

# Professors discuss the impact of the PSO strike on the university

**CHRIS SHENG**  
*Junior Staffwriter*

Following up on the Pittsburgh Symphony Orchestra's (PSO) strike, as detailed last week in The Tartan, PSO musicians were picketing in front of Heinz Hall on Saturday, Oct. 15. Right now, although both sides say they are willing to sit down and negotiate, the situation is much more nuanced.

According to an interview The Tartan conducted with PSO members Zachary Smith and Carnegie Mellon professor Stephen Kostyniak, “management has said they are willing to talk with us as long as we take the cut, which is not negotiating ... the management should come back to the table and negotiate with us instead of offering ultimatums.”

Smith and Kostyniak emphasized that PSO’s

fundamental reason for striking is to retain the world-class artistic excellence, as, “it’s very clear that if the management’s proposal were adopted, musicians will start to leave.” Kostyniak said that they have already lost musicians. Since the last round of pay cuts they took in 2011, they have lost five musicians; during the last couple months, they have lost another three musicians.

PSO member Howard

Micah said it took them eight years and seven auditions to replace their principal flute player whom they lost before 2011 to the New York Philharmonic.

Kostyniak says the management’s numbers on their fiscal reports don’t add up. As for the new business model they are applying, the musicians “can’t find an example where their business model succeeds,” and “anybody who succeeded in the arts industry

knows that you can’t cut your wage to success,” Kostyniak said. According to the PSO, the board of the orchestra has repeatedly said that cutting costs further is not an option, that the symphony has a revenue problem but not an expense problem. “Yet instead of dealing with the revenue, what they are going after is the expense, at the expense of the quality of the orchestra,” Kostyniak said.

The PSO runs as efficiently

as any other orchestra in the country. The symphony in Cleveland has an annual budget of \$50 million, while the PSO has only \$33 million. Since Pittsburgh has a larger pupulation and stronger economy than Cleveland and Cincinnati, Kostyniak believes “it’s not a matter of it can’t be done or the money is not put there ... What are Cleveland and Cincinnati able to do that

See **STRIKE**, A3

# President Barack Obama headlines Frontiers Conference at CMU



President Barack Obama visited Carnegie Mellon University on Thursday, Oct. 13, to take part in the White House National Frontiers Conference. The conference was co-hosted by Carnegie Mellon and the University of Pittsburgh.

**KRISHNA RAO**  
*Staffwriter*

The National Frontiers Conference convened in Pittsburgh on Thursday. Co-hosted by Carnegie Mellon University and the University of Pittsburgh, the event was an effort to “explore the future of innovation.” The guest of honor, President Barack Obama, gave a speech and participated in a panel discussion in Carnegie Mellon University’s Wiegand Gymnasium. The visit marked the President’s fifth visit to Carnegie Mellon.

Earlier in the day, Carnegie Mellon also hosted

three smaller conferences, or “tracks,” on interplanetary, local, and national frontiers of innovation. The plenary session, during which President Obama spoke, was the concluding event of the day.

Carnegie Mellon president Subra Suresh opened up the session by introducing the subject of technological innovation and the unique ability of Carnegie Mellon to work at the “intersection of technology and human behavior” in order to “enhance lives.” He also reflected on his personal connection with President Obama, referring to his previous post as the director of the National Science

Foundation, and saying that it was an honor to welcome the president back to Carnegie Mellon.

Following Suresh was Tim O’Reilly, founder of O’Reilly Media, whose message was to consider the long-term benefits of progress, rather than short-term detriments. He talked about the budding era of technological advancements, reminding the audience that machine-destroying Luddites of the seventeenth century could never have imagined the benefits technology would ultimately bring society.

Next up was Raj Chetty, an economics professor from

Stanford, speaking with radio show host Roman Mars. The professor described how statistics and technology was being implemented to analyze conditions of individuals and communities around the country. He provided insights into ways we can better deal issues like economic segregation and educational environments on the national level.

The youngest speaker of the event, Charles Orgbon III, encouraged adults to have the enthusiasm they felt as children. The engaging millennial spoke of the organization he founded in fifth grade, Greening Forward, through

which he promotes improving environmental policy.

Subsequently, a panel featuring experts on space exploration was introduced. Anousheh Ansari, an Internet of Things company CEO, former astronaut NASA Deputy Administrator Dava Newman, and Blue Origin Manager Erika Wagner were the guests. Each offered a unique perspective on how they became interested in space, the final frontier. They offered their visions and prospects of what could soon become reality, and discussed what inspired them to turn towards space.

The president of the University of Pittsburgh,

Patrick Gallagher, spoke about the contributions of the University to frontiers of innovation. He talked about pushing boundaries of the status quo, and the importance of leaders in spurring innovation.

Finally, University of Pittsburgh and Carnegie Mellon medical student, Alexis Chidi took the stage to introduce the president. Chidi recounted her encounter with then-senator Barack Obama when she was sixteen and ran into him in the elevator. She mused about how their paths had crossed once again

See **CONFERENCE**, A3

# Artificial intelligence machine out-plays gamers in video game

**ROSE PAGANO**  
*Junior Staffwriter*

When it comes to gaming, Carnegie Mellon students are usually the ones beating the computer. But this time, the computer beat the students.

