



The Little Hoya

Reporting "New Prep" news since 1920

Farewell, Mr. Gigot

by Ryan Pang, '25 and Leo Liu, '25

As we head for the end of this school year, we find ourselves on the brink of bidding farewell to Mr. Thomas Gigot, our esteemed math teacher and Math Department Chair, who will be retiring after this year. In a recent interview conducted by Leo Liu, '25, Mr. Gigot shared his reflections on our school and the transition he will soon be making.

Mr. Gigot described Prep as a "wonderful place," emphasizing that what he will miss most are the students. According to Mr. Gigot, his teaching philosophy revolves around the idea that "math trains us to think carefully, clearly, and creatively." His greatest reward comes from watching his "students grow into careful, clear, and creative thinkers."

Beyond his role as Prep's Honors Precalculus teacher, Mr. Gigot serves as the Math Department



Mr. Gigot begins his daily bike ride home for one of the last times as he finishes his 13th year at Prep.

Chair, adding an extra layer of significance to his retirement. The question of who will take up the mantle as the new department chair

remains unanswered, a decision left in the hands of the administration.

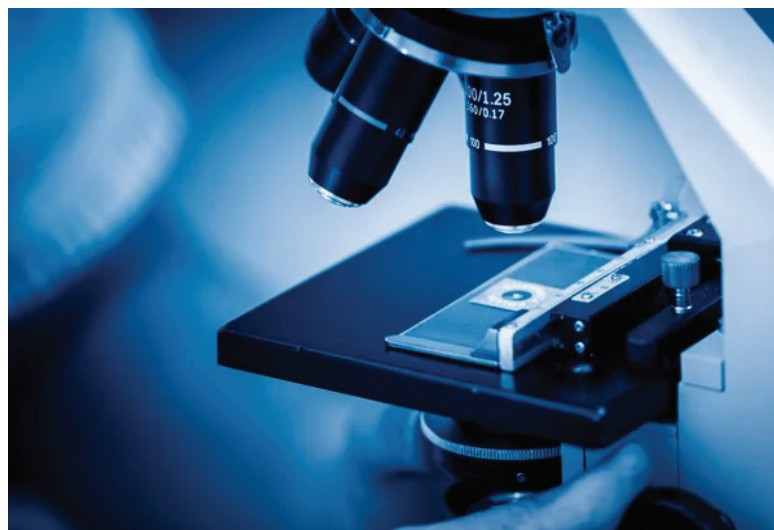
Looking ahead to his retirement, Mr. Gigot first plans to "take a step back and relax." Mr. Gigot arrived at Prep after a long, successful law career in Washington, D.C., and looks forward to retiring completely. We are grateful for the contributions Mr. Gigot has made since joining the Prep community in 2011 and anticipate the coming academic year will be filled with nostalgia as we walk past H202 without seeing Mr. Gigot in front of the board, eager to share his love for math and problem solving with his students. Though it will be difficult to replace Mr. Gigot's presence on campus, we are eager to see the new chapter that awaits the Math Department.

Summer Research Opportunities On Campus

by James Frazier, '25

This summer, Prep has two exciting new opportunities for students interested in STEM. Dr. Chris DeFeo and Dr. Kim Rehwoldt are launching unique summer courses for those interested in taking their love for science to the next level.

Dr. DeFeo's Biomedical and Biotech Enrichment class aims to create a space where you can gain more experience in the lab by performing experiments and completing a research project. In the information session, Dr. DeFeo spoke about his goal for the class to be "fluid and adaptable to what the class enjoys the most." Dr. DeFeo added that this opportunity was a great way to set the groundwork for any published research you are interested in. Although the class encompasses other aspects, its primary focus is



picking, researching, and developing a project around a genetic disease.

Dr. Rehwoldt's Organic Chemistry Inquiry Class also provides stu-

dents the opportunity to further their understanding of chemistry. Prospective student Zach Geoghegan told me that the summer course was "a chance to experience what Organic Chemistry will be like in college." The course is designed for students with experience in chemistry and a desire to pursue a career in the field.

Both classes have planned field trips for unique learning experiences. Dr. Rehwoldt has connected with the University of Maryland and has secured multiple excursions to interact with, learn from, and tour their lab facilities. Dr. DeFeo also spoke about his desire to take the class outside of the classroom for lab opportunities.

If you have any questions, don't hesitate to contact Dr. DeFeo or Dr. Rehwoldt.

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A Letter From the Interim Editors-in-Chief

Dear Prep,

As the spring unfolds, we enter a new season at Prep: a season of change. Buds give way to leaves, the days grow longer and warmer, and the end of the school year draws closer. Over the course of the next few weeks, the Prep community will undergo profound alterations. Mr. Gigot, the esteemed Math Department Chair, will retire after 13 years at Prep. Juniors look into their summer plans, exploring research opportunities with Dr. Rehwooldt and Dr. Defeo. Seniors try on their white tuxedos and polish their sunglasses to hide the tears of joy and sadness that come with the culmination of 4 years at Prep.

Change should bring reflection. As the seniors leave, their achievements will be engraved into the halls where the incoming freshmen will walk. Listen to Mr. Graham discuss the new members of the Prep community. George Murphy, '24, Alex Murphy-Glidden, '25, and John Hessick, '25, highlight the closing of the Hockey and Rugby Seasons. Although we say it with a heavy heart, we must understand that while time may change us, we can't trace time.

