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THE TARTAN

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August 29, 2016
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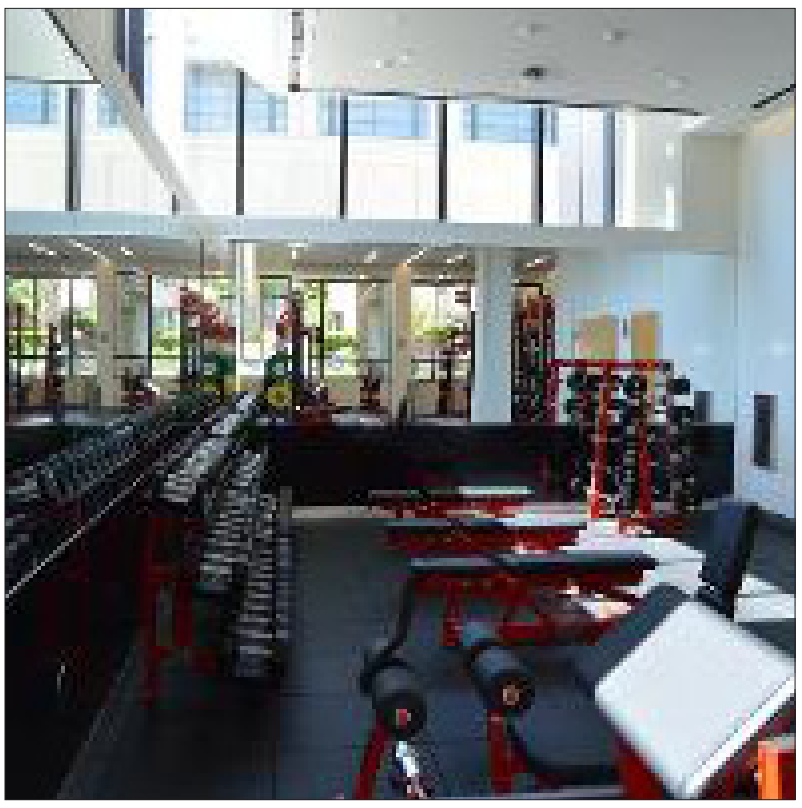
Group X classes now free for Carnegie Mellon students



Courtesy of Carnegie Mellon University

On Aug. 29, undergraduate and graduate Carnegie Mellon students will be able to participate in various Group X classes, such as Zumba and indoor cycling, for free. Students must simply present their ID to their instructor.

VALENE MEZMIN
News Editor

In light of the opening of the new fitness facility in the Cohon Center, the Carnegie Mellon University Department of Athletics, Physical Education, and Recreation recently announced that as of Monday, Aug. 29, Group X classes, endorsed by The Task Force on the CMU experience, will be free to all undergraduate and graduate students. This means that Carnegie Mellon University students can now partake in yoga, Pilates, Zumba, indoor cycling, and other Group X classes free of charge. Due to the added space of the new fitness facility, it was announced that the athletics department also plans to expand upcoming Group X schedules.

Group X classes were first inspired by the aerobics dance craze of the late 20th century, which was initiated by Kenneth H. Cooper, an exercise physiologist for the San Antonio Texas Air Force Hospital. According to the Group X page on Carnegie Mellon University's athletics website, the first ever aerobics class at the Carnegie Mellon was called "Dance and Gymnastics," with both activities being separated into the fall and spring semester. As the popularity of aerobics grew on campus, so did the demand for more classes and instructors.

"Over the years, the program grew and developed into Group Exercise, which is now called Group X," the website states.

Making Group X classes free has been a work in progress for some time. Last year, the Athletics Department sponsored "Fitness February." During this month, Group X classes were made free to undergraduate and graduate students. Additionally, a partnership between Athletics, Housing Services, and Student Life provided free Group X classes during the spring semester to residential students. The economic, physical, and ultimately educational benefits of these programs led to an increase in popularity and desire for free Group X classes year-round for students.

In the press release for the recently announced free Group X classes, Josh Centor, Director of Athletics at Carnegie Mellon, discusses the positive outcomes of these initiatives and what led to this decision. "We had great success with our initiatives last year," said Centor. "I couldn't be more excited that we are able to take this important step for our student community." He hopes that the accessibility of these new classes will provide students the opportunity to be more healthy and active.

Group X classes used to be paid for through the Fitbucks payment system. Each Fitbuck would cost one dollar and a Group X class cost five Fitbucks. To pay for a Group X class, students were required to bring their Carnegie Mellon ID and tap their ID against a tablet to pay at the start of the session. This process still remains; however, students can now take advantage of the classes by simply arriving at their desired class a few minutes prior to it starting and presenting their student ID to the instructor. This is a much quicker, simpler, and more economically friendly alternative.

In the press release, Gina Casalegno, Vice president for Student Affairs, stated, "It is an exciting time to be at Carnegie Mellon with new investments being made in facilities and programs that support an enhanced CMU Experience.... I have been inspired to see the university's commitment to holistic health and well-being come to life in our physical infrastructure through projects like the Cohon Center expansion and planned investments in the Tepper Quad and other building renovations. As we open the year with the impressive addition to the Cohon Center, I am thrilled the university is furthering the impact of our programs through the free Group X initiative for students."

So far, reception to this news has been extremely positive among students.

The official announcement can be read at *http://athletics.cmu.edu/generalnews/2016-2017/groupx-classes*.

Pitt student causes disturbance on Forbes Ave.

Valene Mezmin/ News Editor

22 year-old University of Pittsburgh student Grant Birdsong fell in between two buildings on Oakland Avenue while trying to impress a girl.

DEBORAH CHU
Assistant News Editor

A 22-year-old University of Pittsburgh student, identified as Grant Birdsong, who hails from the nearby Indiana Township, made waves on the internet last week when he attempted to leap from the rooftop of one building to another, but instead fell and got wedged between the two, all allegedly to impress a woman he just met. The two had gone up a fire escape to the rooftops of the Qdoba and Bruegger's Bagels restaurants in Oakland when the incident occurred. The area, on Forbes Avenue near Atwood Street, is relatively central to the University of Pittsburgh, but is also often visited by Carnegie Mellon students looking for nearby off-campus food options.

At approximately 2 a.m. Tuesday morning, rescue workers arrived on the scene to try to retrieve the student from the 17-inch gap between the buildings. Police, firemen and paramedics all contributed to the effort for about four hours before Birdsong was finally freed at around 6 a.m. At one point, a paramedic rappelled down the gap, descending around three stories to help. Eventually, a jack hammer was used to break through the wall of Qdoba to successfully extract Birdsong.

The entire episode was live-tweeted by the Pittsburgh Public Safety Department, and was mentioned on several national news outlets. As Birdsong was wheeled away from the scene on a gurney, conscious but bleeding and sporting a broken ankle, he reportedly waved at TV news cameras.

A brief video of Birdsong after he was rescued shows him calmly laying on his back on a stretcher as he rolls towards an ambulance. He raises his arms in the air to give two thumbs up as he disappears into the vehicle.

On the internet, many who reported the story found humor in Birdsong's ordeal. Time Magazine described it as "a harrowing tale of modern love, male ego, and parkour" and commended the Pittsburgh Public Safety Department's dedication to live reporting the incident on Twitter.

Vice Magazine had a list of questions for Birdsong, starting with "Are you OK?", followed by questions such as, "What was the conversation like on top of the roof? Did you immediately start bragging about your long-jumping ability, or did she start talking about her ex who was a really good jumper, or what exactly was the chain of events here?", and finally ending with "Are you OK? I hope you are OK" again.

The roof-jumping incident even earned a mention in Jimmy Fallon's monologue on *The Tonight Show*, as Fallon admitted he laughed when he heard the story, and joked that "Afterwards, the woman actually agreed to go out on a date…with the fireman who rescued that idiot."

On social media, Birdsong was dubbed "Pitt Spiderman" and earned his very own hashtag.

Following the incident, the owner of the Qdoba, Chad Brooks, commented that his restaurant was likely to be closed for two weeks due to the new massive hole in its wall. However, Brooks stated that, "We were all young and dumb at some point, so no ill will toward him. I'm sure he's embarrassed. I'm sure he's hurting too."

Bruegger's Bagels was met with more fortune in the aftermath, experiencing a delay of only an hour before opening again at 7 a.m. on Tuesday morning.

Police considered filing charges, but according to public safety spokeswoman Emily Schaffer, the cost of the damage done was expected to be covered by the business' insurance.

In the end, if it's any consolation to Birdsong, the girl did end up staying through the whole ordeal to make sure he was okay. It is unknown, however, whether they kept in touch after that.

Electric car use dismal at CMU

VALENE MEZMIN
News Editor

Lately, many drivers have been making the switch from gasoline powered cars to electric cars. Why? The main driving factor leading many Americans to make this switch is the fact that electric cars provide benefits to today's drivers that, for many, seem to outweigh the use of gasoline powered cars.

The major appeal of electric cars is the environment-friendly nature of the car, which swaps out the gasoline motor for an electric one, resulting in less pollution. This fact is especially great for those living in major cities where the effects of pollution from over-population pose an increasingly serious threat every day.

The appeal of electric cars has swayed many who no longer see the appeal of using gasoline and are starting to take notice of the negative aspects of it. Jason D'Antonio, director of the Health Profession program at the Mellon College of Science, commutes roughly 30 miles to and from work every day and has noticed that the fuel consumption from his current car has become too high for him.

See **E-CAR**, *A3*

FEATURE PHOTO

First-year students "capture the moment" during orientation week

Courtesy of José Mario López

This week, Carnegie Mellon welcomed its new group of first-year students. The class of 2020+ consists of over 1,500 students who have traveled here from 25 countries and44 states. This year's theme was "capture the moment," which prompted students to take plenty of pictures during the week.

CAMPUS NEWS IN BRIEF

Celebration of Cohon Center Expansion to take place on Friday, September 2

On Sept. 2, the Cohon Center is offering a variety of free activities, music, and food throughout the day to celebrate its new expansion. A preliminary schedule of events is provided below, but more details, activities, and a full schedule of events will be coming later this week on the corresponding Facebook event page.

Free Group X classes will begin at 7:30 a.m. From 11 a.m. to 2 p.m., a volunteer fair will be held in Rangos, while ballroom dance classes can be found in the Activities Room. Tables in Wean will offer free samples from Culinart. Skibo Cafe will present musical performances and free treats from Au Bon Pain. In addition, refreshments can be found in the new Studio Theater and the new Danforth Conference Room.

You will also be able to check in at the event's information desk to go on tours of the new Fitness Center, which will be available from 11 a.m. to 4 p.m. At 4:30 p.m. in the Wiegand Gym, a 3-on-3 basketball tournament will begin. At 7:30 p.m. in the Studio Theater, there will be a performance by deejay Louis the Child.

In the evening, AB activities will present a showing of Zootopia in McConomy Auditorium at 10:30 p.m.

Jean Yang added to MIT Technology Review's "Innovators Under 35" List

Jean Yang, a new assistant professor joining the Carnegie Mellon Computer Science Department this fall, has been added to the annual "Innovators Under 35" list, an international list compiled by MIT Technology Review that recognizes 35 outstanding innovators across a wide range of fields. Yang was recognized in the Visionary category of the list for her work developing a programming model that integrates security into applications.

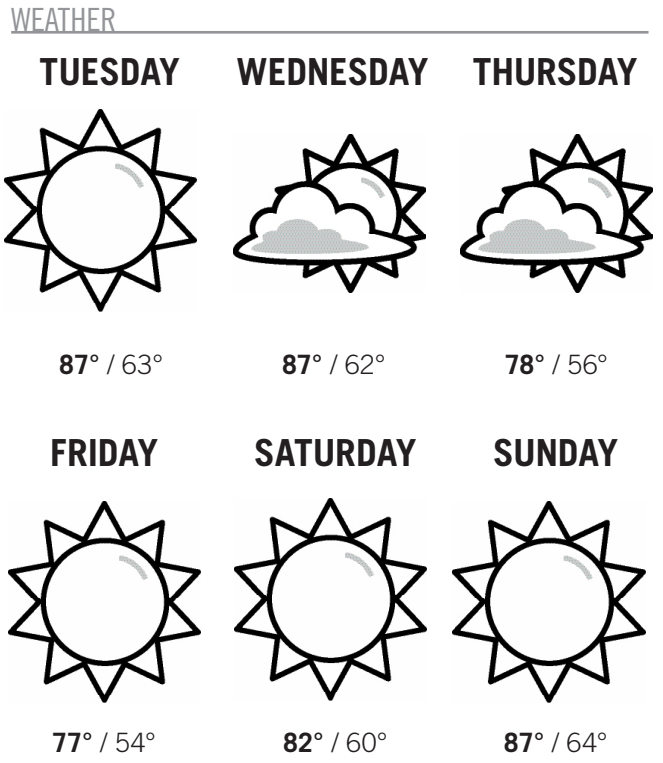
Previous winners who have been named to the list include Mark Zuckerberg, the co-founder of Facebook; Jonathan Ive, the chief designer of Apple; and Larry Page and Sergey Brin, the co-founders of Google.

"Over the years, we've had success in choosing young innovators whose work has been profoundly influential on the direction of human affairs," Jason Pontin, the magazine's editor-in-chief and publisher, said. "We're proud of our selections and the variety of achievements they celebrate, and we're proud to add Jean Yang to this prestigious list."

Yang received her Ph.D. in computer science from the Massachusetts Institute of Technology in 2015. At Carnegie Mellon, she will also have an affiliate appointment in the Computational Biology Department, having spent last year working on protein signaling models as a postdoctoral researcher at Harvard Medical School.

Compiled by
DEBORAH CHU

WEATHER



Source: *www.weather.com*

Campus Crime & Incident Reports

Criminal Mischief/Assist Outside Agency
Aug. 20, 2016

A University Police Officer assisted the Pittsburgh Bureau of Police in the apprehension of a male attempting to break into a vehicle.

Alcohol Amnesty
Aug. 23, 2016

University Police responded to a report of an intoxicated male at Margaret Morrison Apartments. The Carnegie Mellon student was provided with medical attention. All criteria of Alcohol Amnesty were met and no citations were issued.

Theft of Phone
Aug. 23, 2016

A Carnegie Mellon staff member's iPhone was unlawfully removed from Scott Hall after he accidentally left it unattended by Rothberg's Eatery.

Welfare Check
Aug. 23, 2016

A male laying on the grass was observed by a University Police Officer on patrol in the Greek Quad. The officer made contact with the male who was found to be intoxicated. The student was provided with medical attention and no citations were issued due to the male being over the legal drinking age.

Odor of Marijuana/ Disorderly Conduct
Aug. 24, 2016

A University Police Officer on patrol in the area of Tech Street and Margaret Morrison street observed a male smoking marijuana. The officer seized a small amount of marijuana from the student who was issued a citation for Disorderly Conduct.

Suspicious Person
Aug. 24, 2016

A suspicious female was reported wandering Wean Hall. The non-affiliate was issued a Defiant Trespass Warning by University Police and was escorted from campus without incident.

Theft of Bicycle
Aug. 24, 2016

A Carnegie Mellon student's bicycle was unlawfully removed from the bicycle rack located outside of Stever House. An investigation is ongoing.

Theft of Computer Monitor and Keyboard
Aug. 26, 2016

A Carnegie Mellon student reported to University Police that his computer monitor and keyboard were unlawfully removed from the Mudge House storage area sometime over summer break. An investigation is ongoing.

Compiled by
VALENE MEZMIN

Corrections & Clarifications

If you would like to submit a correction or clarification, please email The Tartan at *news@thetartan.org* or *editor@thetartan.org* with your inquiry, as well as the date of the issue and the name of the article. We will print the correction or clarification in the next print issue and publish it online.

INTERNATIONAL NEWS IN BRIEF

French burkini swimwear ban reversed by court

NICE — Following the release of images on a beach in Nice of police forcing a woman to remove her burkini, the highest court in France, The Council of State, ruled that mayors do not have the authority to ban the garment. This news follows a ban of the swimwear, which covers the whole body except for the face hands and feet, in more than 30 french cities.

Source: CNN

Attack in Kabul leaves at least twelve dead

KABUL — An attack on the American University of Afghanistan in Kabul has left seven students, three police officers, and two university guards dead. Three attackers were involved. One detonated a suicide car bomb at the entrance, allowing the other two to enter the campus and begin gunfire. It is suspected that the Taliban is involved in the attack.

Source: ABC News

Bases near Jarablus attacked by Turkey-backed rebels

JARABLUS — Turkish airstrikes have hit bases and residential areas near Jarablus. This was reported by Kurdish-led forces in northern Syria. These airstrikes come following the siege of Jarablus by Turkey-backed rebels. The Jarablus Military Council called it an "unprecedented and dangerous escalation" that could "endanger the future of the region."

