

## The Amazing Miss Miranda: Our Beloved Substitute

By Katia Campos

Make way Spider Man, there's a new hero in town! This hero is faster than the speed of light, and mightier than a machine. Who is this, you ask? A bird? A plane? No! It's Miss Miranda, an amazing educator who substitutes for a plethora of teachers here in the FCS Upper School. She has been with us through thick and thin, and we all want to thank her in a special way.

*Focus* reporters interviewed Miss Miranda to get a little view of her world. "I studied Speech and Hearing Science at Temple University before subbing at FCS, and now I teach here and all across the Philadelphia School District as a substitute," she shared. When asked if she always had the sense that teaching was going to be her job, she replied, "In a way, I always knew that I wanted to have a profession that served young people, and I remembered all of the outstanding (and not-so-outstanding) teachers I had throughout my education. I know it might be a little corny, but I often think of the statement, 'Be the person you needed when you were younger.'" This delightful quote is a perfect reminder for everyone. When you see someone who is asking for help, Miss Miranda says to think about yourself in that situation and try to help him or her. She certainly models that heroic behavior each and every day.

Some of Miss Miranda's favorite moments of teaching occur when she sees that little light bulb go off in a student's head. "[I love] when they have that 'A-ha!' moment after they understand a new or difficult concept. Learning new things is not always easy, but for what it's worth, it was worth the struggle." Miss Miranda never wants to offend classroom teachers, but did admit that she "loves hearing students say 'YES!' after finding out they have a substitute for a day." *Yes* indeed, Miss Miranda, we love it when you sub for our classes.



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Important Message  
From Editor  
(Back Cover)

Reporters asked Miss Miranda what classes she enjoys subbing for the most. She explained, "I really enjoy subbing for History and Foreign Language classes because they are my favorite subjects! [In subjects such as] mathematics, I am always interested in subbing because they are always rewarding for me. I enjoy watching students solve problems and even teach me a few new things as well."

*'Miranda' COTD. on page 8*

## Designer Babies: The Future of Humanity? What FCS Thinks...

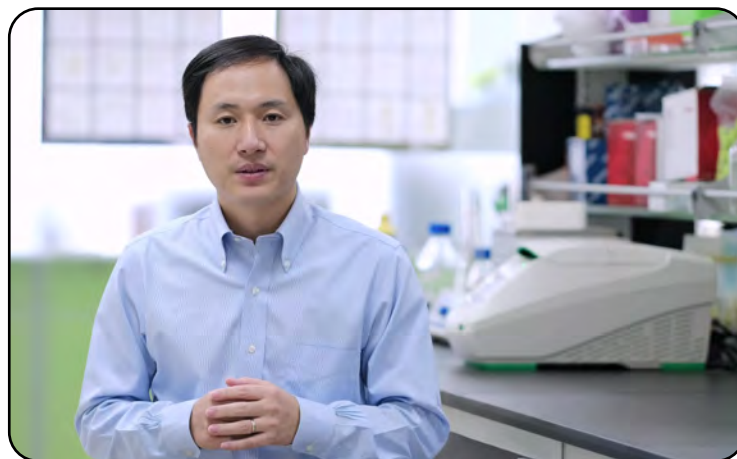
By Vicky Liu '20, and Julian Duvivier '22

Imagine the ability to completely eradicate a disease plaguing humanity. This disease is not bacterial and cured through vaccination; that is the feat of an earlier era. Instead, the disease is one prevented at birth through a small, insignificant change that preemptively stops it from ever taking hold. Now, imagine a child born with a brittle and weak skeleton, always hurting because of uncontrolled physical deformities. I am sure we would all wish that the child's condition were to never exist. Finally, imagine a child cursed with a blood disease that causes a constant and lifelong pain. The doctors predict it and offer to cure it many months before the child would see the light of day. The parents happily accept, but make one request. "Wouldn't it be wonderful," they say, "if our child had brilliant sea-green eyes?"

