hits. The Essex County town of 972 people shares a border with both Quebec and New Hampshire. One of the largest employers in the

area was the furniture maker Ethan Allen. In 2009, the company closed its Canaan manufacturing plant, laying off 238 people. Lynne Gray works at Hallmark card and gift store in nearby Colebrook, N.H., but her hours have been reduced due to the poor economy. Gains made elsewhere in the state seem to die out before penetrating this hardscrabble region: Between 2000 and 2009, non-farm employment in Vermont rose 4 percent, but in Essex County it fell a staggering 42 percent. One in eight families in Essex County live below the poverty line — the highest poverty rate in the state — and the county's 7.4 percent unemployment rate was second highest in the state in 2011 (only neighboring Orleans County was higher).

Canaan's schools have reflected these tough realities. Nearly half the students receive free and reduced lunch. "There is a lot of stress and anxiety among the students and families," says Canaan's K-12 guidance counselor, Lisa Becker. She notes that there has been an increased demand among students for counseling, and that there have been a rising number of neglect and abuse investigations by state child welfare authorities.

Canaan's school population is declining — there were just nine kindergarten students this year — to the point that the community is actively exploring consolidating its schools with four neighboring New Hampshire towns. It is likely that Canaan Memorial High School will no longer exist by the time Tyler finishes college.

Canaan's teachers have pointed to these sobering realities to implore their students to attend college. "I meet with classes and tell them that the option of going to the factory is gone," Becker says. "You need a post-high school diploma to be employable. It is a strong school-wide

message."

The message has gotten through: in the last three years, 80 percent of Canaan's high school graduates have attended college, compared to a statewide average of 61 percent.

I can't help but feel that the school leaders are like the captain on a sinking ship urging passengers to don their life vests. Principal Deborah Evans concedes, "Most students think of getting their college degree but not coming back to Canaan."

Nurturing a talent

Jim Grittner is a big man with a baritone voice who speaks with passion about his calling as a math teacher at Canaan Memorial High School. As the teacher and I talk in the back of his class, Tyler quietly takes over tutoring the small group of students. Grittner declares, "We believe that just because we are remote doesn't mean we shouldn't be giving our kids the same opportunities that they would get anywhere else. We have good students who deserve the best."

Finding the best for Tyler Gray was going to require creativity from his teachers and commitment by the whole town. Tyler's family could not afford the fees or travel for high-priced college courses. That was no deterrent, Grittner tells me. "We just looked under every rock and when we found something, we took it."

The Canaan School Board provided funds for Tyler to take online courses at the University of Wisconsin. Mr. Grittner enrolled himself, Tyler and another student in an upper level math course at Lyndon State College and drove the boys sev-

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Tyler Gray in front of Canaan Memorial High School. DAVID GOODMAN/FOR THE FREE PRESS

eral hours each week to attend; the Vermont Student Assistance Corporation (VSAC) helped pay for Tyler to take the class, as well as several other classes at UVM.

At the end of the Lyndon State course, Grittner had the second-best grades in the class. "I make no bones about the fact that he's a better mathematician than I am," Grittner tells me, smiling like a proud mentor. "Coming in second to Tyler — that's still pretty good."

Tyler attended the Governor's Institute of Vermont summer program in math at the University of Vermont following his freshman year. That's where he met UVM math Professor Chris Danforth, who — along with Grittner and his older brother, Tim, now a math teacher in Canaan — would become a mentor to him. I ask Danforth what he means when he calls Tyler a genius.

"I mean somebody who understands complicated ideas the first time you offer them to them with little background explanation. In math," he continues, "there comes a point for just about everybody where you meet a wall and there's a concept where it's difficult for you to understand. Tyler has not met that challenge yet."

Tyler is embarrassed by the "genius" talk. "I work hard, that's all," he tells me shyly as we stand in the hallway of his high school.

Tyler has been taking Danforth's UVM math classes via Skype. The high school student has the highest grades in the college class — and he's never stepped inside the classroom.

Tyler's accomplishments have been numerous. He was a key part of a Vermont state math team that competed in a national competition at Penn State and came in 10th in the nation. He has delivered a paper of his own original research to a conference of mathematicians, and is now part of a graduate research team at UVM, led by professor Danforth, that is measuring human happiness based on Twitter posts.

"You always wonder coming from a small town, is he really this smart, or is it just too easy?" says his mother Lynne.

"But when he gets 105 in college courses," interjects his dad, "you figure he'll do OK."

Realizing a dream

It was a cold day in December when Tyler turned on his home computer with its slow dial-up Internet connection to find the email from the Massachusetts Institute of Technology. A broad smile crossed his face, but he kept quiet and printed out the formal letter that was attached.

Lynne Gray knew something was up as she watched her son walk across the kitchen and stick a letter on the fridge, alongside his school portraits and store coupons. She ran over to read the letter.

"Congratulations on being accepted to the MIT Class of 2016," it began. Tears welled in her eyes.

I ask Lynne why she and her husband, neither of whom attended college, were so intent on having Tyler and their other children pursue a college education. "It's because we didn't get to go to college," she replies, "that I wanted them to have that chance."

Tyler's receiving a full scholarship to MIT. A journey that began in a northern Vermont hayfield will now continue in the classrooms of one of the world's elite universities.

"Before, I had to spread out and find learning opportunities all over the state," Tyler tells me. "Now finally there will be so many opportunities for me right there." Tyler hopes to major in math and physics, and one day be a college professor doing research. "But I also want to have a small farm. I love being on a farm and think I would miss it," he says earnestly.

I ask Tyler and his parents what will happen on the family farm when he goes to college.

There is a brief silence. Dave says softly, "He's my right hand," but adds that he is excited for his youngest son to spread his wings. He says he will sell off much of his cattle herd since he can't manage it by himself, and will maintain a smaller beef cow farm. "I'll be back in the summer to do the haying," Tyler reassures his father.

At graduation, Tyler Gray peered out in the school gym and looked directly at the neighbors, teachers and family members who had helped him along the way. "What these people have done for us is far above the poor power of words to properly thank," he said.

"People measure success in different ways," he con-

tinued. "For some, it is having a ton of money and a nice car. For me, success is being happy. If you are truly happy with your life, then you are successful."

The farmer, friend, athlete and whiz kid wasn't quite finished. "By the way," he said, flashing his boyish grin before leaving the podium, "the answer to the math problem is a day and a half."

David Goodman's Vermont Lives column publishes every other Saturday in 'Round Here. Goodman is a writer from Waterbury.

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