Carnegie Mellon University computer science students, Devendra Chaplot and Guillaume Lample, recently made an artificial intelligence (AI) agent in the video game *Doom* that outplays computer-generated agents and human gamers. They accomplished this by applying deep-learning techniques that taught their agent, Arnold, to manipulate the game’s 3-D design.

“The work is purely a result of our passion for artificial intelligence and video games,” Chaplot said. “Games have been a test-bed for advancement of AI since decades, like Chess, Poker, 2-D Atari Games, Go, 3D FPS Games, and this development can be viewed as a very small step towards creating a general Artificial Intelligence.”

Chaplot and Lample’s research is a major feat since players are forced to make their moves while only seeing a part of the game

on the screen. This research happened after Google’s DeepMind came out. Google also used deep-learning techniques to beat renowned gamer Go at the 2-D Atari 2600 video games. A key difference between these two projects is that Atari allows players to see the whole playing field, while *Doom* is much more limited.

“The fact that their bot could actually compete with average human beings is impressive,” associate professor of machine learning Ruslan Salakhutdinov said in a university press release.

Chaplot and Lample’s work is also receiving a lot of recognition since putting their research on the internet, submitting it to an AI conference, and posting videos of their agent’s game on YouTube. In three days, their videos got over 100,000 views. Also, Chaplot and Lample’s agent was awarded second place in the Visual Doom AI competition where AI agents participate in deathmatches against each other.

The pair’s feat is important to computer science because of the many difficulties the researchers had to overcome for the computer

agent to beat humans and the game-generated agents. Since humans are better at tracking and avoiding enemies in the game’s 3D world, Chaplot believes that gives them an advantage over a computer. Also, the game’s agents have maps and other information that help them cheat the system.

To make up for these discrepancies, Chaplot and Lample had their agent figure out his moves by only seeing what’s on the screen, like human gamers. This was achieved by using certain deep learning processes based on neural networks. As the player goes through the game, the system uses Deep Q-Network, but when it notices an enemy, the agent uses a Deep Recurrent Q-Network that has long short-term memory that watches what the enemy does and helps figure out where the agent should shoot.

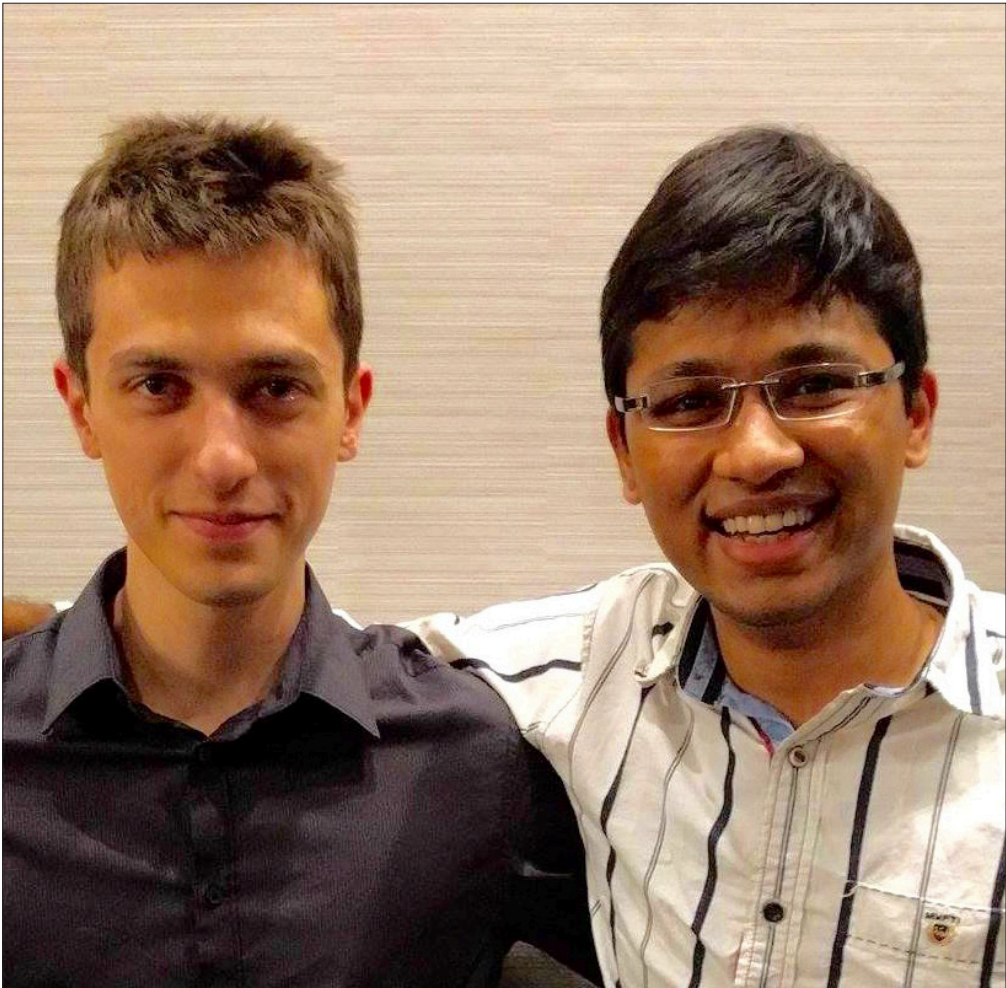
Although Chaplot and Lample have already put an immense amount of work into their current model, they still have a lot they want to do with AI technology.