This is where CRISPR comes in. CRISPR is a

gene-editing tool, invented in the mid-2000s. It was an incredible step in biological engineering and medicine. As science continued to tap into its possibilities, a new host of applications in the field of genetics emerged. Chief among these was the newfound ability for humans to alter DNA in ways that would fundamentally change the human genome. This has opened up a slew of questions about how we utilize our newfound abilities and about the discovery's scientific and ethical ramifications. While many consider CRISPR an incredible step in medical technology, many also urge caution, often in fear of consequences or the creation of "designer babies" edited to fit a very specific definition for humanity. For the most part this has been entirely baseless speculation, at least up until recently.

In November, Dr. He



Jiankui, a Chinese Scientist located in Shenzhen, claimed to have altered the DNA of human embryos, resulting in the births of genetically modified twins with the pseudonyms Nana and Lulu. This has begun a similar controversy around the limitation and regulation of the technology. In many respects, He Jiankui's process was thorough and scientifically rigorous. In the early embryonic state, he altered the gene CCR5 to give the children HIV immunity. CCR5 is a good choice as the first modification because it has been researched quite extensively and its alteration shows no negative effects. The trouble, however, is severe: He Jiankui did not have his experiment reviewed by the scientific community beforehand and failed to be transparent in the specifics of his process. Put simply,

his actions were a *major* violation of scientific conduct.

He Jiankui's experiment has drawn the disapproval of many in the scientific community and in the public at large. Many esteemed experts have questioned his integrity, including the biologist and former president of Caltech, David Baltimore. Baltimore said at the recent Hong Kong genetics summit that he "thinks there has been a failure of self-regulation by the scientific community due to a lack of transparency." While He Jiankui has presented his work as life changing and virtuous, many people following the events have questioned whether the process was premature and medically necessary.

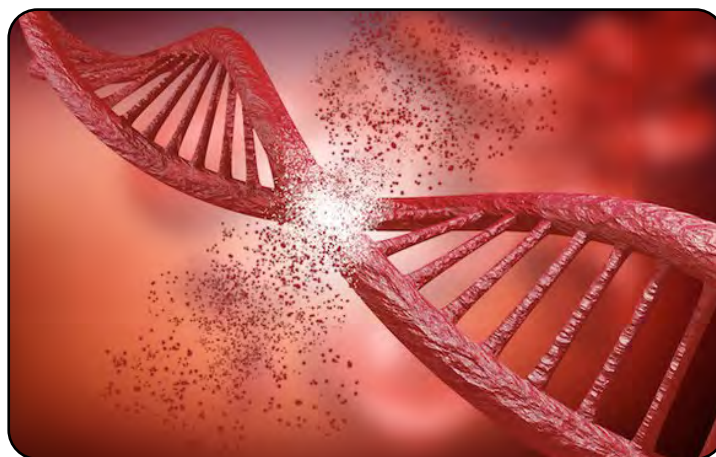
From another perspective, our resident biologist, Dr. Sonia Chin, shares her insight on He Jiankui's research: "This kind of

**'CRISPR' COT'D. from  
previous page**

human application is very premature.” She explains, “The scientific community has only begun manipulating and adapting the CRISPR system for use outside of its native bacteria since about 2012. In scientific time, six years is not very long, so right now we do not have a comprehensive understanding of potentially very severe, off-target effects that might occur in an organism modified using this tool.” She elaborates upon another severe long-term problem raised by He Jiankui’s research: “From a population biology standpoint, CRISPR might induce unintended mutations that could drastically decrease a person’s quality of life that now can be passed down for generations and could potentially spread at a population level.” The gene-editing took place in the embryos’ germ cells, rather than in the somatic cells, making the changes inheritable through generations. Given the potential to drive human evolution and the associated risks, Dr. Chin

feels that it quickly becomes complicated to talk about the rights of people with altered genes to give birth.

Jim Rosengarten, our history department chair, contributed to the discussion from an ethics and philosophy standpoint. As he sees it, the invention of a new technology is followed by new scientific avenues and applications,



many of which will be dangerous if used improperly. Mr. Rosengarten relates this to Pandora’s Box, as once new knowledge comes to light it is “hard to take away the knowledge.”

Jim values the freedom of the human mind to explore the world without repression, expressing that, “It’s important to allow human beings to use this great gift of a brain that we have. We should be able to think, create, and conquer with total freedom.