Source: The Associated Press

Italy rallies together to mourn lives lost in earthquake

ASCOLI PICENO — On Aug. 24 a magnitude 6.2 earthquake ripped through Italy leaving roughly 290 people dead and more than 2,000 homeless. A state funeral was held in in a local gym in Ascoli Piceno for those that were killed in the earthquake. Hundreds of people were in attendance at the Catholic ceremony. Makeshift camps have been set up in light of the disaster.

Source: CNN

Protest in Zimbabwe exstinguished by police forces

HARARE — A protest against President Robert Mugabe in the Harare, the capital of Zimbabe, was broken up by Zimbabwean police. Officers used tear gas, water cannons, and beat protesters with batons. This violent act occurred despite the court's allowance of the protests. This event has only increased tensions in the country of Zimbabwe.

Source: *The New York Times*

Russian warehouse fire kills seventeen female workers

MOSCOW — A warehouse fire in Russia killed 17 migrant workers from Kyrgyzstan. The victims, all women, were trapped in a dressing room while changing for work when the fire, which was caused by a faulty lamp, began. Three other women were also injured in the fire.

Source: The Associated Press

Compiled by
JADE CROCKEM

Cylab professors awarded $1.1 million, four-year NSF grant to continue their research on the Internet of Things

SARAH GUTEKUNST
Publisher

This summer, the National Science Foundation (NSF) awarded a $1.1 million, four-year grant to a team of researchers in Carnegie Mellon's Cylab to solve the problem of security in the Internet of Things (IoT).

The grant recipient is Vyas Sekar, assistant professor in electrical computer engineering at Carnegie Mellon University, who will work alongside professors Yuvraj Agarwal and Srinivasan Seshan from the School of Computer Science. The grant will primarily serve to pay the tuition and stipends of the faculty's PhD students, whom Sekar deems "the absolute 'lifeblood' of the awesome research results you see here at CMU."

"IoT promises to revolutionize various aspects of everyday life and many market segments — introducing new opportunities to improve the efficiency of various processes, cut energy costs, improve quality of life and so on."

—Vyas Sekar, Assistant professor in electrical and computer engineering

The IoT describes the nearly six billion everyday devices that we use with network connectivity to send and receive information. It integrates the real and digital worlds and comprises the devices that we call "smart." We use these devices in our houses, cars, natural environments, and even when choosing outfits, so, naturally, they run on an extremely wide variety of platforms.

Because of this diversity, the devices cannot be easily secured or regulated through software, like anti-virus programs. The best way to combat this problem is through the network.

In a press release, Sekar said that the team will operate under the assumption that the devices are broken and cannot be fixed, therefore the solution is to put a metaphorical "kevlar vest" around them to intercept any threats before they reach the device.

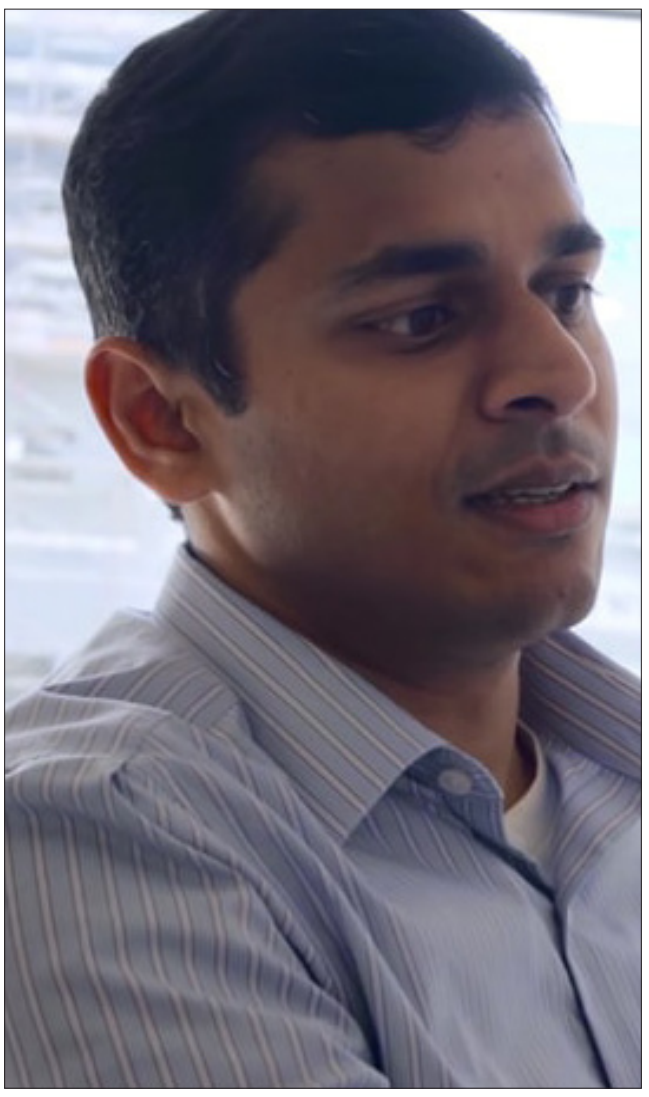
Despite its inherent brokenness, the IoT is worth the security. Sekar wrote in an email, "IoT promises to revolutionize various aspects of everyday life and many market segments — introducing new opportunities to improve the efficiency of various processes, cut energy costs, improve quality of life and so on." But we interact with these devices so closely and so often that they tend to interact with our private information. A more secure IoT will allow users to feel more confident that their privacy will not be violated.

The NSF grant awarded to Sekar and Cylab signifies that this issue is worth the time, money, and research to the broader research community as well as to the average American. In order to be considered for a grant, researchers must submit a proposal to the NSF. The proposal is then sent through various phases of peer review.

Panels of experts in the field evaluate all proposals to recommend which ones promise the most innovation and impact. Program managers then dole out grants to the top-rated researchers.

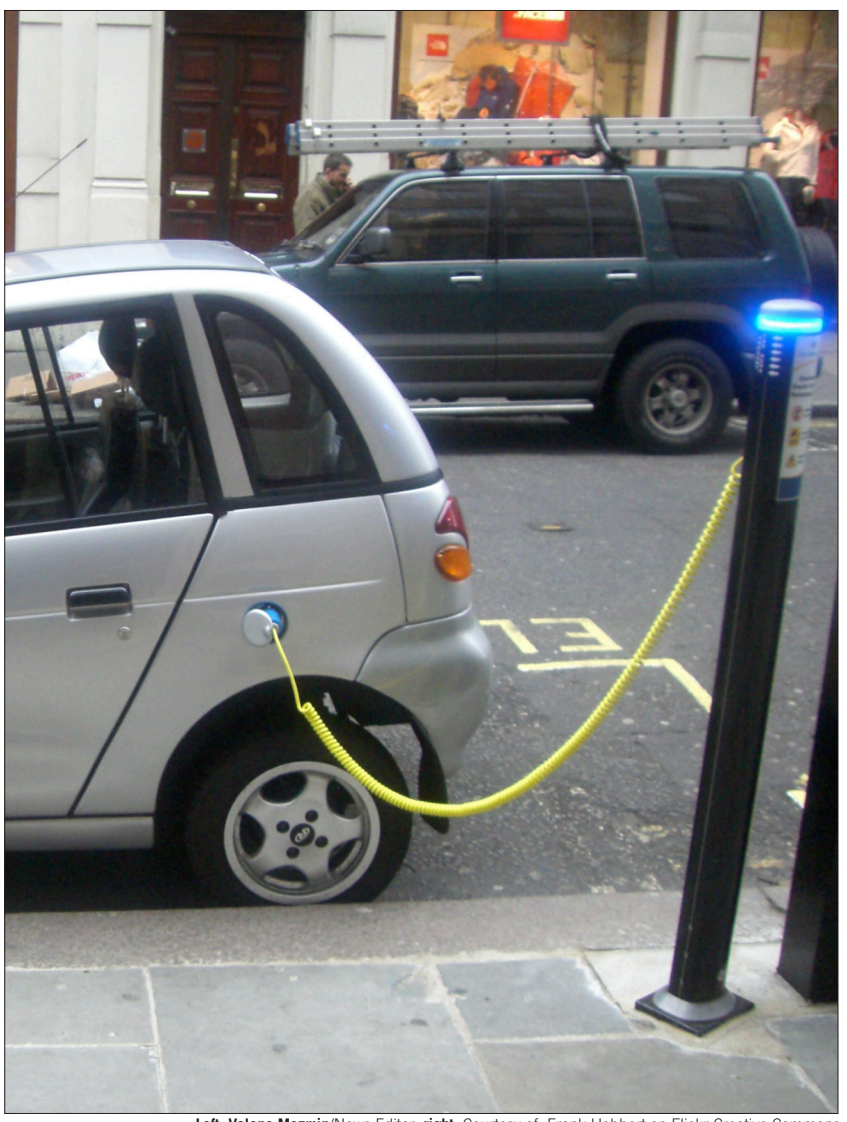
What makes Cylab's approach to security unique among Carnegie Mellon's peer institutions is the breadth of specialties and departments that its faculty represent. Each team member brings something essential to the project. According to Sekar, security is "an inherently 'cross cutting' activity that entails several disciplines and a collaborative research attitude," which Cylab's faculty is built to handle.

On the collaboration with Agarwal and Seshan, Sekar said, "we bring together complementary expertise in different areas such as network security, software-defined networks, sensor networks, mobile systems, privacy, etc. that will be fundamentally necessary to address the IoT security and privacy research challenges."



Courtesy of Vyas Sekar, Yuvraj Agarwal, and Srinivasan Seshan
CMU professors Sekar (left), Agarwal (top), and Seshan (right) received a $1.1 million grant to continue their research on the Internet of Things.

Electric Garage shuts down; e-car use minimal at CMU



Left: Valene Mezmin/News Editor; **right:** Courtesy of Frank Hebbert on Flickr Creative Commons
On Aug. 5, CMU's Electric Garage was closed to make room for the new TCS Building. While electric car use has been growing across the country, conversations surrounding the eco-friendly vehicle remain dismal at the university.

E-CAR, *from A1*

The gasoline free nature of electric cars is what appealed to him most. "I want to use little to no gasoline for commuting," D'Antonio states. He also hopes that this aspect of electric cars will encourage others to make the switch as well.

The gasoline engine in regular cars is replaced with an electric motor in electric cars, which results in a nearly silent drive, another major appeal of electric cars to drivers. The electric motor is powered by controllers which get their energy from rechargeable batteries. While both types of cars look similar on the outside, one way of spotting the difference is to note that gasoline powered vehicles can be seen hooked up to gas pumps while electric cars get their energy from a charging wire.

Previously, Carnegie Mellon University was home to the "Electric Garage" which, in addition to eight vehicle recharging stations, also provided a high-power wall connector for Tesla electric cars. The high-power wall connector at the Electric Garage was able to provide roughly 58 miles of range per hour of charge. Located on 4621 Forbes Avenue, the Electric Garage was made free to the public in the Oakland area.

On Aug. 5, the Electric Garage was closed down to make room for the construction of the new Tata Consultancy Services (TCS) Building. As a result, the electric car charging stations have been relocated to nine locations on the Carnegie Mellon campus. Two are located on the first level of the East Campus Garage, another two are located on the third level of the Dithridge Street Garage, and five are on the bottom level of the Robert Mehrabian Collaborative Innovation Center (CIC) Garage. As of Aug. 20, anybody using one of the three garages is able to use the charging stations.

While many people across the country have started to see the appeal of electric car use, the knowledge of this type of car, or rather the appeal of it, has not yet persuaded many in the Carnegie Mellon community, which may have added to the decision to utilize the old location of the Electric Garage for the new TCS building. In an email, Michelle Porter, director of Parking and Transportation Services at Carnegie Mellon, states "There is a very small number of students/[faculty]/staff utilizing the charges on campus."

One could argue that while there are many real world incentives to using electric cars over gasoline cars, the lack of incentives for electric car use at Carnegie Mellon University, paired with drivers' questions about the practicality and affordability of them, has not helped in promoting discussions about using this type of car.

Michelle Porter states that currently the university "[does] not provide any incentives for electric car drivers." D'Antonio certainly believes this is a part of the problem. He points out that there are no financial benefits to using an e-car at Carnegie Mellon, such as, for example, a discount on parking electric cars. While there are no added incentives for using electric cars on campus, D'Antonio does note that one area electric cars do have an advantage is that while there are no gas stations around campus, electric cars are at least provided with a few charging stations for a couple hours of charge. This fact does not, however, make up for the lack of conversations about the usefulness of electric cars.

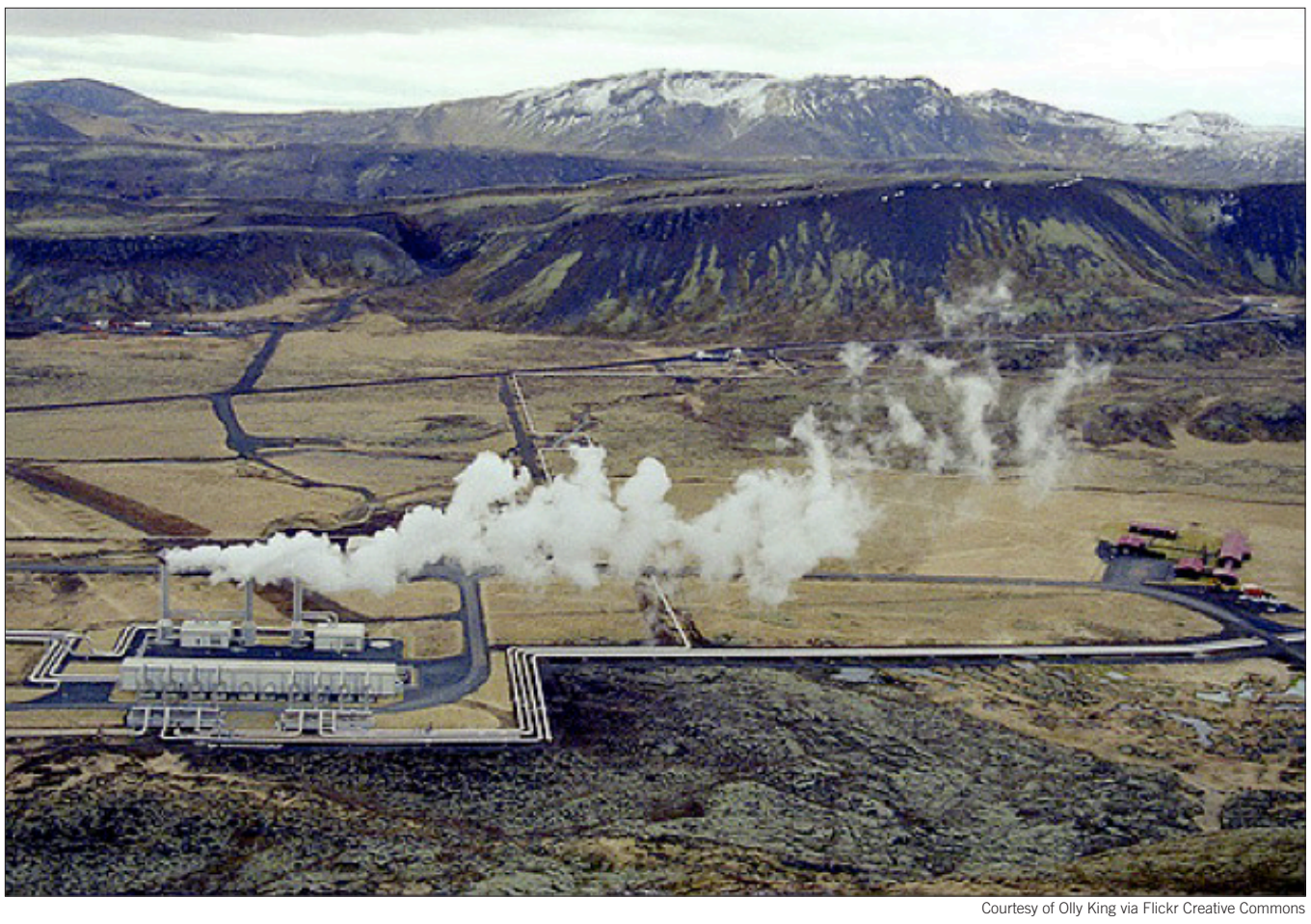
"As a university known for innovation and making ideas come to life, I would think that environmental awareness of this issue would be more front and center, and would permeate conversations resulting in more efforts to promote fuel efficiency commuting," D'Antonio states.