“We would like to extend this work to improve our AI agent to tackle more complex games,” Chaplot

said. “In the future, the deep reinforcement learning techniques we used to teach

Arnold to play a virtual game might help self-driving cars operate safely on real-world

streets and train robots to do a wide variety of tasks to help people.”



Courtesy of Devendra Chaplot and Guillaume Lample  
Guillaume Lample (left) and Devendra Chaplot (right) created the artificial intelligence agent for *Doom*.



FEATURE PHOTO

# CMU Siam commemorates the late King Bhumibol Adulyadej of Thailand



Theodore Teichman/Visual Editor

Siam, Carnegie Mellon's Thai Students Association, hosted a commemoration for King Bhumibol Adulyadej of Thailand, who passed away on Oct.13. The event included a visual overview of the King's accomplishments, a candle lighting ceremony, a recital of the King's Anthem, and a moment of silence.

## Campus Crime & Incident Reports

### Driving Under the Influence

Oct. 7, 2016

A University Police Officer conducted a traffic stop of a vehicle near the intersection of Fifth Avenue and Morewood. The driver was found to be intoxicated and was placed under arrest for DUI.

### Underage Drinking

Oct. 8, 2016

University Police responded to the Greek Quad in response to a report of two people arguing. Two intoxicated Duquesne University students were reportedly arguing on the Greek Quad. The students were provided with medical attention and were

issued citations for underage drinking.

### Medical Intoxication

Oct. 9, 2016

A Carnegie Mellon University student contacted University Police to request medical attention for his intoxicated friend. The student, who was over the legal drinking age, was provided with medical attention.

### Alcohol Amnesty

Oct. 9, 2016

An intoxicated male student at West Wing was provided with medical attention. All criteria of Amnesty were met and no citations were issued.

### Vehicle Damage

Oct. 9, 2016

A Carnegie Mellon University student reported that his vehicle was damaged while parked in the Greek Quad.

### Retail Theft

Oct. 9, 2016

Au Bon Pain staff reported to University Police that a female removed a food item from the eatery without paying for the item. An investigation is ongoing.

### Theft of Bicycle

Oct. 10, 2016

A Carnegie Mellon University student reported

to University Police that his bicycle was unlawfully removed from South Craig Street. An investigation is ongoing.

### Traffic Stop/Warrant Arrest

Oct. 12, 2016

A University Police Officer conducted a traffic stop of a vehicle on Forbes Avenue and found that the driver had an active warrant for his arrest. University Police executed the arrest warrant and the driver was placed into custody.

Compiled by  
VALENE MEZMIN

NEWS IN BRIEF

### Ceremony held to install Rebecca Doerge as dean of the Mellon College of Science

Rebecca Doerge has officially been installed as the seventh dean of the Mellon College of Science. On Oct. 6, hundreds of people gathered in the Mellon Institute Auditorium to witness this momentous occasion. This was the first ceremony held to commemorate the new position of a Carnegie Mellon University dean. Ceremonies will be held to commemorate the installation of future deans.

President Subra Suresh, Provost Farnam Jahanian, and Neil Donahue, Lord Professor of Chemistry and Co-Chair of the MCS Dean Search Committee, all spoke at the event about the importance of science and why Doerge is the right person to lead the Mellon College of Science.

“We have a lot to look forward to, we have a lot to

work hard for and we have a new leader in the Mellon College of Science to take us in that direction ... to elevate MCS to a new level,” Suresh said, as noted in a university press release.

Doerge was formally installed as the new dean and was presented with a quaiach (pronounced quake), a Scottish ceremonial drinking cup offered in friendship or welcome.

Doerge stated that she hopes to build on Carnegie Mellon's strong research and educational programs and take advantage of collaborations with the other colleges at the university in order to make the Mellon College of Science rise to new heights.

“It is an honor to lead the Mellon College of Science into the next 50 years of history,” Doerge said.

### CMU professors look to Clinton's memoirs in order to decipher perception problems

Carnegie Mellon's David Kaufer, the Paul Mellon Distinguished Professor of English, and the University of Maryland's Shawn J. Parry-Giles analyzed Hillary Clinton's two political memoirs, *Living History* and *Hard Choices*. Through their research, they sought to uncover links to the U.S. democratic presidential candidate's public perception problems.

Kaufer and Parry-Giles used DocuScope, a digital humanities tool developed by Carnegie Mellon University, to statistically tag, examine, and visualize the text of her memoirs for rhetorical patterns. They found that *Living History* delved into Clinton's most intimate thoughts, while *Hard Choices* focused on her public service performance.

The study showed that in both memoirs, Clinton remained very guarded.