Hoya Saxa,

Connor Manrique-Johnson and Joseph Yung
Interim Editors-in-Chief



Connor Manrique-Johnson, '25
Interim Editor



Joseph Yung, '25
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Prep Life

Hoyas Hockey Playoff Run

by George Murphy, '25

At the end of every season, Prep's hockey team competes in the Mid-Atlantic Prep Hockey League Playoffs (MAPHLs). This year, our team had been stretched thin, with five sustained injuries before entering their playoff run. The playoffs would be an uphill battle, but the Hoyas never go down without a fight.

On February 20, the Hoyas faced

Rowan Healy, '24. The Hoyas marched out of the Rockville Ice Arena victoriously, winning 6-2 over DeMatha.

In the next game, we faced our biggest rival. The matchup against the Landon Bears was slow with Grayson Felizzi, '27 scoring Prep's only goal during regulation. In the third period, Landon matched it, sending the game to overtime. Though both

In the semifinals, the Hoyas played against the Saint John's Cadets. The Cadets led the MAPHL rankings all regular season, so this game would prove to be their hardest yet. Unfortunately, the game started with four unanswered Cadet goals until Andrew Chaconas, '24 put one away unassisted. The Hoyas, led by seniors Austin



the DeMatha Stags in the AA Play-In round. In the first period, four different Prep players scored: Tyler Butler, '26; Alex Markva, '25; Connor McCarthy, '24; and Austin Markva, '24. Thanks to brick-wall goalie Billy Bass, '25, the second quarter went scoreless. DeMatha attempted to rally with a goal in the third period, but the Stags' momentum was quickly shut down by goals from Andrew Chaconas, '24 and

teams played ferociously, the game came down to the difference in the caliber of the two goalies. "Brick-wall Bass" dealt with 31 shots on goal but managed to hold Landon to one goal. Bass held down the fort in shootouts and stopped every single shot from the Bears. However, the goalie for the Bears couldn't stop Tyler Butler, '26 from finding the net in shootouts. The Hoyas' playoff run continued.

Markva, Luca Nascone, Rowan Healy, and Andrew Chaconas, fought valiantly—Andrew Chaconas was even ejected from the game after a major collision against the boards in the third period—but Billy Bass was overwhelmed by the 42 shots on goal. The Hoyas' playoff run ended in a crushing 5-to-1 defeat at The Gardens Ice House.

Prep Life

Mr. Graham Gives Class of 2028 Overview

by *Timmy Overcash, '25 & Tommy Brault, '25*

Do you remember where you were when you opened your admissions decision from Prep? Or how you reacted seeing the acceptance letter? On February 20th, prospective Prep students received their decision letters, and many students found out they were accepted into Georgetown Prep. Prep officially welcomed these new stu-

Prep for many prospective students, played a key role in organizing this event, so we reached out to him to discuss the event and the broader topic of the admissions process this year.

Mr. Graham said “two-thirds” of those who attended Accepted Students Night know they will enroll in Prep's Class of 2028 in the fall. “But

classrooms comfortable, welcoming, and immersive to prospective students.

Mr. Graham's personal favorite part of the entire process is the interview because it allows him to “get to know the families and students.” He also enjoys the day they send out decisions. “The immediate feedback is always exciting”



dents and their parents on Tuesday, February 27, during Accepted Students Night. After first meeting in the chapel, eighth graders and their parents separated. Parents walked over to the library for a reception while accepted students mingled in the George Cafe with coaches, teachers, and current students. From there, they migrated to the stadium where Spikeball nets and footballs awaited them.

Although the field games were the highlight of the night for many of the incoming students, the event also featured talks in the Chapel given by members of Prep's administration to help the parents understand Prep better. Mr. Graham, Prep's Director of Admissions and the face of

for the final third,” he added, “it's an opportunity to see your classmates, see who will be your best friends for life, talk to coaches and teachers, and learn what a warm, loving place this is.” Thus, Accepted Students Night serves a vital role in convincing those on the fence to say yes to Prep.

Mr. Graham also highlighted the importance of Hoya for a Day, which he deems as “100 percent” the biggest pull factor for prospective students in the admissions process. According to him, this process of getting “thrown in the mix” of a school day allows students to view the “strong teacher-student relationships” formed at Prep. “Hats off to the faculty,” Mr. Graham said, especially proud of teachers' work to make their

said Mr. Graham.

We concluded our conversation by asking about his expectations for the incoming Class of 2028. “Keep it rollin' 'round here,” Mr. Graham remarked. “When you look around, [there are] guys that want to work hard in the classroom, guys that work hard in clubs and athletics; the play last week was over the top.” Mr. Graham believes this attitude of hard work and close friendships makes Prep the school it is. Next fall, the Class of 2028 will step onto campus, ready to open the next chapter of this brotherhood and leave its mark on Prep's history.

Prep Rugby Update

by *Alex Murphy-Glidden, '25 & John Hessick, '25*

Last year, Georgetown Prep's rugby team ended their season ranked sixth in the country, an impressive statistic, but Prep players and coaches hope to finish this season ranked even higher. They have strengthened their already competitive schedule, playing in a conference of top ranked teams including Rye from New York, Saint Ignatius from Ohio, Staples from Connecticut, and rival Gonzaga. To take their game to the next level, the team began their practices in November, performing grueling sprints, high intensity weightlifting, technical drills, and competitive scrimmages. The week before the team's first game, players attended a two day rugby mini-camp for four hours each to showcase their abilities with hopes of cementing a spot on one of Prep's three rugby teams: Varsity I, Varsity II, or Junior Varsity.