While electric car use has not been given much attention on campus, there has been a lot more focus on other methods of transportation such as Zipcars, motorcycles, and handicap accessible cars, which have far more spots on campus that electric cars. The drive to include and promote conversations about other methods of transportation at Carnegie Mellon is present, but sadly electric car use has not been as included in this movement.

It is still unclear as to whether or not Carnegie Mellon University will take the initiative to promote more discussions around electric cars on campus. However, with the growing use of electric cars across the globe, one can hope that this will soon change.

Science & Technology

CMU students win Geothermal Design Challenge prizes



Courtesy of Olly King via Flickr Creative Commons

JULIA NAPOLITANO
SciTech Editor

The United States Department of Energy (DOE) Geothermal Technologies Office partnered with the Center for Advanced Energy Studies (CAES) and Idaho National Laboratory (INL) earlier this spring to highlight the value and potential of geothermal energy.

Together, they hosted a competition for high school and university students to create infographics.

There were over 100 teams comprising of two to three students that entered the competition, and a committee of engineers, energy experts, and creative professionals selected the winners.

This year, the grand prize winner for the Geothermal Design Challenge was Infinity Below, a team composed of Carnegie Mellon students. The students, Marisa Lu, Tiffany Lai and Susie Lee, are sophomores in the School of Design.

"I've always been interested in environmental issues and led the environmental club back in high school, as well as campaigning with Environment Maryland and the Maryland Public Interest Research Group on related policies," Lu said in a university press release. "When I heard about this competition, I jumped on the opportunity to combine my personal passions and past experiences."

"Personally, I believe our infographic had an edge because we addressed all sorts of energy sources. This way, we showed the audience what the information we were giving was up against," Lai said in an interview with The Tartan.

Lee used this opportunity to spread the word about alternative energy sources.

"Nature provides us with so much energy, why do we have to keep using nonrenewable ones like fossil fuels?" Lee said in the press release.

"Getting other people aware of the resources that surround us is one step closer to being not so dependent on sources that won't be able to provide for much longer. Energy is the provider for function in our society. Why not fuel it for something that is clean both ethically and environmentally?"

In an interview with The Tartan, Lu agreed with her teammate.

"I think energy is a topic that needs to be communicated better because it is what enables us to have the lifestyles that we do, yet it's something we never give a second thought to until there's something wrong with it," Lu said.

Their winning design was an infographic entitled, "Our Energy Future? A Down to Earth Solution," with a landscape depicting energy from the sun to the core of the earth.

"As I understand it, energy plays a big role in how societies function, and subsequently influences what sort of long term relationship we have with our environment," Lu said in an interview with The Tartan. "Geothermal energy has not only great potential to reshape that relationship, but also to positively impact our international policies and socioeconomic landscape.

"The ideal future energy landscape is one that has just as much breadth in positive impacts. An ideal future energy scape would be one that cultivates good environmental stewardship,

See **ENERGY,** *A6*

Pokémon GO users encounter augmented reality on phone

JULIA NAPOLITANO
SciTech Editor

If you own a smartphone, you've probably heard of the newest mobile game sweeping the nation — or at least kids ages five to 35, and then some.

Pokémon GO is a free, downloadable, international app developed by Niantic Inc. that utilizes augmented reality to populate a player's surroundings with Pokémon characters from Nintendo's popular games for users to catch.

Players interact directly with their smartphone screen using a Google Maps layout. They can level up by catching and evolving Pokémon, visiting Pokéstops, and training and competing in Gyms, to name a few.

One of the game's selling points has been encouraging its mobile players to go outside and walk around, allowing them to take advantage of the nice summer weather.

An entire section of Pokémon GO's website is dedicated to exploring. It states, "Get on your feet and step outside to find and catch wild Pokémon. Explore cities and towns where you live — and even around the globe — to capture as many Pokémon as you can.

"As you walk through the real world, your smartphone will vibrate to let you know you're near a Pokémon."

Pokéstops, for example, are another way that the game connects a virtual player to reality. They can be located at interesting or significant landmarks around a player's area such as monuments, historical markers, or even a park bench in Schenley.

Pokémon GO is bringing this type of augmented reality interaction to a stage that some would argue hasn't been approached on this scale before. With over 100 million downloads and millions of people playing the game at any one time, the game is bound to have real world consequences.

Jeffrey Bigham, associate professor of human-computer interaction at Carnegie Mellon University's School of Computer Science, is excited to see where this exposure to augmented reality can take us.

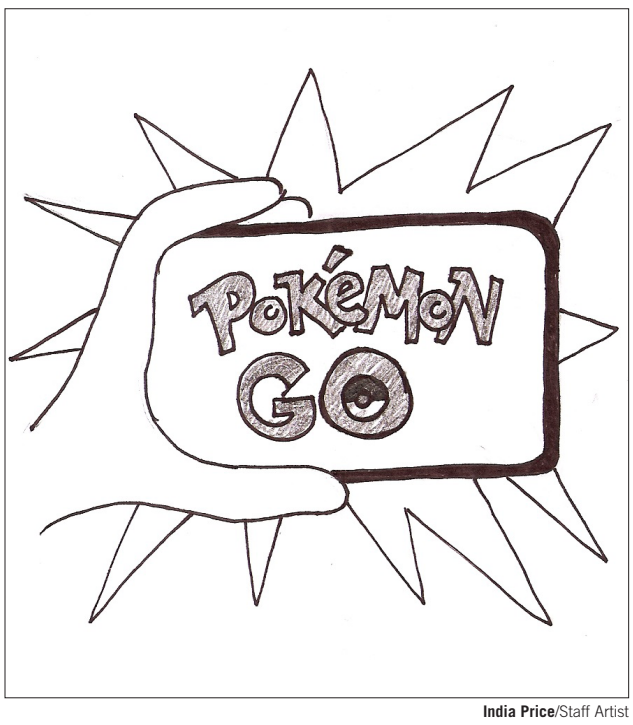
In a university press release, he said, "There's so much more potential for augmented reality than what Pokémon GO shows. But I think it's just the beginning, hopefully, of what we'll see."

Games that use augmented reality like Pokémon GO could be used in education, business, and more.

"One area that I'm really interested in is how we can turn players of these sorts of games into sensors on the world," Bigham said in the press release. "So that could help a lot of different people navigate the world more easily."

Augmented reality can also enhance and amplify our own human capabilities. Although it sounds like something out of a science fiction movie, augmented reality could be used to help identify people in a room by displaying their name over their head. It could even

See **PHONE,** *A5*



India Price/Staff Artist

SCITECH BRIEFS

Scientists identify Proxima b, an Earth-like planet

Years of research have led an international team of scientists to the discovery of Proxima b, a rocky exoplanet close to Earth. With instruments at the European Southern Observatory in Chile, the scientists studied the emission of light from Proxima Centauri, the closest star to the sun and the center of orbit for Proxima b.

According to Guillem Anglada-Escudé, a co-author from Queen Mary University of London, observation of the changes in color in Proxima Centauri led to deductions about the distance of Proxima b from the star as well as the mass of the planet.

Located within the habitable zone of the star, Proxima b exhibits characteristics that would make it hospitable for life, although no evidence exists to confirm that the planet possesses an atmosphere or water. Although the planet is far from human reach, scientists are eager to study more about it and possibly unlock details about alien life along the way.

The findings on the planet were published in *Nature*.

Source: The Guardian

Ultrasound may help the brain recover after coma

As reported in the journal *Brain Stimulations*, researchers led by Martin Monti at University of California, Los Angeles found that a 25-year-old man demonstrated significant recovery from a coma after they treated him with a low-intensity focused ultrasound pulsation.

This is the first time this technique has been used to treat severe brain injury.

The noninvasive technique involves sonic stimulation of the neurons located in the thalamus, the part of the brain that processes information and is often impaired after a coma.

During the procedure a device that emitted energy was placed next to the patient's head. After the treatment, the man showed improvements in his consciousness and speech. If replicated in future studies, the results of this technique could prove to be effective in helping patients recover from comas.

The device could be made into a helmet that is both portable and low-cost.

Source: ScienceDaily

Large storm sends elusive S waves across the Earth

In the Chugoku region of southern Japan seismologists have detected an S wave, a faint deep-Earth tremor, which was triggered by a severe distant storm in the Atlantic Ocean.

Involved in the study was Kiwamu Nishida and Ryota Takagi, from the University of Tokyo and Tohoku University respectively.

The researchers employed a network of seismic sensors to detect and sum the multiple faint signals collected, allowing them to trace the S wave to its origin for the first time.

Peter Bromirski of the University of California San Diego, who wrote commentary in the issue of *Science* in which the research was published, stated that the ability to detect S waves, in addition to the less elusive P waves, would allow for the location of new seismic sources in the middle of the Pacific.

In turn, geologists could use the waves to learn more about the innermost layers of the Earth, including its structure and composition.

Source: ScienceNews

Pokémon GO app dwindles recently in number of users

More than a month after its release by Niantic, Pokémon GO appears to be declining in popularity. Axiom Capital Management estimates that the number of daily active users of the game went from 45 million to 30 million between mid-July and mid-August.

According to Craig Chapple, editor of mobile games trade publication PocketGamer.Biz, the decline is to be expected in the aftermath of the initial hype over the game. Part of the decline may also be attributed to Niantic's controversial removal of the "nearby" feature in the application. With less users, concern exists about the impacts on the social aspect of the game.

Regardless of whether users will stick to playing the game in the long run, Pokémon GO still remains a top-grossing application in most countries.

In addition, the future release of the game in many more countries, including parts of Asia and Africa, may improve the usage statistics for the game.

Source: BBC News

Engineers create first autonomous, entirely soft robot

Researchers at Harvard University led by Robert Wood and Jennifer A. Lewis have developed the first fully autonomous, soft-bodied robot. It is called the octobot, as it carries the shape of an octopus, a creature that moves powerfully without an internal skeleton and, hence, has been an inspiration for the soft robotics field. The research findings were published in the journal *Nature*.

Unlike previous soft-bodied robots, the octobot contains no rigid parts, such as batteries, wires, or circuit boards. Instead, the movement of the octobot is fueled by liquid hydrogen peroxide, which reacts with a platinum catalyst to produce gas. The gas then goes into the arms of the octobot and inflates them. A microfluidic logic circuit is used to control the amount of hydrogen peroxide that is turned into gas.

The simplicity, yet novelty, of the researcher's approach has laid the foundation for more complex designs in the future.

Source: ScienceDaily

Washington State permits killing of roaming wolf pack

After feeding on local livestock, an entire pack of endangered gray wolves are now authorized to be exterminated, according to a recent statement issued by the Washington Department of Fish and Wildlife (WDFW). At least 11 of the wolves had been roaming in Profanity Peak in Ferry County, including six adults and five pups.

Earlier this month, two female wolves were shot after wildlife biologists found that they caused the death and injuries of five cows in a grazing area. As a result, the cow attacks temporarily ceased. Since then, three more attacks by wolves has been reported, prompting the WDFW's decision to take further action. Despite protest from local conservation groups, the agency stated that in addition to its efforts to maintain the wolf population, it also had a responsibility to protect livestock from repeated attacks from the wolves

Source: U.S. News

Compiled by
SHARON WU

HOW THINGS WORK

The process of concrete: cement, sand, water mix together

KIRA PUSCH
Junior Staffwriter

Those of you with too much time on your hands may have found yourself wondering from time to time: how does concrete work?

We walk on it almost every day. It's used for roads, walls, columns, and housing foundations, to name a few applications. But what is it made of?

A fellow by the name of Joseph Aspdin, an English cement manufacturer, patented the method for producing Portland cement, a major ingredient of concrete, in the year 1824.

But the history of concrete isn't as concrete as you might imagine, since its origins date as far back as ancient Egypt and Rome and materials similar to concrete can be found in the pyramids and the Pantheon.

Aspdin's method has changed little since the 1820s and continues to be used regularly throughout the world.

Concrete is, both metaphorically and literally, a key ingredient in the foundation of modern day building infrastructure, valued for its high strength and ability to be formed into almost any shape.

In fact, over two billion tons of cement are produced each year!

Concrete is generated via a chemical hydration reaction between cement and water. It is important to note here that cement and concrete are not the same thing.

Cement is composed of limestone and clay, which are heated together at 1450 degrees Celsius in order to induce a reaction generating calcium silicates:

$$CaCo_3 + SiO_2 \rightarrow CaSiO_3 + CO_2$$

In this newly-reacted powder form, cement readily undergoes the previously mentioned hydration reaction that enables the creation of concrete.

Concrete is a mixture of cement, water, sand, and small rock particles.

It works as follows:

Cement grains are dissolved in a mixture of water sand, and small rock particles, releasing calcium and silicon ions in the process.

Once the ions spread throughout the mixture and reach a critical concentration in solution, they begin to precipitate out of solution and form a cement film around the small rock particles.

A general ratio used by many companies is one part cement to three parts sand to three parts small rock particles.

This cycle of dissolution, diffusion, and precipitation continues for about an hour, causing the film to grow and the concrete to strengthen until the precipitated grains begin to impinge on one another and the entire mixture solidifies.

It is at this point that the concrete begins to "set" and lose its fluid properties.

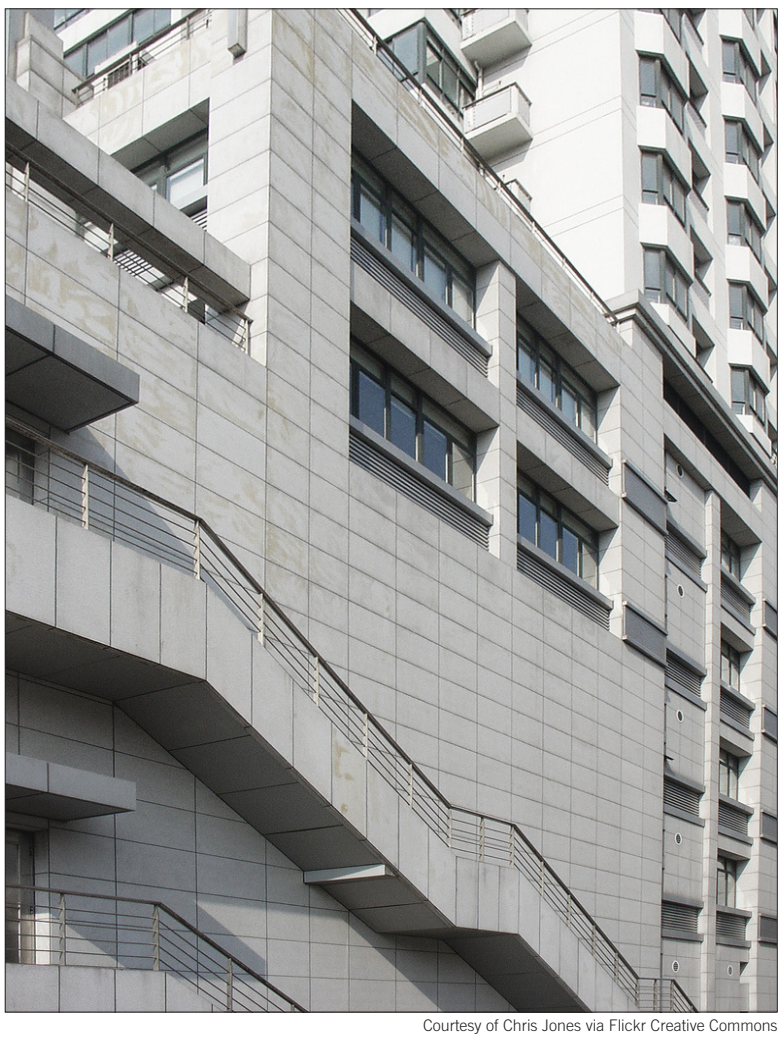
Hydration of concrete is visually complete in only a few hours; however, on the microscopic level, hydration can continue to occur for months or even years.

As you can imagine, concrete is an extremely complicated material with a fairly disorganized atomic structure.

Interestingly, although concrete is used nearly twice as much in construction than any other building material, the crystalline structure of concrete was only just revealed by scientists at the Massachusetts Institute of Technology in 2009.

As we begin to understand concrete's molecular make-up, we can make inroads into making concrete crack-resistant and more environmentally friendly.

With these benefits, concrete will continue to be used to build roads, houses, and foundations. The future of concrete is bright!



Courtesy of Chris Jones via Flickr Creative Commons

Augmented reality enhances, amplifies human capability

PHONE, *from A4*

overlay videos in real-world situations to explain how to perform a certain task. Drew Davidson, the director of the Entertainment Technology Center at Carnegie Mellon, is already receiving calls asking how to apply the game to education.