“Our important finding was the interleaving of the styles across both memoirs and Clinton's choice to employ an institutional style when a personal style was not only expected, but hyped by her publishers,” Kaufer said in a university press release.

Kaufer and Parry-Giles believe that gender played a role in this decision. They cite the “double-bind” that women face in politics. “Women in politics, like Clinton, often find they can't be too intellectual or too emotional — or too serious or too jovial,” Parry-Giles said. They believe that Clinton's guardedness is a direct result of this.

The study was published in the National Communication Association's Quarterly Journal of Speech.

Compiled by  
VALENE MEZMIN

WEATHER

TUESDAY	WEDNESDAY	THURSDAY
		
82° / 66°	77° / 60°	71° / 51°
FRIDAY	SATURDAY	SUNDAY
		
59° / 46°	57° / 43°	60° / 45°

Source: [www.weather.com](http://www.weather.com)

### Corrections & Clarifications

If you would like to submit a correction or clarification, please email The Tartan at [news@thetartan.org](mailto:news@thetartan.org) or [editor@thetartan.org](mailto: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.

STUDENT GOVERNMENT COLUMN

### DOMINIQUE ESCANDON

Special to The Tartan

Editor's Note: Dominique Escandon is the Cabinet Writer of The Student Government.

An amazing resource that has sprouted out of the efforts of the higher levels of administration on campus is the Provost's Task Force. The Task Force itself is comprised of about 25 members, all of whom are faculty, staff, students, or alumni, who meet every month to reflect on the student experience at

Carnegie Mellon and develop recommendations to enhance and better student life on campus. They come together to ponder immensely tough questions such as: What do students need? How do we engage with students on the work they are doing, or wish to do? With these types of questions lie great ambitions, which is why outside of the central Task Force lie the working groups, which contain the same diversity of members, but meet separately and specialize in one of five

special interests that the Provost has identified.

In its relatively short existence, the Task Force has already been able to accomplish some amazing and vital things. It initiated the year with new language in all syllabi on mental health that will serve as a reminder throughout the semester that we all deserve to care for ourselves. Through offering free Group X fitness classes to all students, the Task Force gave us means to relax and be mindful about our health. It distributed CMU

Cares brochures, which detail guidelines and possible resources to all faculty and staff on campus if a student were to reach out to them expressing a need for support, and along a similar vein, introduced five new staff members to CaPS to further ensure that someone is always available if students need the support.

Again, we are shown that there are no limits to what is possible when passionate members of our campus community come together with a goal of producing change.

What a better way to fulfill a year of compassion than working hard to ensure that opportunities of kindness to yourself are unlimited on campus.

The Task Force isn't affiliated with Carnegie Mellon Student Government, but our 2016–2017 Student Body President, Vaasavi Unnava, and Vice President, Aaron Gutierrez, are members of its Health and Well Being Services working group, meaning they are an incredible point of contact for recommendations

anyone might have on the integration of Carnegie Mellon University professionals and students for the goal of better campus mental health.

Don't have the time to stop by SBP & SBVP Office Hours (held on Fridays from 11 a.m.–1 p.m. at variable locations on campus, usually announced via the Facebook page)? You can always send in your thoughts on how you believe we can help engage our community to the Task Force at [CMUExperience@cmu.edu](mailto:CMUExperience@cmu.edu).





# National Frontiers panelists discuss how AI can affect policy

**ZEKE ROSENBERG**  
*Layout Manager*

On Thursday, before President Obama had arrived, the Frontiers conference began with several sessions explaining how artificial intelligence (AI) and data science affect various levels of policy. The local and national sessions, called tracks, took place on the second floor of the Cohon Center. The panels were a who’s who of academic and corporate giants in the field of AI such as Engineering Director at Uber’s Advanced Technologies Center Raffi Krikorian and Corporate Vice President of Microsoft Research Jeanette Wing. The local policy track also featured municipal government officials who embody the spirit of making data “work for us” as the president often says.

The National Frontiers track opened with Pennsylvania Governor Tom Wolf telling the story of innovation in Pennsylvania, beginning with William Penn’s idea of freedom of conscience, winding through the founding ideas of American government born in Pennsylvania, touching on the agricultural and industrial revolutions, and finally landing on the transportation revolution which still roils on today as self driving cars become frequent sights on the streets of Pittsburgh. “Welcome to Pittsburgh; welcome to Pennsylvania; welcome to the future,” said Wolf before he ceded the stage to a series of “lightning speakers” who gave ten minute talks on their areas of interest or expertise.

The first speaker was Tanya Berger-Wolf of the University of Illinois at Chicago. She spoke about how data science is making it possible to track animals without invasive tracking devices that could be dangerous to the animals. The program she referred to was able to use machine learning techniques to identify species and even individual animals. This resulted in programs like Flukebook for tracking whale flukes and the IoT, Internet of Turtles.

The second speaker was Carnegie Mellon robotics professor Stephen Smith.