The first and long awaited matches of the season took place on home turf against Calvert Hall

and St. John's in February. The Varsity I squad played Calvert Hall's Varsity, Junior Varsity played Calvert Hall's Junior Varsity, and Varsity II played St. John's Varsity. Prep's teams dominated in these matchups, winning all three games.



However, the tough battles had yet to come. On March 2, all three of Prep's squads played against

Saint Ignatius's corresponding teams, a school ranked fourth in the country for rugby. Prep lost all three of its matches against them, revealing that there is major room for improvement.

After breaking down film of the games, the team is addressing its weaknesses and preparing for the remainder of its tough matchups. Whether or not the team can implement these changes quick enough to ensure victories in upcoming games is unclear; the only way to find out is to watch a game yourself. However, one thing is certain: Prep will always bring its utmost effort. This will come in the form of making big hits, hawking players down, and recreating Madden truck stick animations. Prep might not have the most skill in its conference this year, but it definitely has the most heart.

Current Events

Hookless Tire's and Thomas De Gendt's Freak Blowout in the Pro Peloton

by Kevin Jin, '24

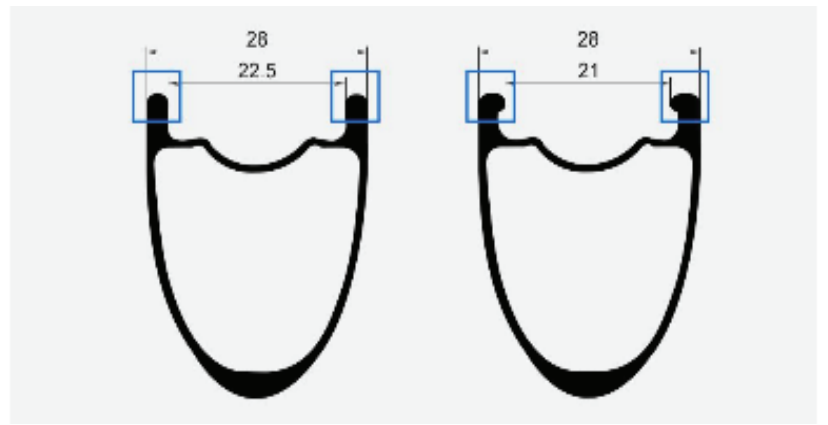
On the fifth stage of the UAE tour, Lotto Dstny rider Thomas De Gendt's front tire blew off his rim. Reports indicate that the blowout occurred due to an incompatibility between the hookless rim design of the Zipp 353NSW wheels and the 28mm wide Vittoria Corsa tires De Gendt was using. This incident caught my attention because I too use hookless Zipp 303S wheels, and the idea of my tires unexpectedly detaching from the rims was troubling to say the least. So I decided to look deeper into the differences between hookless rims and traditional ones.

Hookless rim technology has been in use for several years. Unlike traditional wheels that rely on a hook to secure the tire bead, modern tubeless technology requires only a straight sidewall.

Hookless rims offer numerous advantages. Eliminating the hooked sidewalls reduces manufacturing expenses, enhances wheel durability against impacts, and increases the effective internal width. This allows the tire to sit snugly against the wheel, improving aerodynamics of the overall bike. The adoption of hookless technology has been widespread in the cycling market, with companies such as Enve and Zipp opting to exclusively produce hookless wheels.

Despite these benefits, concerns have risen about the safety and compatibility of hookless

rims with certain tires. Videos circulating on social media depict new tires exploding off the rim immediately after inflation. Manufacturers have responded by providing more conservative specifications for their hookless wheels, such as recommending specific tires for each wheel and lowering the maximum pressure rating to around 70 psi in order to address this issue.



An example of the hookless rim design



Thomas De Gendt's recent accident has drawn attention to the issue of hookless rims. The UCI, the official governing body of cycling, has initiated an investigation into the incident. From De Gendt's incident, a question arises: will hookless wheels shape the future of cycling, or will there be a return to traditional hooked-style wheels?

The History Of Recombinant DNA - The Insulin Race

by Daniel Han, '24

During the 1960s and 1970s, scientists developed methods of creating recombinant DNA, units of genetic information formed from the genes of multiple organisms. When incorporated into a lifeform's genome, it could dictate the production of new macromolecules and the development of new traits. In 1975, venture capitalist Robert Swanson and researcher Herbert Boyer formed the company Genentech to produce synthetic insulin using this burgeoning technology. Their efforts would result in the first medical application of recombinant DNA and revolutionize the production of medical products.