Anything that tries to prevent human thought must be cautiously addressed.” However, Jim also considers the idea of “eugenics” and the desire to manipulate genes to create a better human being. He points out that, “[The discovery] starts to lead down the slippery slope of what a good human being is. Is a good

human being with blue eyes and blonde hair?” Mr. Rosengarten definitely hopes that we do not use such a superficial definition and, instead, cautions us to be careful in such matters. Indeed, gene-editing technology stresses us to ruminate on the definition and standards of humanity, in order to avoid the misapplication of the technology which might exacerbate racial inequality.

Although He Jiankui’s

research has the capability to enhance humanity, it is a tremendous violation of scientific procedure and, in the opinion of many, morality. Many have asked who should be the regulator of gene modification. In Jim’s eyes, the answer is clear. “We all should be,” he asserts. These events have shown that, given forethought coupled with transparency, we and the scientific community can, and hopefully will, self-regulate and steer ourselves down a moral path. In many ways, we are in the Golden Age of Biology. As long as we tread with care and curiosity as our guides, we will be on the path to doing something amazing. To quote Dr. Chin, “In the next 10 years, CRISPR will continue to be used as a powerful tool in research to understand the many complex phenomenon in biology and to treat somatic disorders. I hope that in 20 years, we will be approaching this topic with care and some legal regulation to ensure that CRISPR is used responsibly.”



## Artist in Focus:

### The Musical Excellence of Gavin Sultan

By Lucas Chiang '22, Reporter and Webmaster

There is nothing quite like the thrill of a breakthrough performance, and for Gavin Sultan '19, that thrill occurred on the chilly night of December 23 at The Bitter End in Greenwich Village, New York's oldest rock and roll club. Gavin describes that special evening: "It went really great. The draw was 58 people, which I'm ecstatic about. I felt like I was finally able to let myself go and feel the music."

Gavin has been playing music since the age of five. He shares of his first musical experience, "One day... while my sister was taking a piano lesson, I started banging on the piano, being the pest I was. Instead of [her] teacher kicking me out of the room, she brought up the idea of lessons to my parents." After taking introductory piano lessons with that same teacher for five years, he started lessons with a classical piano teacher. Around that time, he also started to learn the guitar. Then, when he was about 13 years



old, he began his production career by learning from Chad Hamilton, his former tennis coach who, coincidentally, was a producer for Jay-Z's Rocafella records, known for producing songs in Young Gunz's debut album, *Tough Luv*. Soon after, Gavin met Mr. Bradley and joined the FCS Jazz Band, eventually growing to be the incredible ensemble leader and guitarist he is today. From his family, jazz band, and Spotify, Gavin has been exposed to a multitude of genres of music. Gavin also notes that Mr. Bradley's African American Music History

class was especially impactful for him.

By being exposed to so many kinds of music, Gavin has acquired tons of role models. From the classical and romantic era, different styles and genres inspire Gavin. He especially appreciates French composers Claude Debussy and Erik Satie. His favorite jazz artists include Ella Fitzgerald, Chet Baker, Grant Green, Grover Washington Jr., and Sun Ra. Some of his pop role models are The Bee Gees and Michael Jackson, and his rock idols

consist of The Rolling Stones, The Doors, and The Beatles. He also loves Stevie Wonder, A Tribe Called Quest, and Badbadnotgood, among others. There are hundreds of other musicians who have also inspired Gavin, yet, this list can't go on forever.

Gavin's hard work and musical training have really paid off. He acknowledges the five-man band with whom he performed in New York as crucial to his successful performance. Gavin expresses, "I felt [unafraid] because of how confident I was in my bandmates. They're all super tight and were able to pick up my arrangements with very little rehearsal time. If I went on that stage alone, it would have been a different story." Gavin met most of his bandmates in a summer program at Berklee College of Music. He first met the bass player, Adrian, at a class. He then met the drummer, Kabir, through an introductory activity. Kabir introduced Gavin to guitarist Alejandro. Adrian

*'Artist' COTD. on following page*

*'Artist' COTD. from previous page.*

and Alejandro are now freshmen studying jazz at the New School in NYC, and Kabir is now at the New England Conservatory. Gavin met Marvin, the saxophonist and Alejandro's friend, right before the performance. They played one song together during sound check and Marvin soon after joined the band for the show.