In the university press release, Davidson attributes the appeal of the game to students as simply being "because kids like it, and they care."

In regards to its application to education, he questions, "How can you take these mechanics and this idea, even if it's not Pokémon GO specifically, just to understand what's making it work? How do you get them that inspired and that engaged?"

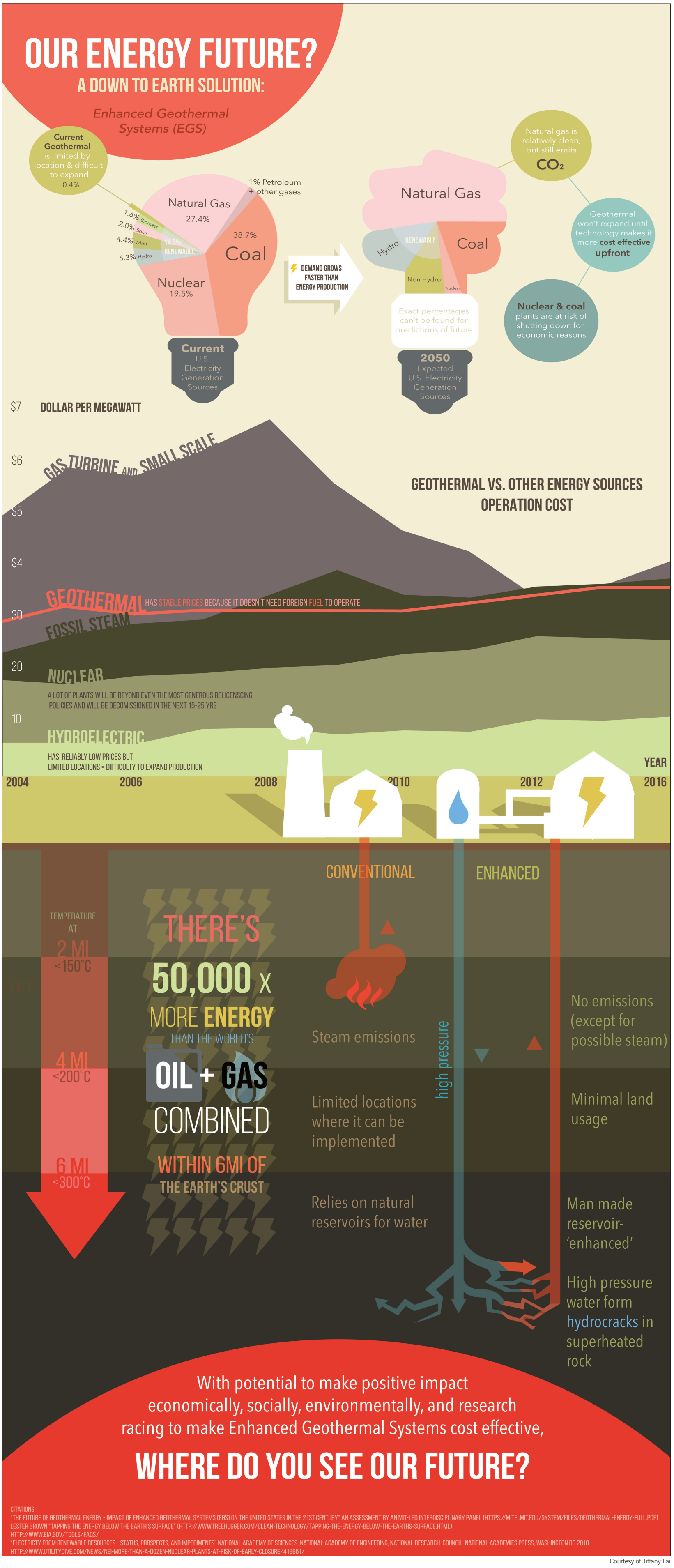
Augmented reality such as this is not without risk, though. Player safety has become a prevalent issue, with players chasing Pokémon through unsafe areas without taking into account reality's surroundings.

As a result, Pokémon GO's website has become riddled with warnings like, "For safety's sake, never play Pokémon GO when you're on your bike, driving a car, riding a hoverboard, or anything else where you should be paying attention, and of course never wander away from your parents or your group to catch a Pokémon."

Courtesy of Bakerella via Flickr Creative Commons

In addition, since the game's development, the company has received a number of lawsuits pertaining to homeowner comfort and safety. When developing the game, Niantic used user-submitted data from one of its other games — Ingress — to determine locations for Pokéstops and Gyms, and some of these locations didn't translate well from the virtual world to reality.

Augmented reality will undoubtedly change the way we interact with the world around us. The question will be whether or not the benefits of using it outweigh dangers.



Courtesy of Tiffany Lai

Energy in Earth is promising

ENERGY, *from A4*

creates thousands of new jobs, and revitalizes the economy while providing cheap, American grown energy that we can trust to be clean and available for many generations to come."

The infographic starts with a percentage distribution of the current United States electricity generation sources. Geothermal energy is currently the least used energy source, at 0.4 percent, and coal is currently the most used energy source at 38.7 percent.

The infographic moves to types of sources for electricity in the United States in 2050, claiming that geothermal won't expand until technology makes it more cost effective upfront.

The infographic then moves to the operation cost of geothermal versus other energy sources, stating that geothermal has stable prices because it doesn't need foreign fuel to operate.

"I think something risky our team decided to do was incorporate information about other types of energy, so that our infographic wasn't only focused on geothermal energy," Lai said in the press release.

"We wanted to be realistic. We depicted statistics about current energy sources and what their status would be in the future."

"In the visual storytelling of our infographic, we all agreed that while we had separate/different info blurbs to emphasize, we needed them to still be able to come together to form a bigger picture for both informational and visual coherence," Lu told The Tartan.

"From a selling point, we believed an infographic that forms one picture overall catches the viewers attention faster without turning them off with too much text. It's what I believe set our infographic apart; ours is easy to view and glean information from at varying distances. So even the uninterested, unengaged viewer, would be able to get something out of it because the information we provide doesn't need text to be understood."

The infographic ends with the claim, "With potential to make positive impact economically, socially, environmentally, and research racing to make Enhanced Geothermal Systems cost effective, where do you see our future?"

All three students credit the School of Design in helping prepare them for this competition.

"I am happy and grateful to have been able to contribute towards working to this ideal while being able to apply the skills learned in school," Lu said in an interview with The Tartan.

"It was quite nice to see a reminder of why I am incredibly grateful and happy to be a CMU design student," Lu continued. "The competition experience involved everything I loved from reading up on the current energy climate to organizing the informational hierarchy to having fun playing with the nuances in the color theme - the process I feel really reflected the type of bigger picture designing and process emphasized curriculum CMU Design cultivates in students."

"Winning this challenge made me proud to represent Carnegie Mellon Design," Lai said in an interview with The Tartan. "It also encouraged me to create or join more design challenges, because participating in this one was a fun and rewarding journey."

The top three teams received a cash prize of $2500 each. Since Lu, Lai, and Lee won the grand prize, they will also receive a trip to the Geothermal Resource Council's 40th Annual Meeting on Oct. 23-26 in Sacramento, California to present their infographic.

Forum

FROM THE EDITORIAL BOARD

Grad students deserve respect, right to unionize

The National Labor Relations Board (NLRB) has recently reversed its previous decision denying granted graduate students the right to unionize and giving them the rights of employees.

Their decision comes in the wake of a petition filed at Columbia University. The ruling was 3-1 in favor of graduate students having the right to collective bargaining. With all the work that seems to be done by graduate students, it seems to be the obvious response to allow them to behave as actual employees, but for the NLRB this decision has been anything but simple. One of the main reasons for initially not giving graduate students the ability to unionize was the "primary purpose" or "primary relationship" ideology. First applied to Adelphi University in 1972, this is the idea that graduate students' primary purpose on campus is to learn and that jobs such as teaching and working as a research assistant facilitate this. This decision was notably overturned in 2000 and then, in 2004, the NLRB returned back to the "primary purpose" justification.

The NLRB has maintained the idea that graduate students are not protected under the National Labor Relations Act (NLRA), only wavering from this opinion between 2000 and 2004. The NLRA is an act that protects the rights of employees to unionize, participate in collective bargaining, and go on strike. This act initially did not cover any employees of private universities, but this changed in 1970 when the NLRB decided that differentiating between commercial and noncommercial activity was not necessary. This is when the NLRB decided that private universities would be included in this jurisdiction.

The distinction between what is being done by graduate students for educational purposes and what is being done for commercial purposes seems to often be what causes the NLRB to go back on its decisions.

While graduate students are on campus to learn, they end up being so much more than just students while they are on campus, with not all of their tasks being essential to their learning.

As teaching assistants, they are often teaching introductory level material in their field. They're left with the task of going into detail and further explaining the material in ways that the professor often does not have time to do in lecture. With lectures being so large, it is the time during recitations with teaching assistants that really makes the difference for most students.

This experience can be useful for graduate students, but they are usually teaching information that they already have a pretty comprehensive knowledge of. The idea that they are furthering their education through this process does not really hold up well. They are teaching recitations for the benefit of undergraduate students, not necessarily for themselves.

In addition to playing a pivotal role in the education process for undergraduate students, graduate students also play an important role in the development of research at universities. While this is something that graduate students can benefit from educationally, it is also something the world can benefit from. So many ideas for products start as an idea between a graduate student and a professor in a research lab. For this, graduate students deserve to be able to protect their rights as employees.

Graduate school is not easy to afford, and for all the work that they do in addition to their classes, they deserve to be able to negotiate their salaries.

The indecisiveness of the NLRB is not only giving everyone whiplash, but it's also unfair to graduate students who are unable to negotiate their rights when these students play such an important role in undergraduate universities. Their rights are often ignored with much of the focus at many universities being placed on undergraduate students. Graduate students are the silent heroes that keep universities thriving. Even at schools like Carnegie Mellon that have roughly the same number of graduate and undergraduate students, they can be a separate entity that is often not heard by undergraduates outside of recitation. They deserve to have a collective voice, and that voice often gets drowned out amid the voices of professors and undergraduate students.

Graduate students have been treated as second-class citizens by the NLRB. They are students, but the work that they do whether it is for educational gain or financial incentives keep universities thriving and allow them to continue to receive grants to fund research. Research has shown that the ability to unionize will not harm faculty-student relationships, so there is no incentive for the NLRB to continually deny graduate students the same rights as other employees. This should be the NLRB's last decision regarding the matter. It's hard to believe that graduate students have only been given four years of the recognition that they deserve. Hopefully, this time, it will be a decision that sticks.

India Price/Online Editor

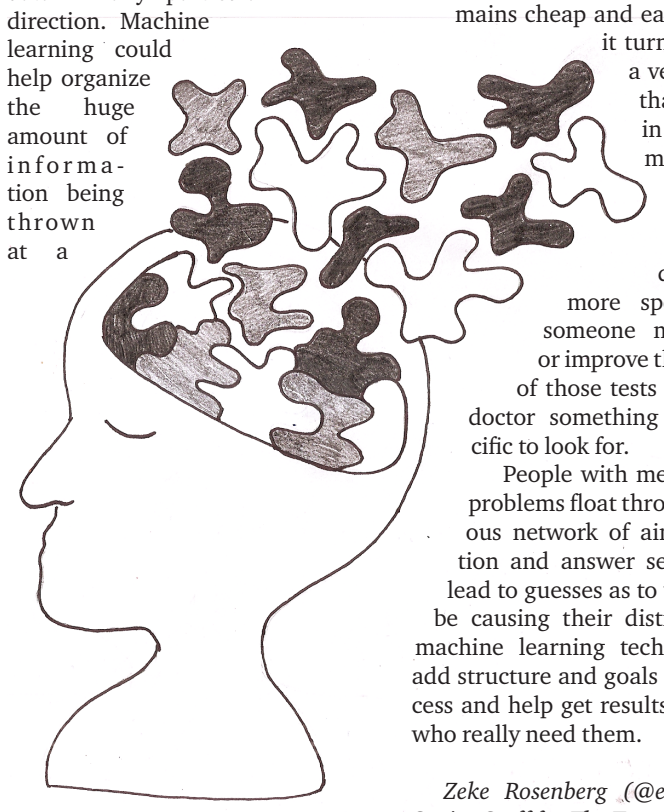
AI offers huge benefits for mental health field

ZEKE ROSENBERG

In August of last year a team of researchers from New York, Argentina, and Brazil published a proof of concept paper concluding that machine learning techniques that analyzed people's speech patterns helped predict the onset of psychosis. This idea has caught on with many other psychologists, including NeuroLex Diagnostics CEO Jim Schwoebel, who is using the idea to develop a tool to help diagnose schizophrenia. A data-based approach is a necessary step in the future of psychology and psychiatry and can help the field respond to its patients' needs more efficiently and efficiently.

All the way back in 2006, researchers from West Virginia University published a paper concluding that psychiatric diagnoses were not reliable, meaning that the same symptoms could turn up different diagnoses with different patients and doctors. They attributed the unreliability to the lack of standardization among psychiatrists and proposed a method of diagnostics. However, psychiatric care continues to be a highly individualized process with different doctors having different methods. If diagnoses mean different things to different doctors, then a patient never gets help because their symptoms mean one thing to their psychiatrist and another thing to a psychopharmacologist, making communication and collaboration between their care providers impossible. This disconnect prevents patients from receiving treatment, and makes the medical intervention a waste of time and money. These problems are compounded by the high price, both in time and money, of psychiatric care, and the fact that many doctors are overloaded with to many patients stuck in the endless cycle of failed diagnosis.

A lack of consistency is a problem machine learning is particularly useful for. Humans are excellent at discerning patterns where there are none through their own creativity and biases, so it's easy for psychiatrists to get trapped in their own intuitions despite the evidence. Machines don't have personal inclinations and basis, and won't weight data in any particular direction. Machine learning could help organize the huge amount of information being thrown at a psychiatrist with each patient and would make headway into standardizing the process of diagnosis so treatment can be standardized and distributed well. Even if the final result is a machine learning algorithm just narrowing the field to several disorders, the algorithm could save hours of time for psychiatrists who might be overwhelmed with as many as fifty patients relying on them for care or weeks of the wrong treatment for a person that the psychiatrist's intuition was wrong about.



India Price/Online Editor

Like any algorithmically based approach to anything, though, the idea of machine learning in psychiatric diagnostics is ruffling a few feathers.

The Atlantic feature on Schwoebel mentions two potential issues they have with his program. The first is that the artificial intelligence may not be able to pick up on cultural or personal differences. The second is a version of the first, saying that the findings of the algorithm will be biased towards particular demographic groups based on who is available for training the algorithm.

These problems could also be exacerbated because the stigma on mental health issues is stronger in some cultures than others. However, this is a reason that it might be difficult for a machine learning approach to be perfect, not a reason to abandon it. The algorithm has to be trained on as many people and as many segments of the population as it can. The process of picking up on a cultural speech pattern or accent is just using data — a person's accent or vernacular compared to their overall speech pattern — to reach a conclusion about whether this person is or is not likely to have a certain mental disorder. That is exactly what data-based processes do.

While psychiatry as a whole needs to be modernized and take advantage of many new approaches beyond just this one, the reflex to apply machine learning and other data-based techniques is the right one. The early returns say speech patterns are useful in some cases and if proof-of-concept papers come out supporting many symptoms detected by this technology, it can be a really powerful tool even if it is outstripped by more specific tests. It requires continued interaction between psychiatrists and patients, so that information is recorded and remains cheap and easy to get. If it turns out to be a versatile tool that is useful in diagnosing many mental disorders, it can help narrow down the more specific tests someone might need or improve the accuracy of those tests by giving a doctor something more specific to look for.

People with mental health problems float through a vacuous network of aimless question and answer sessions that lead to guesses as to what might be causing their distress. These machine learning techniques can add structure and goals to that process and help get results for people who really need them.

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THE TARTAN

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Mental health diagnostic schema in dire need of reform

THEODORE TEICHMAN
Photo Editor

For the past 60 years, there has been a harsh disconnect between the fields of brain research and brain treatment, and it is a disconnect that deeply impacts the quality, access, culture, and efficacy of mental health care today. While we have a plethora of new treatment options for mental illnesses, the primary issue that creates a bottleneck in treatment is in the diagnosis and treatment planning procedures.

The current mainstream of mental health diagnosis relies on the DSM-5: the Diagnostic and Statistical Manual of Mental Disorders edition 5. The DSM-5 creates definitions of mental illnesses that lump together people that have vastly different root causes, manifestations, and treatment responses together under a single category and often leaves people that don't fit enough core criteria of a single definition but are not mentally healthy out in the cold. This system is predominantly based on the external symptoms and traits a physician or patient notice during a visit. This is called a taxonomic classification.