Swanson and Boyer weren't without competition though. At Harvard, future Nobel prize laureate Walter Gilbert led his own team of scientists to synthesize insulin by isolating and cloning the natural gene found in human cells. Attached to a plasmid and shuttled into bacterial cells, the gene could order the production of insulin in bacteria just like in human cells. Boyer's approach was different; rather than purifying the natural gene, he would build one from the ground up. Using the structure of insulin established by Frederick Sanger in 1955 and information on the genetic code from the experiments of Marshall Nirenberg and Philip Leder, Boyer

could construct the gene for insulin by joining individual nucleotides together. This "artificial" approach to synthesizing insulin proved advantageous in the wake of the Asilomar II Conference, which placed restrictions on working with biological DNA in recombination experiments. A chemically synthesized gene fell in the gray zone of regulations and would allow Genentech to "outspeed" its opponent logistically.

bert's lab, however, and Genentech waited anxiously for news of their success as they prepared the gene and injected it into bacteria. After initial failures, with the bacteria redigesting the produced somatostatin, they succeeded in August of 1977 by producing the protein as part of a bacterial protein complex and chemically isolating it afterwards.

A shock came when, in July 1978, Gilbert announced that his team had isolated the human insulin gene and Genentech braced for news of their defeat. However, it turned out the isolated gene was a contaminant and actually coded for rat, not human, insulin. This mistake gave time for Genentech to move onto insulin with the same approach. Unlike somatostatin, insulin was composed of two peptide chains joined together. Genentech synthesized the two strands individually, cleaved off the bacterial complexes, and joined the two strands to finally produce the prized hormone on



Rather than attempting to use insulin directly, Boyer decided on the hormone somatostatin as a first trial with this approach. Although its medical value was minuscule compared to insulin, somatostatin comprised only 14 amino acids to insulin's 51 and would be much easier to recreate genetically. This meant giving up time to Gil-

the night of August 21, 1978. They applied for a patent in the following weeks, received approval from the FDA in October 1982, and partnered with pharmaceutical company Eli Lilly to bring the first synthetic insulin to market in 1983.

Opinion

Ithaca's Forgotten College

by Dean Bernardini, '25

Ithaca College, located in Ithaca, New York, is a private liberal arts college established in 1892 by a young local musician named William Egbert. Ithaca, New York, is in the heart of New York

State's Finger Lakes region, about midway between Manhattan and Toronto, and is surrounded by lush forests, rolling hills, and numerous pristine lakes. It is also home to more well-known Cornell University. Ithaca College is known for

its renowned programs in health sciences, including physical therapy, occupational therapy, speech-language pathology, and athletic training. Also, its specialized programs in communications, performing arts, and health sciences, emphasize a strong liberal arts education, offering a wide range of majors and interdisciplinary studies. Something that makes this college stand out from the rest is its dedication to sustainability initiatives. The college has implemented various sustainability practices, including green building initiatives, renewable energy projects, and waste reduction efforts.



Ithaca College's Campus

ity to plan for the next big idea in campus-wide business competitions, manage real portfolios worth close to \$1,000,000, or launch your own startup with support from local Ithaca entrepreneurs. In the School of Health Sciences and Human Performance, better known on campus as HSHP, you learn skills to help people lead healthy, satisfying, independent, and productive lives. The health sciences-based curriculum, experience in hands-on labs, and practice in on-campus clinics prepare you well for professional roles. Ithaca's Business and Health Sciences and

Human Performance school graduates go on to become leaders and professionals who contribute to their communities. Whether it's through starting businesses, providing healthcare services, or advocating for better policies, these individuals make a positive impact on society.

Ithaca College provides a diverse arrangement of on-campus housing options, spanning from traditional residence halls to suite-style apartments. The halls are supplied with modern amenities such as communal lounges, study spaces, and recreational facilities to create a comfortable and supportive living environment. Through structured programming and community-building initiatives, students have the opportunities to form meaningful connections, cultivate friendships, and hone valuable life skills. Additionally, Ithaca College enriches the residential experience by offering a wide range of student organizations and extracurricular activities, including academic clubs, cultural organizations, recreational sports teams, and performing arts groups, enabling students to pursue their dreams.

How I Overcame Honors Precalculus With Stoicism

by Peter Lin, '26

Earlier this year, I was struggling in some of my classes, especially in Honors Precalculus—every test confusing me more than a 10x10 Rubik's cube. But then I came across stoicism, which helped me live my life more peacefully.

Stoicism is an ancient Greek Philosophy that stresses focusing on the present moment. It was thought of in 300 BCE in Athens by Zeno of Citium (who most certainly did not own a Bugatti). The philosophy flourished in Rome and was embraced by Marcus Aurelius. Aurelius became a stoic and wrote his masterpiece *Meditations* on the ideas he found in stoicism. The stoic belief of “*Memento Mori*” means remembering that you will die; therefore, spending time stressing about past or future events is wasting precious time in your own life. Instead, one should focus on the present moment so they can actually live their life.

Another stoic belief is *Amor Fati* or love of fate. This is the belief that suffering failures is necessary and only once one accepts their failures can they move on from them. After learning about this, I was able to accept my bad grades in Honors Precalculus and have felt less stressed throughout

the week, but especially on E days.

If you want to learn more about this philosophy, you should read works from Epictetus as well as Marcus Aurelius's *Meditations*.



A Statue of Marcus Aurelius

Real or Fake: AI Art

by David Cao, '24

In this edition of “Real or Fake,” I will discuss the merits of AI-generated art and the role it will play in the future of art. Art is one of many industries technology has transformed. Traditionally, all forms of the arts are performed physically through painting on paper. However, with the emergence of computers and the advancement of computer graphics, a new form of art called Digital Art emerged.