Smith presented a plan to alleviate urban congestion by having traffic lights autonomously optimize their own patterns and then send that information downstream so future lights know what to expect. This program found great success in Penn Circle, reducing travel time by 26 percent, idling time by 41 percent, and emissions by 21 percent. After a successful expansion to Bakery Square, Smith’s team plans to continue expanding the program throughout Pittsburgh.

The final lightning speaker, Suchi Suria of Johns Hopkins, explained how electronic health records could be used to diagnose conditions such as sepsis that require a quick response. The algorithm she and her team developed was able to use these records to discover sepsis up to 24 hours before doctors are able to make the same diagnosis. This approach was not unique to sepsis, and has also been successful in responding to other conditions and could help diagnostics significantly.

Krikorian and Wing, alongside founding director of the New York University Center for Data Science and Director of AI Research at Facebook Yann LeCun, Vice President of Cognitive Computing at IBM Guru Banavar, and research scientist at Google Francoise Beaufays, participated in a panel on best practices in AI. The panel began with how AI developed from something of a niche field of study into the dominating presence it has today. All of the members of the panel agreed that the convergence of the available tools — humans now having powerful computers in our pockets — and deep learning in the last five years have expanded the capabilities of AI to the point where they are unavoidable. Deep learning is a process by which an algorithm attempts to model abstractions from data, allowing for more general decisions. Wing explained that AI began as a dream of recreating human intelligence, but that quickly proved challenging. Eventually, people identified individual tasks that a human can do and attempted to

algorithmically recreate them which has lead to the specialized AI we have today.

The panel also got into some of the specific limitations that computers face. One specific example that LeCun gave was the difference between the sentences “the trophy did not fit in the suitcase because it was too large” and “the trophy did not fit in the suitcase because it was too small.” Humans observe the world and are easily able to discern that either the suitcase was too small to contain the trophy or the trophy was too large to fit in the suitcase, but that observation of reality is missing from computers. Wing added that conversational English is different from written English and sometimes people will switch languages when they are speaking. LeCun believes that these challenges have to be overcome before AI can start to function as accurately as humans.

Finally, Wing mentioned the importance of secure AI that is safe from some of the

more harmful tendencies of people. This was in response to a question about Microsoft’s Tay, which has been described as a “Hitler-loving sex robot.” Tay was originally supposed to be an automated conversational bot that picked up on people’s tendencies, but was quickly corrupted into saying some things that were less than friendly. This came on the heels of a wildly successful version of Tay named Xiaolce which was released in China. It showed the need to actively make sure AI doesn’t become harmful.

In the Local Frontiers track, Chief Data Scientist at the University of Chicago Center for Data Science and Public Policy Rayid Ghani, Knoxville Chief of Police David Rausch, and Commissioner of the Massachusetts Department of Public Health Monica Bharel discussed how data can be used to disrupt cycles of incarceration. Rausch’s police department has gone two years without a police involved shooting, and

when asked about how that happened, he responded that there was a little luck but a lot of effort. He mentioned that community engagement helped officers and their communities interact more positively. He also talked about how the education of officers, including a large increase in the number of officers with four year degrees, and more stable working conditions and hours for police officers helped to make police less likely to need violence. He also talked about how officers are trained to reset situations where they are at a disadvantage so they never have to resort to violence. Ghani added that these were all backed up by data saying these were meaningful predictors of violence. Police who have four year degrees are less likely to commit an act of police violence while police who consistently respond to distressing situations such as domestic violence or suicides are more likely to commit an act of violence

in the coming weeks. Bharel also added the importance of tackling substance abuse to disrupting cycles of incarceration and talked about how Massachusetts implemented the State Without Stigma program to help create vocabulary to talk about drug use and addiction in a way that doesn’t alienate people. She also spoke about how the data supports that the start of the opioid crisis is not heroin and illegal drugs, but that this comes as a result of opioid prescriptions for things like back pain. The data explains the flow of the problem and helps the department respond.

The tracks were heavy on specific policy discussions and how data science affects how both private and public entities should respond to the vast amount of information that now surrounds us. They were followed by the plenary session featuring President Obama that focused on brain science and medical information.



Theodore Teichman/Visual Editor  
The National Frontiers track allowed leaders in the field of artificial intelligence to discuss how AI and data science affect various levels of policy.

# Obama discusses the importance of science and technology

**CONFERENCE**, *from AI*

and welcomed the president onstage.

As the president walked on stage to the podium, he was greeted by a standing ovation from the crowd. His opening remarks were of thanks, to the several important decision-makers in attendance, as well as the leaders of both Carnegie Mellon University and the University of Pittsburgh.

The president then went into detail about some of the amazing things he had seen earlier in the day, such as a space shuttle designed by the private sector, and made a quip about successfully sticking a landing on the ISS, referring to a computer simulation.

Pittsburgh, he said, has “revitalized itself through technology,” going further to mention the advances of Uber self-driving technology, medical breakthroughs at the University of Pittsburgh Medical Center, and examples of progress, such as the “Girls of Steel” initiative, backed by Carnegie Mellon that allows young girls in the Pittsburgh area to learn about robotics. He noted that improvement of society through scientific advancement is consistent with the nation’s identity, and that “science has always been central to our progress.” He touched on green energy, medicine, smart city development, space exploration, and economics, as fields in which further progress needs to be made through innovation.