When I saw a clip of Gavin's performance on his Instagram account (@gavinthesultan), I asked myself, "What can I do to be that good at music?" Gavin was kind enough to provide an answer. Gavin's advice for amateur musicians is to practice. He reveals that if he could do his high school music career differently, he would try to constantly write, produce, and practice music. He wishes that he dedicated more time to his music over the course of these past few years. If you want to become good at something, take Gavin's advice. Although he wishes that he put even more time and effort, Gavin Sultan is a perfect example of the classic phrase "practice makes perfect."

## Athlete in Focus:

### Micah Trusty, Runner Extraordinaire

By Miles Johnson '19,  
Reporter

**M**icah Trusty '22, who is in her first year at Friends' Central School, has already created a name for herself as an up-and-coming runner. Micah is currently on the school's indoor track team and plans to run outdoor track in the spring. Despite Micah's age, she has received a multitude of accolades in just her first year of cross country at FCS. Micah received all Friends' League honors, first team all-state honors, as well as most-improved player on the school team. She has been running since age eight, but didn't start running competitively until she was eleven, for the Infinity Track Club.

From an early age, it's been evident to Micah that she can't succeed

without a solid work ethic and determination. She became interested in track because she wanted to see how far she could go and discover the things of

which she is capable.

When I asked why she is so passionate about the sport, she told me, "I love that track gives me confidence and humility. Running allows me to express myself through my God-given gift.

Track has always been my passion. When I was younger I loved to race my classmates. Track

has always made me feel accomplished." Micah elaborated that running gives her a sense of pride of the special gift she has, as well as of the hard work she has devoted. Both of these factors have resulted in her achievements thus far.

Izzy MacFarlane '20, who has been running track at FCS for over half a decade,

and who is now a teammate of Micah's, offered high praise of her fellow runner. Izzy shared, "Micah is like the sweetest girl in the world, first of all. She is so nice and so humble. She is just bursting with talent. She is so talented, and she works so hard. As a runner, when I watch her run, she looks so comfortable. You just want to keep watching her because she is so amazing. She is a great asset to our team, and we are so glad she is with us." Regarding Micah's future, Izzy only offered one comment: "I see big things!"

With the unwavering support of her coaches and teammates, in addition to her incredible talent and commitment, we are sure the future is bright for Micha Trusty.



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## TechFocus

By Jerry Yu '19

*Flash Updates in the Digital World*

Welcome, techies, to this edition of TechFocus. This month, we're going to take a look at some quick things that are taking the technology world by storm.

### 1) The Security of Smart Devices (i.e. Alexa, Google Home, etc.)

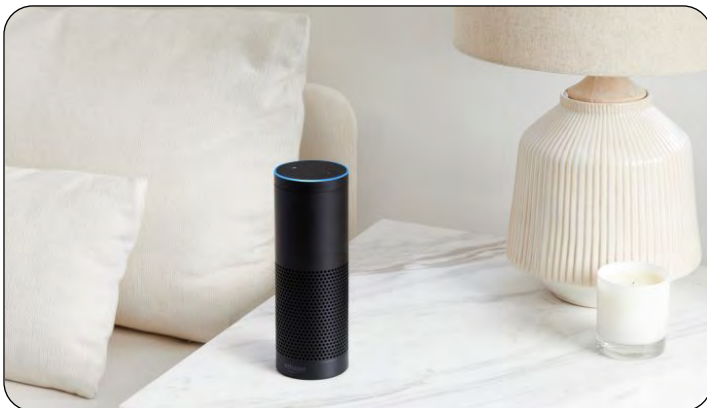
The question of internet privacy has been uppermost in the minds of Americans since the inception of the internet, but this past August, concerns were heightened when a Tencent security team identified and warned Amazon about flaws in Alexa (Amazon's voice-controlled smart home device) that allowed hackers to spy on users. The discovery of this loophole frightened the millions of Americans who have Alexa devices in their homes, as they felt all of the conversations they conducted in the presence of the device were in danger of being hacked. In comes BlackBerry. BlackBerry, a company that is perhaps most well-known for its early smart phones of the early 2000's, is also revered for its privacy. Thank goodness BlackBerry made available its privacy technology to smart home devices, and their new security service will consist of constant self-checking of devices, which will improve consumer privacy. Meanwhile, McAfee and Google partnered to bring a voice-activated internet security toolkit to the Google Home and that allows the user to constantly ask Google about their network safety. Though the scare of the insecurity of Alexa is enough to shake folks up, knowing that these alternatives are available is comforting to those who seek privacy.