Those technologies gave artists more convenient and innovative art creation tools and methods. For example, with popular drawing applications, artists can undo wrong strokes with a click of a button, apply gradients with a slide of a finger, and even generate videos or animations in the blink of an eye.

While drawing applications simplify many complex processes in drawing, digital art is much

broader. With some programming, computers can create astonishing images, animations, and various visual effects. Many are used in fields such as entertainment, advertising, and web design.

However, with popularity comes doubt. Without a physical medium, many artists debate whether digital art is “real art.” In the comment section of many digital art videos exists different voices. Some argue that digital arts are a form of “cheating,” where digital artists focus too much on the tools instead of the art itself. Others argue that it's real talent if someone makes hard things look easy. Moreover, digital art is heavily involved in NFTs, which are often associated with words like “scam,” “speculation,” and “overhyped.”

Just as the hotness of NFTs started to cool, a new wave of controversy arrived. Generative AI

models like Midjourney, Stable Diffusion, and DALL-E quickly evolved and took over the trend. Generative AI Models can generate the entire image with a few sentences, which completely shifts people's expectations and now causes massive debates in the art industry. Are AI-generated images meaningful and emotional? Should AI-generated art be considered plagiarism if it's trained on existing artworks? If AI can make it better than me in one second, what is the point of learning drawing?

Nonetheless, art, by definition, is aimed to be appreciated primarily for its beauty or emotional power. As long as the work is pleasant and meaningful to you, and some other people, it is considered artwork and is worth the investment.

Reviews

Bob Marley: One Love Movie Review

By John McAllister, '24

An icon, a timeless figure, a legendary musician who transcended a once-unknown genre into worldwide critical acclaim. A man responsible for all different kinds of people listening to his music—ranging from different races and age groups to even vastly different countries! While also bringing all kinds of groups of people together with one commonality (the love for his music). Bob Marley is best known for his immense number of hit songs, and his talented songwriting ability, but there is more to the life of Bob Marley than his musical talent.

To show the audience an even more broad view of the life of the iconic Bob Marley, *Bob Marley: One Love* was released on February



14th. The movie starred Kingsley Ben-Adir playing Bob Marley, Michael Gandolfini, and even a number of the Marley children as well. Director Reinaldo Marcus Green stated in an interview his goal for the film was to “highlight Bob’s musical genius and legacy, that’s the core and his message on what he was trying to get out there.” Reinal-

do goes on to talk about his determination to highlight Marley’s human side rather than the things he is typically known for.

If you are a Bob Marley fan, you should head to the theaters to see this movie. Furthermore, I firmly believe if you are an overall fan of music, you should watch this film. I am a huge fan of all music and am eager to learn more about this extremely influential figure in music history and the process of how he made his hit songs. I’d also like to learn about the kind of person he was, what he was like as a father, his activist practices, and what he meant to the people of Jamaica. Go check out *Bob Marley: One Love* now while it is still in theaters!

We Watched Madame Web So You Don't Have To

By: Wren O’Looney, '25, Nicholas Quianzon, '25, & Haris Shafiq, '25

Going into the release of the movie, most people correctly expected *Madame Web* to be terrible. The lead actress, Dakota Johnson, admitted to reporters that she was unhappy with the project, claiming “drastic changes” were made to the movie from when she signed her contract, which she couldn’t disclose due to legal ramifications. When asked whether she has watched the film, she said, “I haven’t actually watched the movie.” Further, she does not intend on watching the film’s premiere.

Since the film’s release, critics have agreed with the movie’s lead actor: Rotten Tomatoes has rated it 13% on their scale, the lowest of all of the Spider-Man franchise movies. The movie’s quality falls short of that expected from a Marvel movie, especially one with an \$80 million budget. It features awkward dialogue, weak script, underdeveloped characters, and forced franchise nods. Its comedic attempts fell flat, but the laughable execution of many scenes kept us amused. The movie also spoon-feeds the audience with excessive exposition, undermining the viewer’s intelligence by overexplaining the things that happen on screen. In one scene, Cassie (Madame Web) teaches her girls CPR. This



scene felt very out of place, and its purpose was only realized later in the film when these same people conveniently had to use CPR to save Cassie’s life. This scene was not the exception as mo-

ments like these happened throughout the film. To make matters worse, the producers couldn’t even do the voiceover of the main villain, Ezekial Sims, properly. The audience can see throughout the film that his mouth movements do not match his words. Unfortunately, the awfulness seen in *Madame Web* is nothing new. Ever since the fifth phase of the Marvel Cinematic Universe was introduced, in which characters such as Iron Man and Captain America were retired, Marvel has taken a turn for the worse.

In addition to the film being horrible, its version of Cassie is nothing like Cassie from the comic book *Madam Web*—an elderly woman confined to a chair throughout the volumes—as Dakota Johnson is 34 years old. The director, S.J. Clarkson, makes an appalling link by limiting Cassie to a wheelchair at the end of the movie. Furthermore, the main characters don’t even wear their iconic spider suits, except for in one of Cassie’s prophetic visions. Watching the movie reminded us of the *X-Men* series: vaguely related to their comic books but easily forgettable.

Play Review: Next To Normal

by Alex Wang, '24

Next to Normal is a musical performed at the Round House Theatre that illustrates a story of how a mother of two children gradually walked out of her son’s death and fought against her psychological trauma.