Unfortunately, this system is limited in its ability to actually describe what is going on beneath the surface, something that is crucial if we are to reach a point where we can have highly specific and effective treatments for mental illnesses, rather than putting patients into generic categories, prescribing treatments, and finding out if they work only by trial and error.

Compounded, these issues mean that receiving a diagnosis as defined by the DSM-5 does little to actually suggest a method of treatment for the issue other than an archaic system of trial-and-error that has long since been abandoned as the first line of defense in most other areas of medical science.

For example, a symptom of anxiety can represent an endocrine disorder, a psychotic process, a drug response, or a currently recognized anxiety disorder, and each of these has a different treatment protocol, not including the variety of treatment protocols for the psychologically-based anxiety disorders.

The result is that patients have to go through rounds of medical tests and screenings in a process of elimination that eventually dumps them in the category of anxiety disorder if no other explanation turns up. In this way, anxiety disorder turns into a catch-all for problems we don't have medical tests for instead of a specific diagnosis with a clear treatment protocol like a patient would receive if they were diagnosed with pancreatic cancer or kidney disease.

What is necessary for the advancement of mental health care for the future is for the field of psychiatry to catch up to the advances in fields such as neuropsychology, molecular genetics, and neurobiochemistry. The present search for biomarkers, genetic predictors, or neuroimage markers for our existing system of mental illness categories is doomed to fail. These suffer at the same impasses as the rest of the DSM-5 diagnoses. With the overlap between different mental illness definitions and the extreme variety within each single definition, these DSM-5 categories are often not biologically discernible. What needs to change is how we classify mental illnesses.

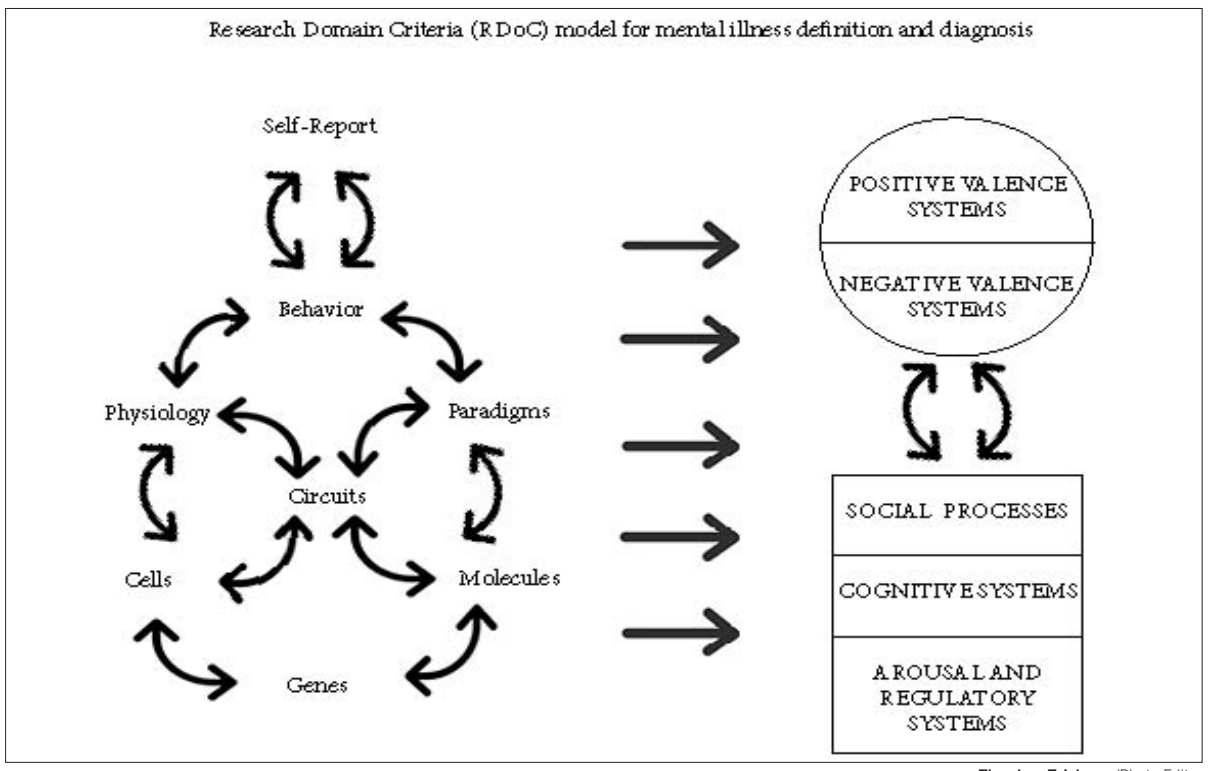
We need a system that classifies along a multidimensional matrix that accounts for all the ways a mental health disorders can manifest, from the genomic and molecular level to the way they take shape in emotions and social interactions. This is exactly what the Research Domain Criteria Initiative (RDoC) by the National Institute of Health is attempting to do.

Instead of viewing mental illnesses as collections of symptoms for a diagnostic label for ease of communication, the RDoC looks at the brain as a system of multiple different, interrelated but discernibly neural circuits that can be evaluated not only on self-reported or physician observed symptoms, like in our current system, but also described through variance in specific neuroimaging patterns, behavioral-cognitive tasks, and biomarker tests. The best part is that we have a substantial amount of data already available about these biomarkers and neuroimaging patterns; researchers have simply been trying to interpret them in the current taxonomic structure that invalidated these smaller subpopulations.

Through this system, researchers hope to eventually reach a point where the health care provider does not simply issue a diagnosis of schizophrenia, but instead is able to locate which specific neurotransmitter and receptors are specifically malfunctioning and in which part of the brain, allowing them to issue a specifically tailored treatment for that patient's condition. The RDoC will allow healthcare providers to see what is wrong in the patient's brain, not simply how it manifests.

With this new matrix of different core elements, the primary diagnostic tool will be based on biomarkers, neuroimaging strategies, patient-reported data, cognitive-behavioral task, and observed behavior all taken into consideration. The differences along each of these domains will relate to a specifically discernibly neural circuit difference and treatment procedure.

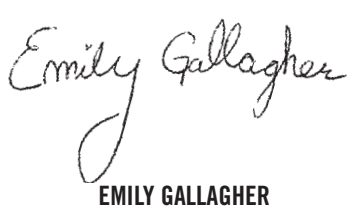
What will be required to improve treatment efficacy is a complete overhaul of the current system of classifying, diagnosing, and describing mental illnesses themselves. Until this revision occurs, mental health care will continue to misdiagnose illnesses and operate a non-targeted, trial-by-error method of treatment protocols, which in turn will jeopardize time, resources, and the well-being of patients all across the board.



Theodore Teichman/Photo Editor

All observable and testable symptoms or differences between patients (left) can be measured and related in order to find a diagnosis for each of the five RDoC neural systems (right), which combine to diagnose the patient holistically.

Beware common myth of College Experience



EMILY GALLAGHER

When you go to college it seems like every person you encounter has some trite piece of advice to offer you, like "these will be the best years of your life" or "make sure you get involved." My favorite, though, is when people talk about "The College Experience." What does that phrase even mean? It's something frequently cited, and it is treated as this American Dream-esque goal that, once you find it, will grant you perfect happiness and fulfillment throughout your college years. An experience shared by students across America breeding stories to tell younger generations about "the best years of your life." The whole concept of "The College Experience" is flawed from the start, beginning with the fact that there is not one singular way to achieve success and happiness in one's college years. Every person finds his or her own way, a path that is different from every other student's who has crossed a campus. There is also fault in calling one's time in college "the best years of your life," as if once college is over it's all downhill from there. There will be some great moments in college and some terrible ones. Moments of complete bliss and of utter devastation, just like every other time in one's life. To imply that college is a perfect four years of joy, is misleading and disappointing for every student who will find it to be otherwise.

For most students just starting at Carnegie Mellon, this is the first time that have been thrown together with students just as smart, just as motivated, and just as talented as they are. The students here are incredibly passionate about what they do and it easy to feel overwhelmed, overlooked, and left feeling like you some how are not "good enough" to be here. There is a lot of pressure on this campus to do more and to be more. People want to know what you will be doing in the future, how many units you are taking now, and how many activities you are involved in, and will tell you on the next breath how they are doing more.

The stress culture that exists at Carnegie Mellon is not something to be dismissed. Students will brag about how many units they are taking, how little sleep they get at night, and how their day is so packed they don't even have time to eat, as if starving yourself and depriving yourself of sleep is a sure pathway to success. It is something that is so easy to get swept up in. It is easy to fall into the trap of overworking yourself when you are surrounded by people who are doing the same. You have to take care of yourself. You cannot succeed in anything if you do not first make time to make sure that you are healthy; mentally, physically, and emotionally. Don't be afraid to admit to yourself that you may need to take a step back or that you need help.

It's okay to feel lost and scared going off to college; it's an enormous change in anyone's life. You need to be true to yourself and take care of yourself. You cannot help yourself if you don't know yourself. Allow yourself to be vulnerable, honest, and open to the world. It's scary, especially because before coming to college most students have lived in this world they have known since childhood, surrounded by people who know one version of them, which may or may not be the truest version of themselves. It is terrifying to bear your soul and show the truest version of yourself to the world, but it is the only way for you to discover the person you really are.

After completing your freshman year, you will not have erased every remnant of yourself and be this new person who is unrecognizable from your former self in every way, yet it cannot be denied that college changes you. Those changes come through self discovery. They do not come from throwing away everything that has made you you up to this point, but from embracing the true version of yourself and allowing yourself to grow into that person.

Don't be disillusioned into believing that there is some formula for how to go through college. There is some truth that exists in clichéd advice people will give you — after all, they are clichés for a reason — but in the end "The College Experience" is not some stock term that can be applied to any student; it is not a crazy fun time the whole way through, nor is it four years of homesickness and loneliness.

College is simply a new chapter in your life that will have some good times and some bad. For most students it is their first time living alone, the opportunity to live as an independent adult. It is an adventure; be open to the journey.

Emily Gallagher (@egallagh) is a Staff Writer for The Tartan.

Climate change changes landscape, threatens flood of climate refugees

SYDNEY ROSLIN

Shishmaref, Alaska, is a village with a population of approximately 600, an Inupiat community on the small barrier island of Sarichef, north of the Bering Strait. The village is rather unassuming, with a single school, three main roads, a church, a post office, a few stores, and a collection of small houses. Yet this small, unassuming village is running out of space on their island, not because of human expansion, but instead because of the erosion of Sarichef island, erosion that is being attributed to climate change.

This is a problem that has plagued Shishmaref for decades — since 1969, more than 200 feet of shore has been eaten away from Sarichef island, according to a study published in February. Storm surges and flooding have caused loss of buildings and infrastructure, and officials have spent large amounts of time and money trying to save the island, totaling over $27 million dollars on coastal protection measures from 2005-2009.

Last week, in the unofficial results of an election, the people of Shishmaref voted 89 to 78 to relocate their town, electing to move to one of two sites on the mainland. They join the list of aptly named "climate refugees," people who are being forced to relocate their homes and lives due to rising sea levels and storm surges caused by global warming.

Rising sea levels and extreme weather patterns are two of the most visible examples of the effects that global warming has had on the environment. As global temperatures rise, polar ice caps begin to melt, adding water to the Earth's oceans. Sea water also expands as it warms, further contributing to the rising sea levels. Furthermore, as the air warms, it is able to hold more moisture, leading to heavier rainfall events that lead to further flooding and more extreme storms. The effects of these changes can be seen worldwide, and it is predicted that by the year 2050, as many as 200 million people could be displaced due to climate change.

India Price/Online Editor

It is easy to look at environmental issues such as air pollution, water pollution, and deforestation and see the extent of the negative impact that humans have had on our environment.

It is much harder to imagine our effect on something as massive as the oceans, or on something as seemingly permanent as the land. After all, we can watch slash and burn farming, we can see sewage be dumped into a water source, and we can understand a direct cause behind a very visible problem.

However, it is difficult to instill fear with a few extra inches of seawater. The rising sea levels are problems that are hard to witness before it is too late.

It is often not until a major storm breaks, or until the flooding gets bad enough to make an area uninhabitable, that we realize a problem existed. However, there is evidence all around us. There is Isle de Jean Charles, a Louisiana island that was granted $48 million dollars in January to relocate its residents to safer ground after the island experienced flooding, saltwater intrusion, and shoreline erosion that has made the island uninhabitable. There is Shishmaresh, whose island home has been whittled down to an island a quarter of a mile wide and two miles long.

These problems are not some distant threat, they are staring us down in the face. They are problems that are making themselves visible more and more each year, accumulating years of chipping away at shorelines until it is seen in the disappearance of land, property, and community. Yes, today it might be an island in Alaska or an island in Louisiana with a population smaller than a suburban high school, but tomorrow it is the coast of Florida, it is New Orleans, it is the more than 1,000 American towns that are threatened by rising sea levels.

Luckily, for Shishmaref and for Isle de Jean Charles, relocation is an option especially suited for small populations. But what happens when the displacement doesn't affect a few hundred people, but instead affects 200 million? Will we be able to handle it? It is time to take action now, to plan now, to look for solutions now, because if we wait for the problem to show itself, it will be much too late.

Sydney Roslin (@sroslin) is a Staff Writer for The Tartan.

Upcoming Events

Men's Soccer
vs. Muskingum
at Carnegie Mellon
Sept. 1, 7 p.m.

Football
vs. Wash. U
at Carnegie Mellon
Sept. 3, 12 p.m.

Men's Cross Country
Duquesne Duals
at Schenley Park
Sept. 3, 9:30 a.m.

Women's Soccer
vs. Franciscan
at Carnegie Mellon
Sept. 2, 7 p.m.

Volleyball
vs. McDaniel
at Gettysburg, PA
Sept. 2, 3 p.m.

Women's Cross Country
Duquesne Duals
at Schenley Park
Sept. 3, 9 a.m.

PAC Preseason Football Poll

1	Thomas More
2	Wash. & Jeff.
3	Case Western
4	Westminster
5	CMU
6	Bethany
7	St. Vincent
8	Waynesburg
9	Geneva
10	Thiel
11	Grove City

Courtesy of CMU Athletics
Carnegie Mellon senior runner Ryan Archer makes his way past the crowd at a cross country event last season.

Courtesy of CMU Athletics
Senior lineman Tyler Reid celebrates a touchdown with graduate Andrew Hearon during the 2015 season.

Riot Games scolded for poor decisions in esports league

ALEX WOOD
Sports Editor

Over the last week, the community of the largest esport in the world, League of Legends, became angry after a series of events culminating in a public relations disaster for the developer of the game, Riot Games. The calamity started after an interview by thescoreesports.com with a professional player, Yiliang "Doublelift" Peng, in which Doublelift discussed the current problems with the way Riot Games is handling its competitive scene. Namely, Doublelift criticized the developer for releasing large updates, also known as patches, immediately before large professional tournaments. These large updates can have drastic effects on play at the professional level, and forces teams to adapt to an entirely new style of play that best fits the current update. The best style of play fluctuates with each patch and is referred to as the "meta." A large, game changing patch right before a large professional event is similar to change the rules of a sport like soccer right before the world cup. The problem with this in League of Legends is that the meta of a new patch may favor a team that was weak in the previous meta, and vice-versa. This can, and has, changed the entire landscape of tournaments and the players are not happy about the timing. Most players in the community agree that some level of change is healthy, but the general rules of the game should stay the same when important professional tournaments are played.

Doublelift's short interview gained traction in the online community, and more well-known people in the esports world began to speak on the same issue. Christopher "MonteCristo" Mykles, a popular League of Legends caster for South Korean network OGN, spoke in more depth about the issue of patch timing as well as Riot Games' failure to offer industry standard rates to freelance caster for international events.

In the midst of all this criticism, Riot Games co-owner and co-founder Marc Merrill, took some time out of his day to respond to a post on reddit.com discussing these issues. In his post, he criticized Andy "Reginald" Dinh, one of the most important figures for the development of esports and owner of one of the most successful esports teams, Team SoloMid, for not paying his players enough, and "losing money on other esports." This statement, among a slew of other blatant fallacies triggered a massive angry response from important members of the community, and for good reason.

Perhaps the most concerning issue is the stifling of sponsors by Riot Games in their plot to control every single detail of the League of Legends esports scene. Multiple big names in the community spoke out about Riot Games' unwillingness to allow teams to share revenue from sponsors, which is a major source of income for teams in all other esports games as well as professional sports. The National Hockey League would not exist if revenue sharing from sponsors did not exist. The community was eventually informed that League of Legends is, in fact, the least profitable of the major esports games for this very reason.