Several times throughout

his speech, the president hinted that his emphasis on science and education was also a political issue. “We don’t just listen to science just when it fits our ideology” he said, speaking about the viewpoints of some political conservatives. He warned that denying scientific consensus such as climate change can have ramifications beyond making bad policy. Such positions, he says, undermine what has made America the global leader in science and technology that it is today. Such viewpoints

“Innovation is in our DNA. Science has always been central to our progress.”  
—President Barack Obama

lead to the loss in funding for research and development, which has given us some of the most important technology in the modern world.

The president mentioned his efforts to improve America’s standing in STEM fields. In particular, saying that it is critically important to make sure that education in these fields is accessible to all, and that American culture needs to adapt to place value on science and technology. His remark about the White House Science Fair sending the message that the “winner of the Super Bowl isn’t the only one that deserves a celebration in the east room”

earned a round of applause from the audience.

President Obama pushed further on education, saying that we cannot have children with high potential “languishing in [substandard schools.]” Our duty, he said, is to make sure that advancements do not leave segments of society behind, and that progress is made in an equitable way. He said that part of his job as president is to make sure that the legacy from his administration is continued work in the field of science.

His final remarks were

about his meeting a man named Nathan Copeland, and on the subject of brain research. Nathan Copeland had been paralyzed by a car accident, but was recently given new hope by a research team from the University of Pittsburgh. Part of a DARPA-sponsored initiative, the researchers implanted microelectrodes in his brain, which allowed him to control a robotic arm just by thinking about it. Nathan was able to shake the president’s hand and even give him a fist-bump. Additionally, “Nathan is the first person in human history who can feel with his prosthetic fingers.” The president said that the

idea is to “push the bounds of what is possible,” making the point that people like Nathan are given new opportunities thanks to investments in science.

Finishing his speech, he joined the panel on Brain Science and Medical Information.

The panel was moderated by Atul Gawande, a surgeon and public health researcher who has written four award-winning books on the subject of medicine. In addition to the President, the panel included Kafui Dzirasa, a Neuroscientist working with Duke University, Data Scientist Riccardo Sabatini, who has worked in computational genetics, and cellist Zoe Keating.

Dzirasa wowed the audience by breaking down the dynamics of speech, demonstrating his cross-educational background in engineering and neurobiology. Next, he talked about his personal journey with studying the brain, saying that the schizophrenia that runs in his family is what first interested him in the subject. He said that the current brain research of the kind the President had spoken about earlier is a chance for engineers and scientists to get engaged in treating mental health and remove the stigma it so often entails.

Sabatini spoke on how his field has changed in the past few years. A trained physicist, Sabatini applied his knowledge to the field of data science. “The next century is going to be about biology,” he said, talking about his work

with digitalizing the human genome. He explained how there is much that can be extracted by analyzing genetic data. Cancer and susceptibility to diseases can be ascertained by sifting through the genetic information.

Zoe Keating shared her personal experiences with medical information. Her husband was diagnosed with stage four lung cancer in 2014. When it was discovered, she said, the cancer had spread all over his body. Keating discussed the changes that need to be made to the system. “You wouldn’t believe what I had to do. I had to drive disks [to the hospital]” she said, describing the situation where medical information was not shared from hospital to hospital. She said she was encouraged by the advancements that have been made in medical data in the past few years, and commended the president on his efforts to alleviate the burden of paying for treatment through reforms like Obamacare.

The president followed this up by saying that his ultimate goal in medical research is to make sure that the research done by Dzirasa, Sabatini and others results in people like Zoe’s husband getting better treatment. One way in which that can be done, he said, is having a model for research where the data is spread more freely. A contemporary cancer researcher may have to rely on the data from one hospital or institution, but it is important to open up more information that leads to better quality

research. The government’s approach, he said, is to look at the healthcare system holistically and push the system to bring the results of research to its patients.

Over the course of the discussion, the panelists switched back and forth between talking about improvements that need to be made in medical data and healthcare, and policies that may encourage these changes.

With regard to policy, Obama spoke about the need for expanded and improved health insurance opportunities. He said that how that is implemented is fair ground for debate. One of the specifics he mentioned were plans that cover small expenses, but do not cover important or expensive procedures, like dealing with cancer, in reference to Zoe’s experience.

The president’s final comments were aimed at drawing a contrast between government and industry, saying that “government will never run the way Silicon Valley runs.” He described democracy as intrinsically “messy,” and pointed out that the government has many additional responsibilities to take into consideration when making policy. While innovation and societal improvement are at the forefront of the Government’s agenda, people need to recognize that rather than completely changing the systems in place, efforts should instead be placed on strategic improvements.





# Dining Services expands dining options with new restaurants



Left: Theodore Teichman/Visual Editor; Right: Courtesy of Cooper Kostelic

Au Bon Pain (left) and iNoodle (right) are two Carnegie Mellon on-campus restaurants that were recently opened by Dining Services. The two restaurants were part of Dining Services' mission to expand dining options.