Since it’s a musical, there must have been a band (musical support) from backstage. Unlike the Prep’s theater, where musicians will play the music under the stage, musicians play backstage at the Round House Theater, separated from the main stage through a huge glass wall. It’s an interesting design since the audience, especially those who sit on the balcony, can watch the play while noticing how musicians play their instruments. Another thing to mention about the stage setup is the background. There was a screen covering the

whole stage, in which the technical crew would change the lights on it to create different objects (in other words, light effects) in each scene.

The storyline includes that Diana, a mother of two children, lost her first son and, since then, faced the challenges of destructive psychological diseases. She would hallucinate her son growing up as a teenager, just like other normal high school students, and become part of the family, despite the fact that he has been dead for years. Because of her symptoms, she barely spent any time with her second child, Natalie, who is also a brilliant, hardworking student. In one scene, Natalie called herself an “invisible girl” to demonstrate her rather vague appearance as a family member. Over time, conflicts emerged among

each family member, and all the conflicts were transformed into fantastic musical shows on the stage. Their vocal expressions succeeded in expressing their emotions and moods.

At this point, her husband Dan appeared to be calm and responsible, and he took Diana to see different psychiatrists, trying to find the best treatment. After the failure of the traditional “pill” plan, her second psychiatrist recommended the ECT treatment, a powerful technique with potential memory loss as its side effect.

However, the ECT treatment only improved Diana’s situation for a moment, in which she, again, remembered everything (including what happened to her son) after seeing a music box left by her son. Be- **Continued on Pg. 7**

Current Events

Next To Normal Review Cont'd



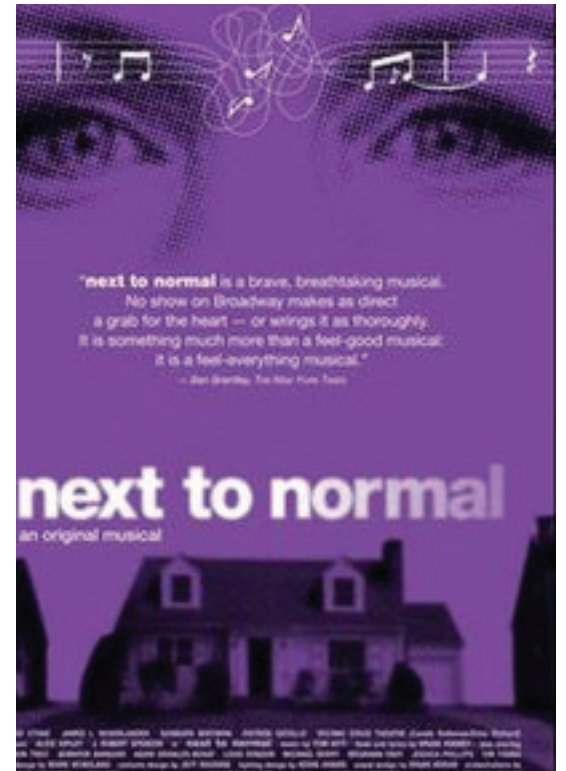
A Scene of Next To Normal at the Kennedy Center

cause of this, her daughter became more and more cynical due to both academic and family pressure, in which she was seen drunk in multiple clubs by her boyfriend. Treatment only improved Diana's situation for a moment, in which

she, again, remembered everything (including what happened to her son) after seeing a music box left by her son. Because of this, her daughter became more and more cynical due to both academic and family pressure, in which she was seen drunk in multiple clubs by her boyfriend.

After so many struggles and failures, Diana finally realized that it was time to reconcile with her trauma, so she decided to move to her parent's house for a bit. On the other hand, Gabe (Diana's son) also reconciled with Dan in his ghost form. The ending was what I had expected, as the family went back on the right track.

One thing to point out was the light effect. The change in color successfully conveyed each character's tone and mood while singing. In one scene where all five characters sang together, the light did create a sense of chaos. The psychiatrist (Doctor Fine),



played by Calvin McCullough, also had a funny appearance: He had an extremely high volume with complex facial emotions when singing his lines, even shocking Diana as if she wondered who was the patient that needed a psychiatrist.

Modern Gold-Rush

by Miles Wolins, '25

A modern Gold Rush, or rather, Lithium Rush, has hit North America. On February 14, 2024, a mineral exploration company, American Rare Earths Inc., made an unbelievable discovery regarding the concentration of rare earth metals in Wyoming.

In April of last year, American Rare Earths Inc. found an estimated 1.2 million metric tons of rare earth minerals and metals in northeastern Wyoming. This February, the company drilled again and estimated there are actually 2.34 billion metric tons of rare metals in Wheatland, Wyoming. For a long time, China has dominated this market, but this find has enormous potential to help the United States contend with China.

A notable portion of the metals found in the Wyoming mines was Lithium. Lithium is a key

raw metal used in the mass production of microchips and batteries. Microchips are the single most important instruments in motherboards, which are needed in any computer-operated machine. Similarly, batteries are used in most electronics that don't have an exterior energy source.