Although he edited his posts and retracted some of his statements, the damage was done and the community was bearing their fangs at him. Some of the most influential people in esports called him out for his own misunderstanding of the industry, and rightly so. Some were calling for player unions to be created, and drastic change will be needed to repair this hole in the trust of the community.

Not only that, but the longevity of Merrill's game is at stake as well. League of Legends is already one of the longest lasting esports in history, next to StarCraft: Brood War.

Every game has a life span, and it is up to Riot Games to preserve their game for the future. If they continue to communicate poorly with the community and make unfavorable decisions for players, the game will not last.

Riot Games can choose to extend their games longevity by appealing to their players. The community of League of Legends is larger than ever, and it will take a considerable amount of time for the game to fade away.

Courtesy of Chris Yunker via Flickr Creative Commons
The headquarters of Riot Games in Los Angeles, California. Regular season matches are played here weekly.

Sports

Tartan football and soccer teams begin the 2016 season

ALEX WOOD
Spots Editor

This Saturday Sept. 3, the Carnegie Mellon football team will take on the Bears of the University of Washington at St. Louis. The last time these rival teams met was almost a full year ago. The Tartans did not fare well in that contest, losing 45–24.

The Tartans would lose two of their next three games after that before going on a seven game win streak to close out the season.

The Tartans transformed in the weeks after playing Washington University, putting up record-breaking offensive numbers with the help of star junior running back Sam Benger. With that in mind, the Tartans are expected to beat the Bears in the first competition of the year. With a large group of returning players on the field for the Tartans, the veteran experience coupled with the chemistry built in last season's win streak could carry the Tartans to another record-breaking season.

While the Tartans finished last season on a strong note, they will be looking to improve on their success and eventually get into the NCAA tournament to play for a national championship. Saturday will be their first test of many.

Courtesy of CMU Athletics

Star junior running back Sam Benger makes his way down the field against Washington University of St. Louis.

Courtesy of CMU Athletics

Players on the Carnegie Mellon men's soccer team celebrate after scoring a goal during the 2015-2016 season.

The Carnegie Mellon men's soccer team will take on Muskingum University at home on Thursday, Sept. 1. If last year's meeting between these two teams is any indication of how this year's match will go, then the Tartans are expected to win handily. These teams met last year on the exact same day, and the Tartans dominated Muskingum by a score line of 8–0.

The Tartans did not end last season on a high note after losing their final two competitions, but after an offseason of hard practice they are surely hungry to get back on a roll. Muskingum should be a nice warm up game for the Tartan men, allowing them to flex their muscles and go into the season with an aura of confidence about them. They should not get complacent however, because Muskingum will still show up to play and cannot be underestimated. If the Tartans just play their game calm and controlled, they should win easily.

Carnegie Mellon's women's soccer team will take on Franciscan University at home on Friday, Sept. 2 at 7 p.m. This is an interesting matchup because these teams did not meet at all last season, so it's really anyone's game.

The Tartan women finished last season with an astounding 17–2–1 record, so they are not used to losing. That said, their season was cut short in the third round of the NCAA tournament in a heartbreaking overtime loss to Calvin, 1–0. That left the Tartan women with a bad taste in their mouth, and they'll be looking to cleanse their palette in the first match of the season against a brand new opponent.

The women of Franciscan University finished last season with a 6–8–2 record, so they can only improve on last season. If the Tartan women perform anywhere close to the level they did last season, they should handily beat the Barons of Franciscan University and begin the 2016 season on a high note.

Tartans partner with ESPN to broadcast home games

ALEX WOOD
Sports Editor

On Aug. 22, the Carnegie Mellon athletics department announced a partnership with ESPNWilliamsport.com to broadcast the home competitions of the Tartan football team, as well as the men's and women's basketball teams.

ESPN Williamsport is the primary station and online platform for multiple professional sports teams, as well as numerous NCAA colleges and universities in four states.

ESPN Williamsport owner and general manager Todd Bartley noted, "The prestigious name of Carnegie Mellon University was enough to get my attention when the opportunity to serve Tartans athletics presented itself." The recent success of Carnegie Mellon's sports teams was also surely a factor in the formation of this new partnership.

Carnegie Mellon director of Athletics Josh Centor has high hopes for this partnership, and said, "We expect that this collaboration will allow us to share our student-athletes' achievements with a broader cross-section of the Carnegie Mellon community."

Bartley announced that coverage will begin on Sept. 3, as the Tartan football team takes on the Washington University of St. Louis in Gesling Stadium.

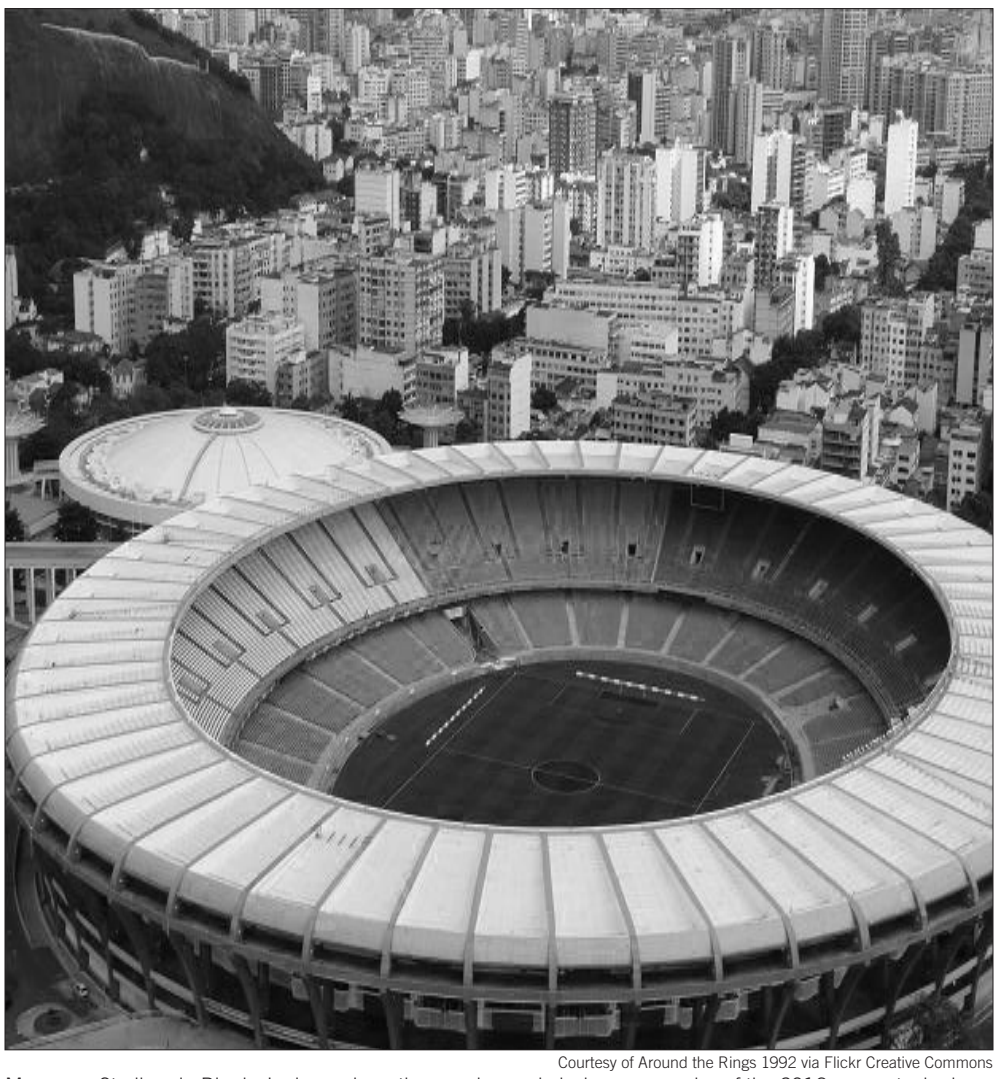
Brian Collins will announce the game for ESPN Williamsport. On the opportunity to call the games for the Tartans, Collins said, "Just the absolute tradition of this prestigious school and the rich history has me excited and privileged to be a part of it this fall." Collins has casted for multiple sports at every level of collegiate play, and has more than 20 years of experience. Collins also has multiple coaching accolades along with his experience in broadcasting, and can use his experience to improve the broadcast team for the benefit of the viewers. This partnership can also benefit the Tartan sports teams, giving them public exposure and allowing for the growth of the Tartan brand. Not only that, but fans of Carnegie Mellon's sports teams will be able to watch these competitions from anywhere in the world.

The Carnegie Mellon webcasts will use the audio feed from ESPNWilliamsport.com, and an audio only stream will also be available through ESPNWilliamsport.com and http://athletics.cmu.edu.

Courtesy of CMU Athletics

Senior center Chris Shkil jumps for the basket against Brandeis. He should be a force in the paint this year.

Olympic athletes earn cash prizes based on countries



Courtesy of Around the Rings 1992 via Flickr Creative Commons

Maracana Stadium in Rio de Janiero, where the opening and closing ceremonies of the 2016 games took place.

PAULINE TING
Assistant Online Editor

As the Summer Rio Olympics ends, a number of superstars have come out with more than a handful of medals: Michael Phelps, Katie Ledecky, Simone Biles, and Usain Bolt to name a few. After years of rigorous training, endless sacrifices, and often multiple injuries, attending the Olympics is the measure of ultimate success; winning a medal is the icing on the cake. However, not all prizes are created equal.

Besides fame and an Olympic medallion, Olympic medalists can also win cash prizes from their country's National Olympic Committee. In the United States, gold medalists will earn $25,000, silver medalists $15,000 and bronze medalists $10,000. The United States Olympic Committee gave out $1.8 million in cash prizes for the 105 medals won by American athletes.

However, these cash prizes are taxed by the United States government based on the athlete's income bracket. Simone Biles, who won 4 gold and a bronze medal will have to pay $43,560 in taxes and Michael Phelps will have to pay up to $55,540.

So which country offers the most money for winning gold? Singaporean Joseph Schooling, who defeated Michael Phelps to win the gold in the 100 meter butterfly will receive one million Singaporean dollars (US$743,108), the largest prize money from any country. Indonesia offers $342,000 per gold medalist and both Azerbaijian and Kazakhstan also offer a whopping $250,000 for each gold medalist.

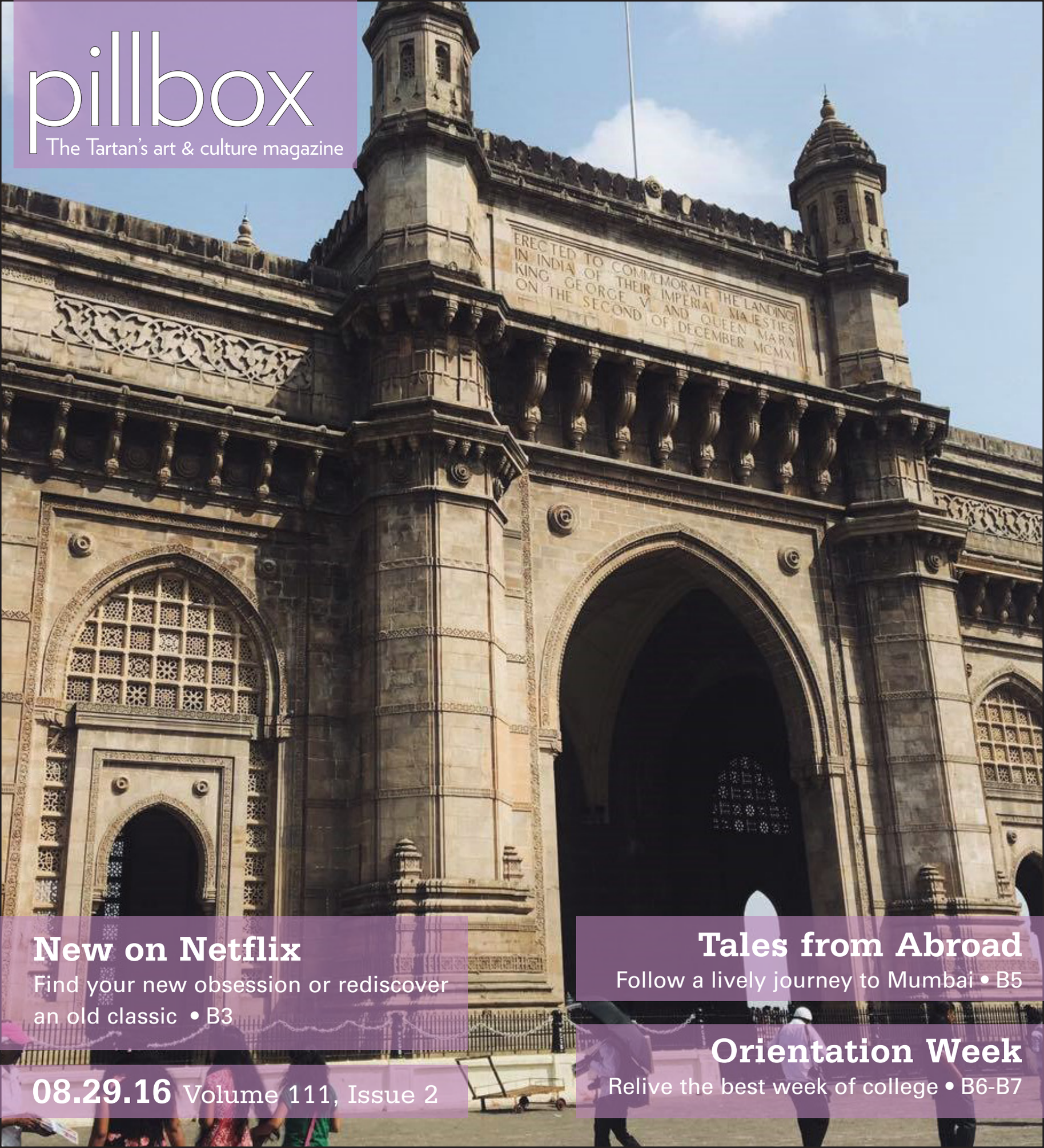
Prizes can extend past cash as well. In the past, Russia has offered luxury cars to Olympic medalists and in South Korea medalists can be exempt from compulsory military service. Germany offers a lifetime supply of beer and Belarus offers unlimited sausages.

However, if you are from Great Britain, Norway, Sweden, or Croatia, don't expect any prizes at all. None of these countries offer cash bonuses for winning an Olympic medal.

So if you're looking to become an Olympic athlete and make big money, the country you compete for makes a big difference in what you could earn. Of course, Olympic athletes generally cannot choose what country they compete for so they have to take what they can get. Regardless of cash prize, medal-winning Olympic athletes are always held in high esteem in their home countries, and some would say respect is the ultimate prize.

pillbox

The Tartan's art & culture magazine



New on Netflix

Find your new obsession or rediscover an old classic • B3

Tales from Abroad

Follow a lively journey to Mumbai • B5

Orientation Week

Relive the best week of college • B6-B7

08.29.16 Volume 111, Issue 2

...this week only

regulars...

...diversions

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Here's what's new on Netflix

From sharks to Oscar winners to your next binge-watch

My parents' Netflix account has been just as (if not more) integral to my college education as Blackboard. President Jed Bartlett, the Property Brothers, every Disney princess, and Tim Riggins have been there for me during every late night grind, and I'll never forget the memories we've made and essays we've phoned in.

But we always look to the future. Another year of college is upon us, and I need more shows and movies to keep me going when the going gets tough.

Luckily, Netflix released the list of titles we can look forward to in September, and I can already imagine these on the split screen next to another 12 tabs.