**EVANGELINE LIU**  
*Staffwriter*

Dining is an integral part of every student's Carnegie Mellon experience. On campus, there are a variety of dining options, partly thanks to the new initiatives put in place by Dining Services. These include the opening of new restaurant locations on campus, the launch of a new interactive, mobile-friendly web interface, and initiatives to make dining a safe and smooth experience for people with allergies and special dietary needs.

In an interview with the Tartan, Pascal Petter, the Director of Dining, said that the opening of new locations such as iNoodle and Au Bon Pain matched the goals as outlined by Dining Services in its strategic plan and coincided with the university's initiative to expand the Cohon Center. "Both of these dining locations allowed us to create healthier, engaging,

and interactive venues," Petter said. "We also saw this as an opportunity to look at the Skibo Café, because it was such a large dining location, to renovate the space altogether and to make it part of the Cohon Center expansion." The University's renovation initiative at the Cohon Center led Dining Services to push the timeline of the Skibo Café renovation up so that the two projects could proceed at the same time.

Another major goal of these new dining initiatives is to promote better health and wellbeing, says Mandi Semple, the Director of Marketing for Student Affairs Operations at Carnegie Mellon. "The expansion in general was focusing on wellness and fitness, and performance with studio theater," says Semple. One of the newer on-campus locations to offer healthy choices is Au Bon Pain, which opened in May 2016. For Semple, and other members of Dining Services,

having a concept that offers healthy options such as soups or smoothies, was important.

This autumn, iNoodle, located in Newell-Simon Hall, is a new presence on campus. iNoodle occupies the location formerly held by Mitchell's, a deli, whose head has since semi-retired. Dining Services was then faced with the decision of doing something new with the space, which is when, according to Petter, "[they] decided to make it an authentic Asian concept." iNoodle has different kinds of ramen and a create-your-taste ramen deli, as well as sides ranging from dumplings to sesame pancakes to hash browns on its menu.

The renovation and expansion required a half-year-long Request for Proposal (RFP) process, during which the University put out its goals for the project and different companies submitted proposals to meet these goals.

During the renovation process, a major challenge faced by Dining Services was seating. Many students prefer to work on homework and get their meals in the Cohon Center, meaning that the seating areas throughout the building were full most of the time. Semple says that they ended up adding around 30 seats during the renovation period to accommodate students' needs and preferences.

Healthy dining is not the only goal in the revamping of the old Skibo Café, which now houses Au Bon Pain. "It's a great gathering place, where students can socialize and interact with each other," Petter said. There are collaborative spaces and seating areas there that are open 24 hours a day where students can meet to socialize and study. Paper is even provided for students to take notes on.

Besides physical renovation, there are a host of new web-based initiatives to make the Dining Services website

more interactive and more mobile-friendly. Semple said that about 70 percent of people who visit the Dining Services website go to the page with information on the various locations, menus, and dining hours. Not only has the website been updated to be easier to use on mobile devices, there are also new features such as color codes that tell the viewer whether a location is open or closed, date range searches that allow the viewer to see what is open well in advance of the date, searches by building or by services like online catering, and maps that show GPS coordinates. There is also a direct link to the nutrition calculator which is another aspect of the focus on health and well-being.

In addition to increasing dining variety, Dining Services recently hired Jessica Tones as a Registered Dietitian, Nutrition Educator and Marketing Coordinator as part of an initiative

to facilitate the dining experience for students with allergies and other special dietary needs. Students with multiple or severe allergies go through Health Services first to figure out the best accommodations. Students who have less severe allergies or just a single allergy can use the Nutrition Calculator, which lists common allergens in the menu items. Students can also always request an allergy sheet from any of the dining locations. "Our goal is to improve that communication and tailor our menus and our concepts moving forward for students [with special dietary needs]," said Tones.

Dining Services' new initiatives reflect the extent of the needs and diversity of Carnegie Mellon students and staff regarding varying tastes and preferences. They also reflect a response to the national conversation about healthy eating to promote the wellbeing of the campus community.

# PSO members continue strike by picketing outside of Heinz Hall

**STRIKE**, from A1

Pittsburgh is not able to do?"

The musicians say they are going to do whatever it takes to keep the world-class orchestra in Pittsburgh, and they think management and the board need to commit to have a world-class orchestra.

According to an interview The Tartan conducted with Melia Tourangeau, the President and CEO of the PSO, management just wants to work together with the musicians to ensure the preservation of the music. "We hope to return to negotiations with them as soon as possible," said Tourangeau. According to the PSO, although the musicians are worrying that this cut will move the orchestra from being in the top ten in the nation, the orchestra will still be in the top 15. Also, while the first year of their proposed three-year contract calls for a 15 percent salary reduction, in the second year, pay would rise by two percent and in the third year pay would rise by three percent.

Tourangeau states, "We are facing a financial crisis, a \$20.4 million hole that must be addressed. We need to meet this challenge head-on to help ensure that the Pittsburgh Symphony Orchestra is here for generations to come." She said that "the Board of Trustees of the Pittsburgh Symphony and our management team is committed to the future of the symphony and to preserving the livelihoods of our musicians ... We want to work together to ensure the preservation of the music."