In the later years leading up to 2024, America depended on microchip exports from Taiwan. The microchip production industry of this small country is greatly influenced by China, Japan, and Russia. With the discovery of billions of metric tons of lithium in Wyoming, America now has the facilities for constructing its own microchips. American Rare Earths Inc. is planning several extraction projects in Wyoming without government assistance. According to The Cowboy State Daily, "With worldwide rare

earth mineral demand standing at about 60,000 tons annually, the company could move to establish a mining operation on 320 acres of state land where permitting would happen at a faster clip than on federally owned land. The fact that the demand is high indicates the company [does not need] to move 'faster' on federal land."

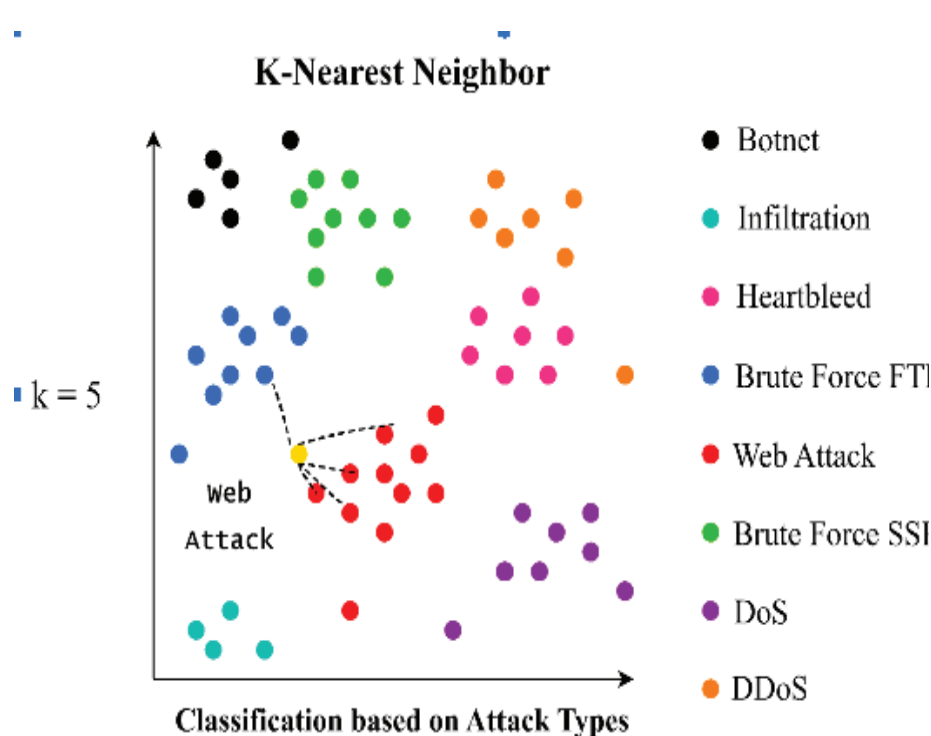
These incredible findings bring a question for the years to come. With American dependence on Taiwan fading, how much longer will America support Taiwan's independence from China? Will China try to take its chance in seizing Taiwan? This provocative question is far-fetched, but it could become a reality soon.

Classifying Network Attacks with K-Nearest Neighbor

by Hanwen Zhang, '24

As a supervised learning clustering model, K-Nearest Neighbor calculates the distances, usually Euclidean distances, between new and classified data to find the correlations. As a classification method, this model is capable of allocating data to multiple categories, which expands the number of classification tasks it can complete. The figure below is a brief simulation of how the model works to classify new data to a specific attack type.

As the figure above shows, there are eight cyber attack types, including brute force FTP, brute force SSH, DoS, heartbleed, web, infiltration, botnet, and DDoS attacks, each with its distinct pat-



terns which the model recognizes. The yellow dot in the figure is a new piece of data that is not yet classified into any type of attack. Classification, however, requires a value of k to be set. The k-value represents how many closest neighbors, in this case, classified data, the new data has. In this case, it is set to 5. Out of the 5 closest neighbors to the yellow dot, there is 1 blue dot and 4 red dots, which means that the new data, yellow dot, should be a web attack, since the majority of its five nearest neighbors are red. Using this example, K-Nearest Neighbor's benefits as a machine learning classifier are evident, illustrating its use as an algorithm for any classification or regression tasks.

Current Events

Putin's Political Rival Died in Russian Prison: What Happens Now?

by Anwar Charvel, '25

Alexei Navalny was a prominent figure in Russian politics, widely known for his opposition to Vladimir Putin. He was a lawyer who used his law expertise and charisma to challenge the embedded corruption within Russia's political and business elite. Through his investigative reporting, use of social media, and leading large protests, he became a significant problem for the Russian government. He pushed for openness, responsibility, and changes toward more democracy. His efforts to expose misconduct in the Russian government resonated with many Russians, which made him the face of the resistance against President Vladimir Putin's regime.

Navalny's activism, however, made him a target for harassment, legal prosecution, and physical attacks, which many believed to be orchestrated by the state. His return to Russia in January 2021, following a recovery in Germany from a near-fatal poisoning incident, led to his immediate arrest. This marked the beginning of his imprisonment, which drew international backlash and was seen by everyone as a politi-

cally motivated attempt to silence Putin's most vocal critic.