Bill and Ted's Bogus Journey

Ideally Netflix would do better for us and get the Excellent Adventure, but during the late nights when only silly stoner humor can remedy the existential dread, the Bogus Journey will do just fine. In this sequel, the duo travel to literal hell and back to fight off a revolutionary traveling back in time from the dystopian future their music has created. This crazy chaotic comedy will transport you to another dimension, making it easier to pretend nothing really exists. (Available 9/1)

Hoot

I can't wait to relive the pre-pubescent glee this movie gave me when it came out in 2006. Not only did I feel superior because I read the chapter book, I got to watch super heartthrob Cody Linley and adorable young Logan Lerman portray very sensitive, kind, thoughtful, animal-loving boys that would love me if they just met me. Also there's something about an owl. (Available 9/1)

Jaws, Jaws 2, Jaws 3, and *Jaws: The Revenge*

This is one for an all-day Saturday marathon when getting out of bed is just too challenging to bear. Make as many snacks as you can carry in two trips max and enjoy as the highly-regarded original *Jaws* film spirals out of control faster than my sophomore spring into a 1987 Golden Raspberry nominee. (Available 9/1)

Crash

Sometimes it is important to cry. Crying is good for you, and it feels good. There are a few movies that are guaranteed to get me to cry every single time, even though I know what's coming, and I often watch them on purpose because I like to feel things: *Rent, Titanic*, and *Crash*. *Crash* is raw, challenging, depressing, and still topical in Trump's 2016, 12 years after it stole the Oscar from *Brokeback Mountain*. Still outraged about that. (Available 9/6)

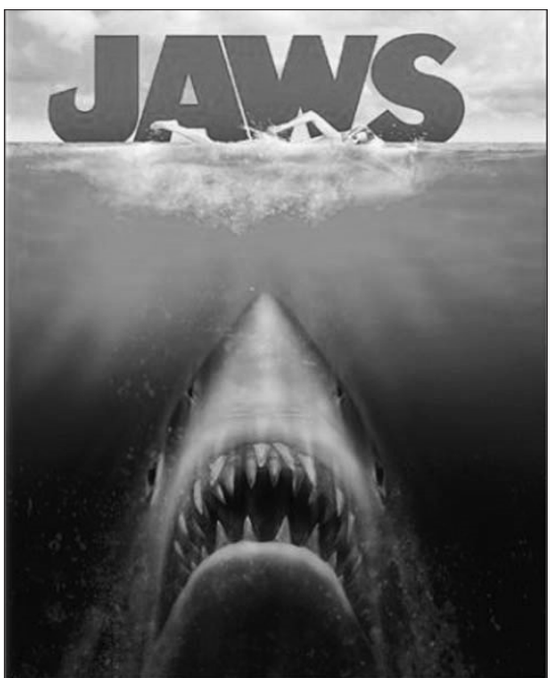
Zootopia

This is for the opposite of *Crash*, when you're craving bright colors and plots written for small children. *Zootopia* is Disney's latest gift to humankind, telling the story of a small rabbit from a farm town who dreams of becoming a police officer in the big city. It's a lighthearted re-rendering of the "don't judge a book by its cover" message, but I plan to add a bottle of pinot noir to the occasion to make the ride even more fun. (Available 9/20)

Easy S1

This is another one of Netflix's original shows, which have been unbelievably successful considering the alarming rate at which they keep pumping them out. This one will be an "8-episode anthology drama series" that "explores diverse Chicago characters as they fumble through the modern maze of love, sex, technology and culture." I find this description vague and terrible, but the cast includes Orlando Bloom, Dave Franco, Jake Johnson, and Hannibal Buress, so I'm willing to watch just in case there are any good shirtless scenes. (Available 9/22)

Sarah Gutekunst | Publisher



Courtesy of Flickr Creative Commons

Jaws, an old favorite, premieres on Netflix this fall.

Advice for awkward people

About your post-break-up sexual awakening

Dear Sarah,

I recently went through a bad break-up, but the silver lining is that it's led me to a sort of sexual awakening. He was the only person I've ever been with, but he was terrible. Meaningless hookups are more than just fun, they make him a smaller percentage of my list.

As excellent as these new experiences have been for me and my twisted grieving process, not all hookups are created equal. Sometimes these random duds just don't do it for me. These noobs don't even consider any appetizers before demanding the entree. I just can't make myself salivate enough to make it palatable, and it's simply unpleasant. I just lie there praying for dessert to come already.

I'm not really willing to give up on my unhealthy coping mechanism just yet, because I think I'm just skimming the surface of this phase. Is there something I should be doing? How do I wreck myself without actually physically wrecking myself?

Sincerely,
Distressed Restless Yinzer

Dear DRY,

I was just recently watching *Keeping Up with the Kardashians*, and in episode eight of season five, Scott and Kourtney also tackled the issue of vaginal dryness, and, in my opinion, poorly. They were so ashamed to be seen buying lube that The Lord paid a stranger to go in and do the dirty work while he and Kourtney hid discreetly in the Benz. Nobody should be ashamed to use lube.

In fact, I might go so far as to suggest that all women carry lube in their purse just in case. Not to mention, alcohol is scientifically proven to make things even worse. Imagine waking up with a hangover. Now imagine waking up with a hangover in a guy's bed with a sore hooha.

It's better to be safe than chafed; lube can be the difference between inflammation and gratification. So don't be a noob, insist on lube.

Okay, rhyming aside, you deserve to enjoy hooking up just as much as — if not more than — your partner. Even if he isn't as generous as he should be, the bar should be set higher than "not in pain."

Hooking up can be fun, but don't be stupid. Don't drink too much. Text your friends the address of where you are so you don't get abducted. Use protection and lubrication.

Happy trails to you,
Sarah

Need advice? Send queries to *advice@thetartan.org*.

Find the heaphones for your audio needs

Whether it's wireless or noise cancelling, let us help you find your next pair of headphones

A long time ago, most of us didn't even think about what we were listening to our music *on*. The stark white earphones that came with your iPod (like I said, a long time ago) were all that most people even considered. Today, things are decidedly different. There are so many options to choose from, and so may different *types* of options to choose from, that picking a pair of good quality earphones is often a more agonizing decision than picking an apparently far more complex product such as a phone or a laptop. The flip side, of course, is that most products you can buy are exponentially better than the old clunky white Apple cans. This situation isn't helped by the fact that what you're buying — good sound quality — is decidedly subjective. While some people love bass heavy Beats, others despise them for their lack of balance.

Here we provide some basic buying advice for mid to high end personal audio gear. If you're finally looking to ditch that pair of iPod earbuds, join the dark side and invest in a nice pair of earphones for yourself, read on:

Shape & Size:

Earbuds: These are the tiny things that go inside your ear. The iPod earphones are an example of these. They're typically very convenient and can be worn pretty much anywhere, including during physically strenuous activities such as a workout. Most high quality earbuds today are "in-ear" earbuds. This means they fit reasonably deep inside your ear canal, creating a vacuum seal that prevents outside sound from leaking in. The biggest disadvantage of earbuds is that their tiny size puts a hard limit on how good they can sound. They can never produce the wide soundstage, or the deep and warm bass of a pair of large headphones.

Courtesy of Wikimedia Commons

Earbuds are perfect for a quick workout or the library.

Headphones: Headphones are much bigger. The medium sized ones typically sit flush on a user's ears (called on-ear headphones), and the massive ones go around and completely enclose a user's ear (called around-ear headphones). For personal listening, nothing can compete with a great pair of around-ear headphones if your only priorities are sound quality and comfort. When done right, these things can sound like a live band playing on a stage right in front of you. What you compromise on, obviously, is portability. Good luck wearing one of these on a walk to class, or better yet, to a workout. Also, while these things are great at isolating you from the outside world, they tend to leak your music to the outside world. So listening in any reasonably quiet space, such as a library, is often out of the question.

Priorities:

The most common rookie mistake that one can make is to buy a pair of earphones gauging sound quality and sound quality alone. Earphones are things that are going to be on or around your ears for extended periods of time. Are they comfortable? Do they come on and off easily? Are they too heavy or too light? It pays to think about these things when buying a pair. Equally important is how they look. There's no point having a spectacular pair of earphones that you're embarrassed to wear in public because they're neon yellow with skull logos all over. Ultimately, of course, the most important factor one has to consider is price. The good news, however, is that the law of diminishing returns holds true particularly strongly when it comes to audio gear. The difference between a $20 and $100 pair of earphones will be more significant than the difference between a $100 and $300 pair, and the difference between a $300 and $1000 pair is even less. Unless you're a real audiophile, or have way too much money to burn, don't even think about earphones that go over $200 — $300.

Marketing and Fact:

Noise Cancelling vs Noise Isolating: Noise cancellation was a pretty neat feature introduced by Bose (still the pioneers in the field) about a decade ago. The idea is that in addition to your music, your earphones emit sound that effectively 'cancels' the ambient noise. This results in an unbelievably, almost creepily serene listening environment. Today, several earphone manufacturers have products that implement this feature. The flip side is that Noise Cancellation uses a lot of power. Earphones that have this feature will usually have a built in battery that needs to be charged every once in a while. Another, more purist argument

Coutesy of Wikimedia Commons

Wired headphones are the best for at-home listening

is that by introducing extra sounds into the output, these earphones don't accurately recreate the listening environment. Noise Isolation, on the other hand, is just a fancy word for 'fits tightly and blocks out unwanted noise'. Noise Cancellation is a really cool feature to have. Noise Isolation is something that any decent pair should have by default.

Wireless vs Wired: This really comes down to the practicality vs sound quality debate. Even today, a wire is much better at transmitting audio data from your listening device to the earphones than Bluetooth. A comparatively priced wired pair will sound significantly better than a wireless pair. Another disadvantage of wireless can be pairing. You've got to switch on Bluetooth on two separate devices, select each device from the other, and hope that a connection is established. With wired, you can just plug and play. That said, not having a cable going from your pocket (or bag) to your face is a huge convenience, especially when you're exercising or generally moving around.

Reading & Research:

Most well established earphones have a ton of reviews online. Some publications that I look to for advice include CNET, Wired, and Engadget. That said, sound, comfort, convenience and pretty much everything else that one looks for in a pair of earphones is very subjective. There really is no substitute for going down to a local store and trying out a pair to see how they fit in/on your ears and gauge whether you personally like how they sound.

Abhishek Tayal | Pillbox Editor

Tales from abroad: Feeling alive in Mumbai

Friendly, warm-hearted people and honesty about imperfections give Mumbai a vibrant feel

You know that moment at the concert when your favorite song plays and there is a tangible shift in the atmosphere? An energy starts to build, connecting everyone and synergizing with your heartbeat. You feel the blood dancing in your veins as your heart pumps to the rhythm. In that single instance, everything begins to transcend and you feel truly, unimaginably alive. That's how I felt for an entire three months during my summer spent in Mumbai — alive.

Mumbai, India is a place like no other. The city where dreams become reality and reality seems like a dream, it is known for being India's financial capital, tinsel town, and cultural melting pot. Not only is it home to the Bombay Stock Exchange and Bollywood, but also to 13 million inhabitants of different religions, classes, ethnicities, and backgrounds. Its architectural marvels, historical monuments, and mouthwatering street food are only a part of what this vibrant city has to offer.

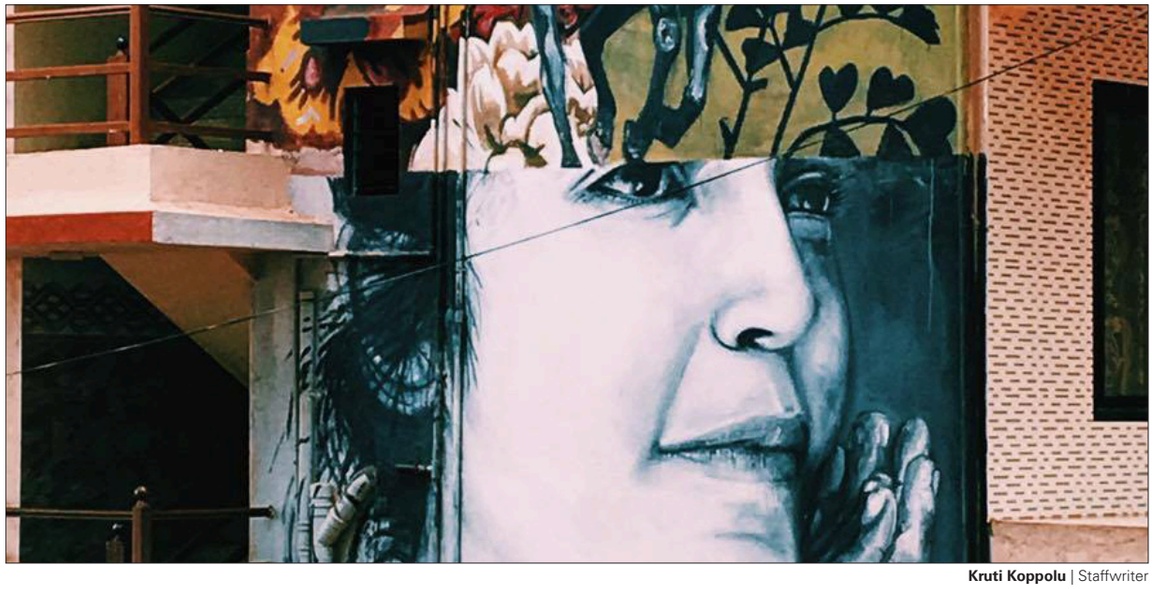
To summarize my time in Mumbai would be like trying to catch moonlight on my palm. By far the biggest impact on my summer was made by the people of the city. Coming to this city for the first time, completely unaware of everything and having a very limited knowledge of the regional language, I didn't have high expectations for how my three months were going to pan out. But all of that quickly changed as I started to interact with the people around me. One of the kindest people I met was the caretaker of the guesthouse where I was staying. Originally from Nepal, he works in Mumbai to support his family that currently lives in their native village, thousands of miles away. Every morning I would be greeted with a shy smile and a delicious breakfast, and over dinner he would attempt to teach me Hindi while I tried to teach him English. Those broken bilingual conversations, in which he made an effort to reassure me that I would be okay, warmed my heart.

Another group of people that changed my summer for the better were the friends I made at work. I never imagined that I would connect with people at the work place, let alone make lasting friendships that I can't imagine my life without now. From sharing strong opinions, corny pickup lines, and plates of food at lunch, to spontaneously going for stand-up comedy shows or go-karting after work, to surprising each other with red velvet cupcakes, I somehow managed to meet "my people." One day that really stands out was when I was incredibly sick and stuck at work till 7 p.m. One of my friends took me to the hospital, bought my meds, fed me dinner and tucked me into bed all while I was struggling to remain conscious. It's the big things like these, but also the little things like singing karaoke and eating pizza in the car while stuck in traffic for over two hours or taking a break from work to go on a walk together, that turn friends into family and a city into a home.

I've found that the big hearted, strong people of Mumbai are just a reflection of the city itself. The city stands strong in its monuments such as the Gateway of India, a symbol of how the country drove out British oppression. It also stands strong in the face of terror, by rebuilding the iconic Taj hotel after the horrific terrorist attacks on Sept. 26, 2008, and showing the world that despite the bullet holes, it will rebound. It stands strong in respect for religion despite the political and social mechanisms driving the country apart and through its local railway system that transports six million people every day. Most importantly, it stands strong in its honesty to the world. Its glittering skyline coexists with Dharavi, one of the largest slums in the world, home to one million souls. The city doesn't back away from its imperfections and eyesores, but embraces them with an openness that is unmatched.

My favorite memory from this summer was when my family came to visit and we went to the beach at night. You could hear the sound of the waves intermingling with sounds of laughter. You could feel the pull of the dark ocean in front of you and the lights of the thriving city behind you. Above all else, you could feel the pulse of the city, the frequency connecting everyone. In that moment, absorbing it all with my family by my side, is when I knew Mumbai had given me the most precious gift — the ability to feel truly, unimaginably alive.

Kruti Koppolu | Staffwriter



Kruti Koppolu | Staffwriter

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Mumbai is home to a variety of diverse experiences, including the Bombay Stock Exchange, Bollywood, and historical monuments just to name a few.

Incoming first-years "capture the moment"

A rundown on this year's orientation week as first-years make their first mark on campus

[by **Apeksha Atal** | Asst. Pillbox Editor]

Friday, Aug. 19 at 7:30 p.m., Carnegie Mellon's Orientation team gathered in Rangos ballroom to receive both their colored shirts and the responsibility of collectively caring for, guiding, and being a friendly face to over 1,500 incoming first year students.

Early the next morning, residents began pouring into the various housing areas eager to mingle, explore, and begin their college careers. Here's a rundown of the main events that took place during the course of the week:

Saturday:
The week kicked off with move in. Students drove in from all around the country and flew in from all around the world. Carnegie Mellon's staff has long been known to make move in as effortless for incoming families as possible and, like previous years, the day went by smoothly.

Sunday:
Sunday night was the first floor meeting for the first years, and served as the first opportunity for students to get to know their RA's, CA's, Housefellows, and OC's. Afterwards, students had the chance to explore the various housing communities as each area hosted a unique block party event. Events ranged from good eats such as the classic grilled pineapples and ham from Morewood E-tower and nachos at Mudge, to root beer floats at the Rez and smoothies up near Henderson. Stever house offered small grass plants for first years to take home and put up in their dorm rooms. Dance parties and karaoke were the main attractions up in the Hill and Donner area, along with Rita's outside McGill and Boss.

Courtesy of José Mario López

A group of RAs, CAs, and OCs help to facilitate the orientation process and make the college transition for first-years much smoother.