### 2) Apple Puts Software on Non-Apple Devices

Apple, a company which has long been notoriously hated for its incompatibility with non-Apple devices (chargers, device accessories, etc) might have softened up on its strict rules on this matter. For example, no other device had access to Apple services like the iOS, iMessages, and iTunes up until this point. However, the Samsung 2019 devices might be Apple's first step towards opening up their software services. Samsung's new line of Smart TVs will feature Airplay 2, the updated version of Apple's remote casting service, which allows users to mirror any and all content from their personal devices directly to the big screen. The new Samsung TV will also be the first non-Apple TV to have a dedicated iTunes store. It is likely that the reason Apple is expanding its software to non-Apple products has something to do with Apple's annual iPhone sales figures, which have decreased.

### 3) Cars With TVs Become More Popular

Smart Cars, vehicles which have "smart" technology built into them (not to be confused with self-driving cars) are gaining popularity. With cars offering a variety of fancy new features such as allowing voice commands via Alexa, there is no denial that in a few years we will look at our current gasoline-powered cars with clumsy infotainment screens and cringe. One of these new smart car models is called Byton. A Hong Kong-based startup, Byton is making what we call "iPhones on wheels," with what they call "AI-powered 5-G smart car." Maybe just playing the buzzwords game, they focused their entire car around the Alexa-enabled display, which is as wide as 7 iPads. Meanwhile, another company, the microprocessor giant Qualcomm, took a different



*"Techie-3" COTD. on Page 8*



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## GamingFocus

*Three Tidbits of Exciting Gaming News*

By Jerry Yu '19

**W**hat do the new trends with CES (Consumer Electronics Show) 2019 have to do with gaming? Let's take a swim in the ocean of possibilities for the PC, mobile, and VR.



### 1) Real-time ray tracing.

This year at CES, NVIDIA officially announced the RTX 2060, a GPU that is designed for a more affordable yet more powerful gaming PC. The NVIDIA DLSS technology, the main focus of the presentation, takes advantage of machine learning to solve the problem of real-time ray tracing. Instead of tracing every ray of light, it learns from a variety of settings and their real-life looks to help predict what the light rays will do. Developers like EA and Netease are jumping onto the DLSS train to make their games look better for players, and this vast superiority in visuals can make PC games attractive again after concerns of growth plateauing due to rising costs.

### 2) Portability

Intel and NVIDIA both are trying to make devices more portable. Intel launched their new Foveros design that allows them to stack what would have taken an entire laptop and end up with an entire motherboard less than 3 square inches. This will make computers much smaller with more room for other functions, potentially enabling significantly more powerful mobile gaming devices running desktop-grade games. Meanwhile, NVIDIA announced their Max-Q design for the RTX series. Max-Q is a compact design of NVIDIA GPUs announced along their GTX 10 series, allowing laptops with NVIDIA graphics to be thinner – or in the case of ASUS, over 50% thinner. There is no longer the need to carry around a bulky laptop larger than a Calculus textbook. In fact, the new Razer Blade laptop is the thickness of a composition book. This means that, along with the introduction of 5G connectivity, PC gaming will be available at more locations and potentially challenge the mobile platform in accessibility.