Alexei Navalny spent his final days in the harsh conditions of the "Polar Wolf" penal col-



A Photo Of Navalny's Memorial

ony in the Arctic, known for its severe climate and strict regime. He faced collective punishment from guards and inmates, extreme cold, and limited medical care, which took a toll on his health, which was previously damaged by the

poisoning incident. Despite these challenges, Navalny continued to fight for prisoners' rights and remained a symbol of resistance against the Kremlin during his final days. On February 16, on a cold Friday night, Navalny fell unconscious and died. The cause of death is still uncertain, but most believe that the Russian government orchestrated it.

What will happen moving forward? We do not know, but we are certain that Navalny's death has inflated the people's fear in the streets.

Navalny's passing may ignite a renewed spirit of resilience among his followers and the broader Russian opposition. His legacy could inspire a new wave of activism that motivates Russians to unite and intensify their efforts for transparency and justice in the Kremlin. This tragic loss might become a catalyst for change and a new political order. It could compel people to honor Navalny by continuing his fight against corruption and authoritarianism with even greater determination.

The Black Hatters: China's State-Sponsored Efforts to Hack the United States

by Peter Karaki, '25

The recent leak of files has unveiled the clandestine world of China's state-sponsored hackers for hire, specifically exposing the operations of a Chinese security firm called I-Soon. The documents detail an eight-year effort by I-Soon to not only target databases and communications in Asian countries but to also infiltrate allies of the United States including South Korea and Taiwan. The leaked files include records of correspondence, lists of targets, and demonstrations of cyberattack tools, with cybersecurity experts expressing confidence in the authenticity of the documents.

I-Soon, one of several firms aiding China's robust hacking pursuits, offers a diverse selection of services at varying costs. These offerings span from infiltrating foreign government websites to spreading disinformation and garnering personal data from social networking sites.

The leak gives us insight into the alliance among China's law enforcement, the Ministry of State Security, and private-sector individuals in their hacking crusades against foreign govern-



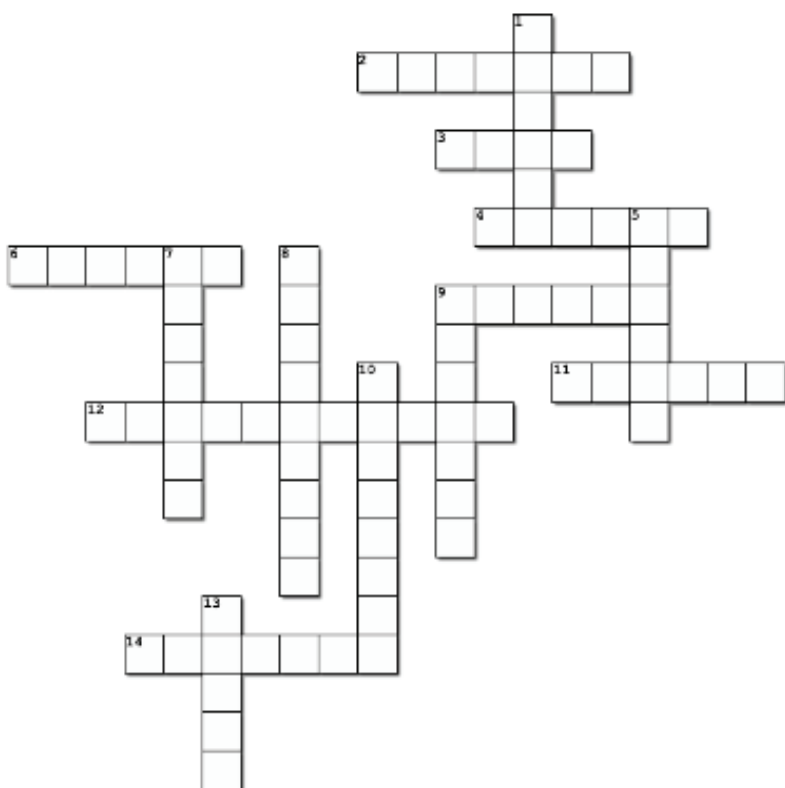
ments and corporations. Evidence shows I-Soon has engaged with different Chinese government bodies sponsoring hacking, such as the Ministry of State Security, the People's Liberation Army,

and China's national police force. China's engagement of private contractors for hacking mirrors strategies undertaken by Iran and Russia, yet the distributed approach poses management dilemmas. Despite the information leak being from a single contractor, the intel holds significant weight and may assist agencies.

These revelations come when U.S. officials have issued warnings about the escalating nature of Chinese hacking activities, including the input of malicious code in critical American infrastructure. The leaked files display just how challenging a task those seeking to counteract the extensive hacking operations originating from China have due to its decentralization and origins in the private sector, illustrating an issue needing a strong policy response by the U.S. government.

The Little Hoya's Crossword Puzzle Spring Editon

by Matias Beariault, '25, Luis Barrenechea, '25, & Zachary Geoghegan, '25



Across

- 2.Shortcut through lane
- 3.Oh no, today's (Most dreaded)
- 4.Something
- 6.Grad at grad; modeled from Jesus
- 9.Ran for Montgomery County Council
- 11.Leaner, worn, and nautical
- 12.Graduation bond
- 14.Hidden behind freshman

Down

- 1.Reigning chess champion
- 5.Eight period, Wednesday.
- 7."Beautiful" voice heard through the Haas
- 8.Mr. (Wood Craftsmen)
- 9.Comedic Prep Grad
- 10.They speed around the George Circle
- 13.The More