Courtesy of José Mario López

Monday:
During house day, first years mingled with residents throughout their dorms through ice breakers and collaborative trips and activities. Later on in the day was community collage, where upperclassmen spoke, sang, and danced their hearts out to display the vast range of cultural experiences that Carnegie Mellon has to offer. Monday night was, of course, playfair, the largest icebreaker of the week. There was running, mingling and dancing galore, followed up by a dance party and a full scale water gun war.

Tuesday:
The second full day of orientation donned the famous "Making Your Mark" Talk from John Hannon and Gina Casalegno, who showed students the wide range of opportunities available on campus to help them succeed in fulfilling their goals, no matter how obscure or interdisciplinary they might seem. Students also gather with their floors to discuss Randy Pausch's *The Last Lecture*, and what it could bring to their lives at Carnegie Mellon.

In the afternoon, there were trips to the many neighborhoods of Pittsburgh, so that first years could shop, eat, and sightsee while taking in the city.
The night began to come to a close with a performance from Craig Karges, who as per usual, left jaws dropped. The Greek Gala capped off the night with desserts, Mike the balloon guy, a photo booth, and of course the many Greek Organizations around campus ready to speak to interested first years.

Wednesday:
Wednesday began heavy with seminars on community standards followed up with floor meetings to discuss the expectations of students on campus, and ended with

college night, the much awaited night involved schools coming together and meeting as a community.

Thursday:
Thursday morning involved academic orientation, which lead up to convocation, where students were officially inducted into the student body. After a dinner of endless pastabilities, student had the chance to test their luck in both games and a raffle during Casino Night.

Friday:
Friday morning was a chance for first years to go out and get involved in service activities around the Pittsburgh community through PACE. This year participation in activities gave first years the possibility of earning points for their dorms that counted towards the final scores in House Wars, which took place later that night. After intense competition, with Stever taking first place, Donner second, and the Hill slipping down to third.

Saturday:
Pittsburgh Connections, Poster Sales, Quidditch and Ballroom Dancing were among the many activities that took place on this relatively relaxed day of Orientation. The night, however, was rich with excitement as eleven freshmen took the stage to show off their incredible talents. Along with musical and dance performances, this year brought backflips, glowsticks, and magic.

Courtesy of José Mario López

Courtesy of José Mario López

Sunday:
The final day of orientation involved helping students find their classes and a final floor meeting to kick-off the school year.

Good luck class of 2020+! We're so glad to have you on campus.

Top: Playfair is a large icebreaker designed for orientation. It's where students can bond and potentially meet new friends. **Bottom:** Several students engage in House Wars, an annual competition fought between the various first-year housing communities on campus.

Stories from the soul: When Love Arrives

Introducing a new column designed for student writers to share their creative writing

"Come on! Hurry!"

She yanked me forward, shirt first, through the bustling crowds of Colaba Causeway, one of the biggest and most colourful markets in Mumbai. Caught up in her excitement, I could do nothing but follow. All around me, hawkers sold everything imaginable, from Indian garments and fake jewelry to Senheiser Headphones and glossy magazines.

I was taken back in time as I saw a little ten year old girl lost in the colorful sights and sounds of the market around her. She'd dance from shop to shop. She'd negotiate with vendors five times her age. She'd tell her mother, "Mamma, I want to buy this!" and point at the biggest item she could find at a stall. When the inevitable refusal came, she'd make the biggest scowl she could, and more often than not a compromise would be worked out.

The girl was still present in her twenty one year old body. I saw her eyes widen to twice their size every time she saw something she liked. I saw her subconsciously reach out her tiny hand whenever she felt overwhelmed, or when she shared stories about her idol Eve Ensler, or when she complained about her parents not letting her stay out late.

"I'd wake up three hours before school every Monday, so I could come to Causeway and pick up Theobroma's first batch of brownies for the week," she told me as we walked along the pavement, and I couldn't help but smile.

"Hey, don't you dare laugh at me mister!" she glared at me, prompting me to break into laughter.

"Jesus, couldn't you wait till after school?!"

"No, of course not!"

Families rushed past, hawkers cried out, and she pulled me along. Suddenly locking those gigantic eyes with mine, she said, "We're going to the end of the market, all right?"

"All right," I grumbled, feigning submission in an attempt to find an appropriate response to her unabashed glee. I was in a place I'd never been to before, with someone I'd met a week before. And yet, I hadn't felt so alive in a long time.

"When love arrives, let it. When it goes, don't cling to it. Set it free. Just be."

"I don't want to force it," she said to me over lunch, my arm wrapped around her waist. "And neither should you. When love arrives, let it. When it goes, don't cling to it. Set it free. Just be."

It was in moments like these that I was given a glimpse into how she worked — her thoughts and her emotions as they transcended the mundane and poured themselves out into the open.

We slanted in different ways — there was very little we agreed upon. We could never agree on where to go for lunch. While I liked my food simple and light, she wanted the spiciest Indian food she could find. While I'd do my shopping at a mall, she'd do hers at a bustling market like Causeway. While I couldn't possibly reason something through enough, she was the most impulsive person I knew. From her bright red hair to her assortment of wrist gear to her eccentric Indian clothes, she was unlike anyone I had ever met. Reaching a common ground with our radically different worlds seemed a distant hope, almost an impossibility.

Oblivious to my musings, she dragged me along. As we walked on, we entered a tunnel and were momentarily surrounded in darkness. I found her looking at me. "Wow," her eyes spelled as I looked on. "I know right," I looked back. I knew because in that brief intersection of our gazes and between the sheer absurdity and improbability of it all, we had found love.

Abhishek Tayal | Pillbox Editor

moviesinmcconomy

McConomy Auditorium, Cohon Center
Abhishek Tayal | Pillbox Editor

Zootopia
Friday, Sept. 2
10:30 p.m.

Sunday, Sept. 4
8 p.m.

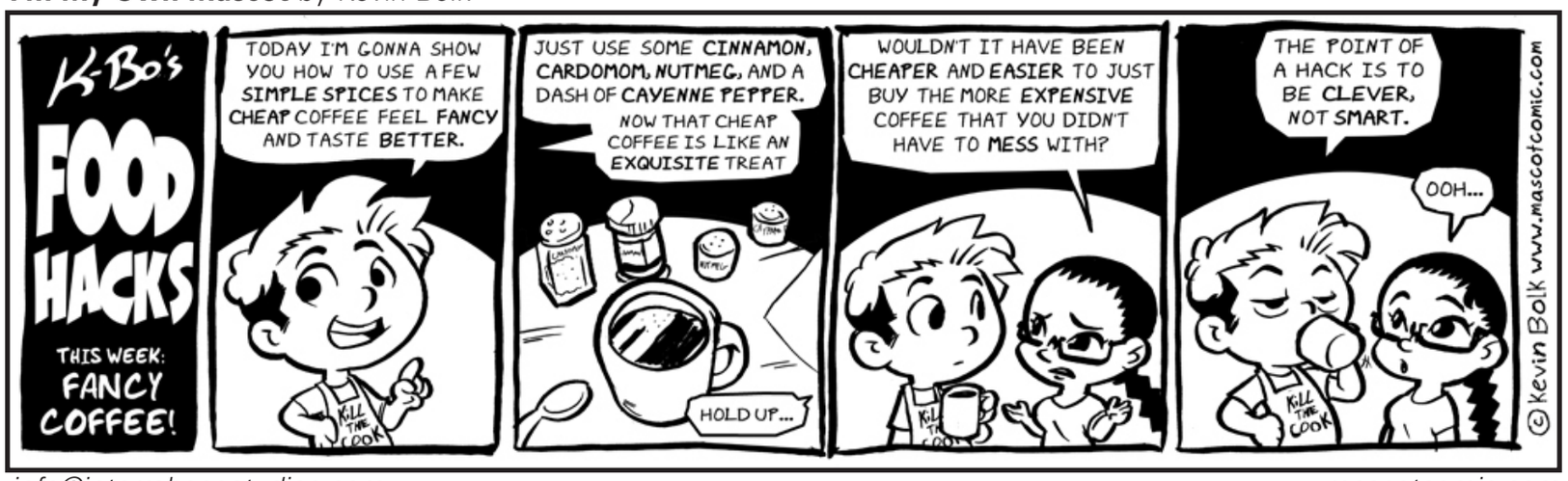
Since its release in February 2016, *Zootopia* has quickly gone on to become a modern animated classic. Its namesake metropolis, the setting of the movie, is home to a diversity of anthropomorphic animals, prey and predator, land and sea-faring, large and small, that have evolved beyond the primitive violence of the wild, and have learned to live together in harmony. When this peace is disturbed, it is up to rookie rabbit cop Judy Hopps (voiced by Giniffer Goodwin), the first rabbit police officer in a department full of intimidating animals, to investigate a series of strange occurrences while maintaining the delicate harmony between species that Zootopia is home to. *Zootopia* is an animated movie that deals with profoundly mature themes — from racial stereotyping to societal ignorance and paranoia.

Courtesy of Bang Dude via Flickr Creative Commons

The Man Who Knew Infinity
Saturday, Sept. 3
8 p.m. & 10:30 p.m.

The Man Who Knew Infinity tells the true story of Srinivasa Ramanujan (played by Dev Patel), one of the pioneers of mathematics in the early to mid-twentieth century. Ramanujan was born to poor parents in colonial Southern India. Through his mathematical genius, he reaches beyond his humble financial background, his lack of early education, and most importantly, the prevalent racism of the era to earn the profound respect of the mathematical community. *The Man Who Knew Infinity* focuses on his early adulthood years at Cambridge University, where he meets his lifelong mentor, G.H. Hardy (played by Jeremy Irons).

I'm My Own Mascot by Kevin Bolk

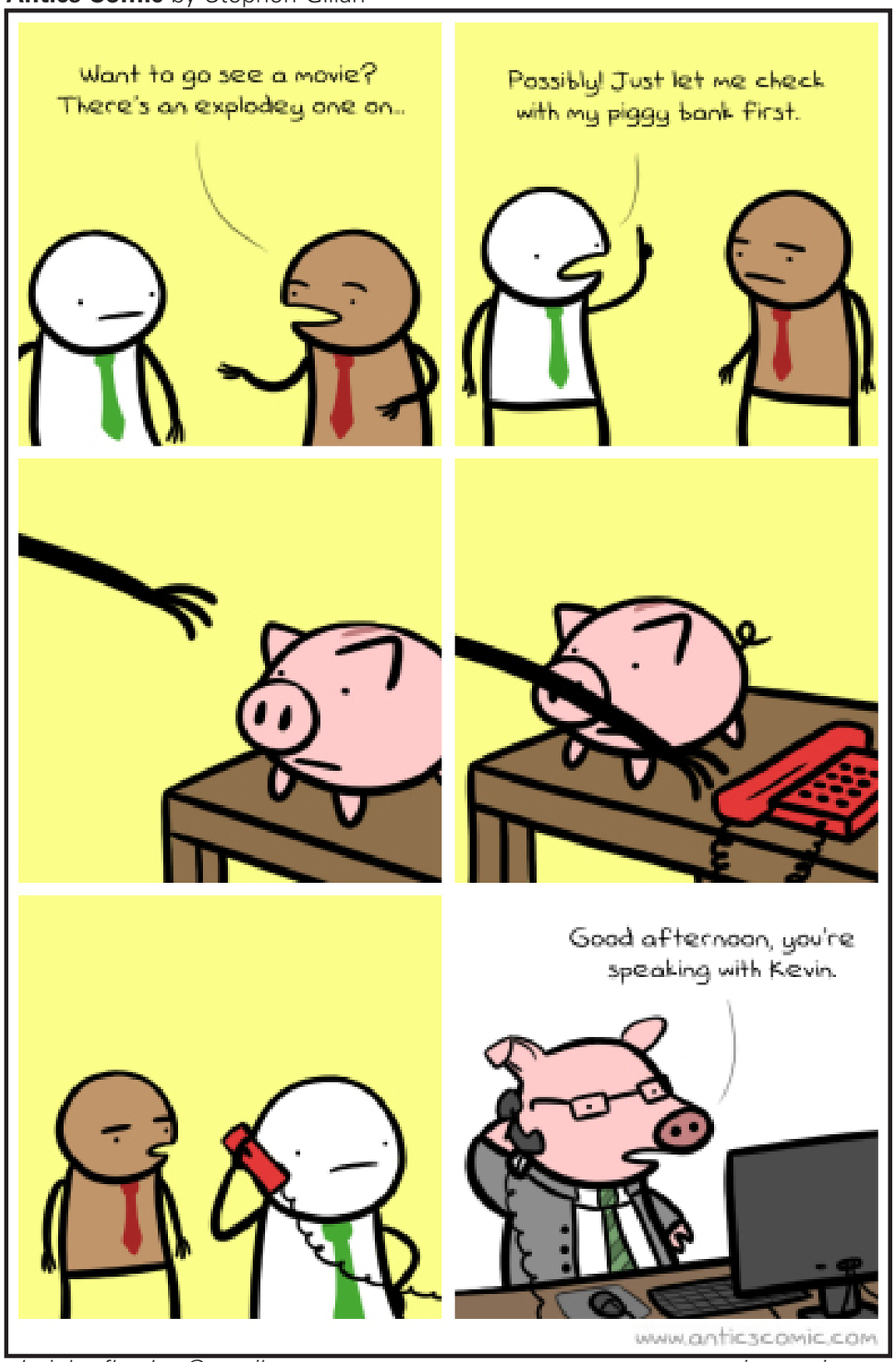


info@interrobangstudios.com *mascotcomic.com*

Saturday Morning Breakfast Cereal by Zach Weinersmith

zach@smbc-comics.com *smbc-comics.com*

Antics Comic by Stephen Gillan



almightyfletcher@gmail.com *anticscomic.com*

Thursday 9/1

Free Day at Pittsburgh Botanic Garden.
Pittsburgh Botanic Garden. Admission: Free

Enjoy the day at the Pittsburgh Botanic Garden with over three miles of trails and a serene Asian lotus pond. The Pittsburgh Botanic Garden, one of the largest botanic gardens in America, was transformed from reclaimed, industrial land. Adult tickets usually cost $9, so take advantage of free entry into the gorgeous Botanical Gardens.

Friday 9/2

Cohon Center Welcome Celebration.
Cohon Center. Admission: Free

Welcome the new addition to the Cohon Center with a day packed with free events, music, and dining deals. All Group X classes will be free and the film *Zootopia* will be shown in McConomy for free as well. The Activities Board will present musical performances in Skibo Café from 11 a.m. to 2 p.m. and "Louis the Child" in the Studio Theater at 7:30 p.m. Also, the Volunteer Fair will be held in in Rangos from 11:30 a.m. to 1:30 p.m. and Fitness Center Tours will be ongoing from 11 a.m. to 4 p.m. Don't forget to attend free dance lessons and participate in various games and activities outside of the Cohon Center as well.

Saturday 9/3

Pittsburgh Folk Festival.
11 a.m.- 10 p.m. Admission: Free.

The Pittsburgh Folk Festival will celebrate its 60th anniversary with performances, food, crafts, and more. The Pittsburgh Folk Festival, a consortium of over 30 organizations, presents the festival each year to exhibit the diversity in the Pittsburgh Metropolitan area. Eat cuisine from more than 20 countries and meander the marketplace filled with gifts and handmade crafts. The festival will continue into Sunday.

Sunday 9/4

Pittsburgh Folk Festival.
Schenley Tent Plaza, Oakland. 11 a.m. - 6 p.m.
Admission: Free.

Ongoing

Butterfly Forest.
Phipps Conservatory and Botanical Garden.
Now - Sep. 5.
9:30 a.m. - 10 p.m. on Friday.
9:30 a.m. - 5 p.m. Saturday to Thursday.

Admission: $15 per adult. Free with Carnegie Mellon ID.

Phipps Conservatory presents their annual Butterfly Forest in the Stove Room where visitors can learn and see the lifecycle of various butterflies. With over 20 species of butterflies, the enchanting Butterfly Forest provides an adventure that is family friendly and allows the opportunity for visitors to come up close to see nature at its best. If you're lucky, perhaps a butterfly will land on you! Entrance into the conservatory is free with a Carnegie Mellon ID.

Compiled by **Pauline Ting** | Asst. Online Editor

Want your event here?
Email *calendar@thetartan.org*.

orientation week.

Courtesy of José Mario López

Orientation Week is a time for all the incoming first-years on campus to become familiar with the campus and each other. This week-long event features several activities ranging from Playfair, to convocation, to a magic show. By the end of the week, students are sure to be ready to take on Carnegie Mellon with a host of new experiences and new best friends by their side.