### 3) Connectivity.

If you have looked at the back of an old-school gaming laptop, you find a messy wall of ports – HDMI, USB, audio jacks, a large power port– as well as many fans. However, LG released a new display that can be connected through USB-C thunderbolt and carried around freely. In 2019, we expect further growth of USB-C Thunderbolt applications, from high-speed external storage to 5K display connectivity. Another application rising through the years is external graphics. A portable low-power laptop can take advantage of the extremely fast data transfer and the fast charging provided by the Thunderbolt ports to turn themselves into a gaming PC. We might see a future where one simple laptop can be transformed into different computer setups by connecting it to various accessories. '

**'Miranda' COTD. from page 1.**

Miss Miranda mentions a quote from a Regina Spektor song that she says helps her get through long, tough days: “‘Love what you have and you’ll have more love.’” A lot of the time, we are searching for something new. Something different. Whether it be from ourselves or others. We tend to forget the many unique and special qualities that make us who we are. I think about this quote when I need to remind myself that I am very fortunate and doing the best I can.”

When Miss Miranda isn't in the schoolroom, she's outside biking or inside playing saxophone.

*Miss Miranda, we are truly lucky to have such a wonderful substitute. You are always so kind and energetic, and many of us FOCUS reporters and staff have experienced that firsthand when you substituted for our classes. Thank you for your time and for all that you teach us!*

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**'Tèchie-3' COTD. from previous page.**

approach. Using their advantages in network technology, they announced the C-V2X (cellular vehicle-to-everything) tests in Las Vegas. They are not making the cars, however – Ford and Audi, extremely competent in the field, are taking on the next-generation vehicles head-on, and have partnered with Qualcomm in this endeavor.

**From The Editor:**

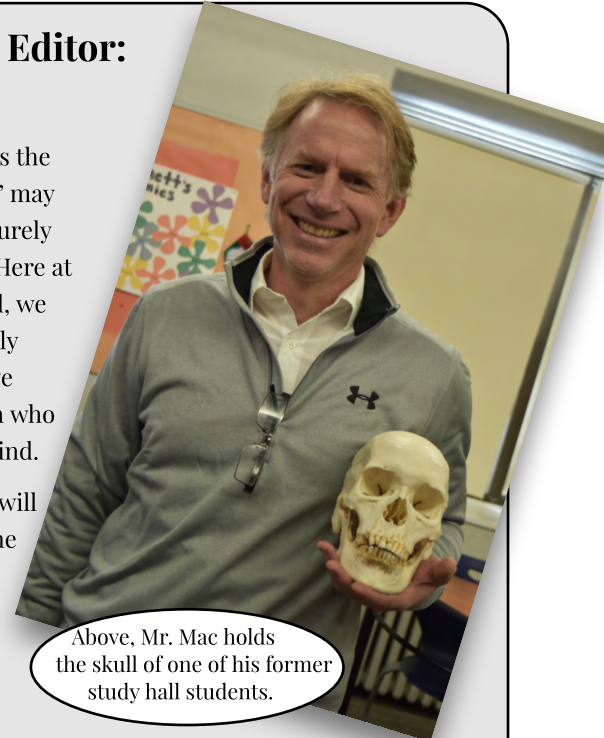
The expression, “kindness makes the world go round” may be aged, but it surely still rings true. Here at Friends' Central, we are tremendously fortunate to have among us a man who is kinder than kind.

Somebody who will drop whatever he may be doing to help somebody else, somebody whose door and mind is

always open for discussion, and somebody who gives everyone a listening ear. This man is Mr. Tom MacFarlane, our esteemed Dean of Students. Though *Focus* is always grateful for Mr. MacFarlane's consistent support of our publication, this past month, his act of generosity was particularly touching. In the midst of a newspaper delivery crisis during which the paper copies of our last issue didn't arrive on campus in time for us to distribute them as scheduled, Mr. MacFarlane, purely out of the goodness of his heart, dropped his loaded agenda of classes and meetings, to endure the half-hour drive from our campus to the UPS Sorting Center to retrieve our package. Just so we could distribute our issue on time. Mr. MacFarlane, we can't thank you enough for this remarkable act, and for the unwavering support you provide us each and every day. We are so deeply appreciative.

**Yours in journalism,**

**Julian Brenman '20, on behalf of the entire *Focus* staff**



Above, Mr. Mac holds the skull of one of his former study hall students.