As for the strike, Tourangeau said "while the musicians may feel that they are striking against management, they are, in reality, depriving the community of the full orchestral experience at Heinz Hall." While the past strike of the Minnesota was a lockout by the management, "this is a strike by the

performers." According to her, the performers receive a base salary, but two-thirds of the performers receive more than this. The top performers are very well compensated. "If they leave the orchestra, it is their own personal choice but it is not for financial reasons that we, management, control ... And if they leave we offer competitive enough salaries that equally talented performers will be happy to fill their spots," Tourangeau said.

Tourangeau said that "most of the performers have not had experience with the business side and that is why we exist to do what we do and ensure that the music can keep going ... it's disheartening when [the performers] don't want to work with us. We all want the same things. We all care deeply about the music. I wouldn't be in this field if I didn't."

As for the figures posted on the musicians' websites calling into question the fiscal decisions and facts from the management, Tourangeau responds by saying that "Their figures reflect an incomplete understanding of the challenges we face. In some instances, it seems that they are only choosing points that appear to support their view ... Their interpretation is inaccurate."

Tourangeau also said that "we want to add new spaces on organizational and board committees for performers from across the orchestra; we want them to be a part of the discussion about the future of the orchestra and the specific fiscal and management strategy. Performers have been on the steering committees of all the orchestras I have managed."

Carnegie Mellon University is closely connected with the PSO. According to the Dean of the School of Music Denis Colwell, the connection goes all the way back to the beginning of the school. In fact, Carnegie

Mellon University's School of Music was started with some of the members of the symphony, with the hope that students could be trained to play in the PSO. Nowadays, the School of Music has the talented performers of the PSO teach studio lessons to students and still benefits from being close to such a world-class orchestra.

As for the possible effects that the strike will have on the universities that are closely connected with the orchestra, Kostyniak believes that if great musicians leave for other symphonies, then it is possible that Carnegie Mellon University, as well as Duquesne University, will lose many great teachers, which could harm the universities' music reputation and cause students to go elsewhere.

Concerning music education, Tourangeau tells us that performers need to learn how to engage their audience, to be exuding the energy and passion of the orchestra in and out of the performance hall. According to her, the ability to work with people is crucial for being an orchestral performer. She also mentions that "this is something the PSO performers are very good at and the best of any orchestra I have worked with."

As for the music education at Carnegie Mellon, Colwell noted that "we teach our students; we certainly use the symphony orchestra as a training vehicle, such as our Carnegie Mellon Philharmonic, but the net result for most students is not going to be playing at PSO. What we are trying to do is to make them music artists of the highest order and one of the components of that training is the symphony orchestra repertoire. The bases of the education here are that we are trying to train them for the real world, as music artists to find your way, invent your path

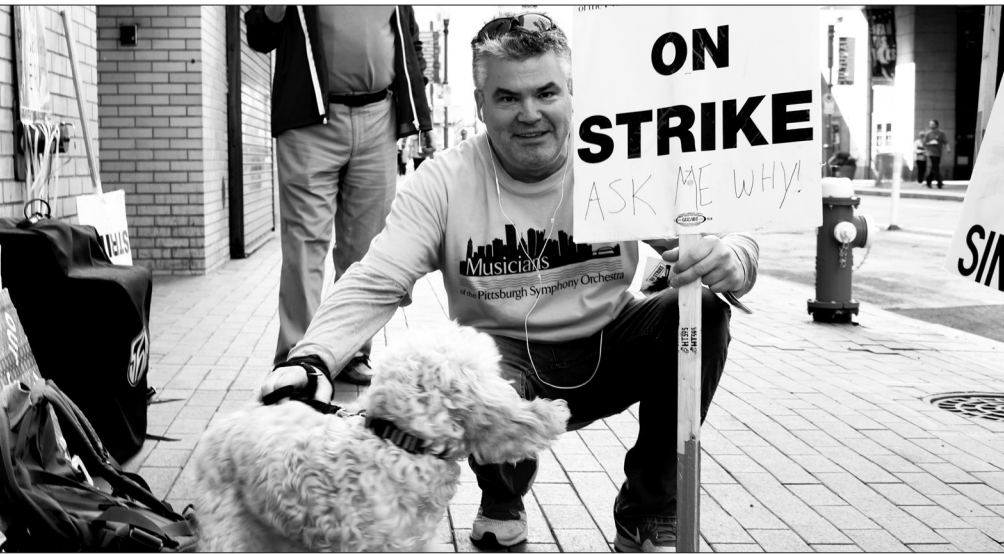
going forward and I think Carnegie Mellon is very good at this."

When asked about the future of orchestras, as well as the classical music industry, Tourangeau said that orchestras are going to continue being relevant. She also mentions that technology is going to help engage new groups and orchestras are going to continue being relevant and powerful venues for performers and there will be many jobs still available in this industry.

Colwell also mentions his belief that "Beethoven still talks to people, still talks meaningfully, still has power." However, when it comes to economic problems, how can you reach a larger audience and monetize that? "In my world, the obvious thing is Virtual Reality," Colwell said. Colwell looks into the future where someone can try the product of an orchestra from the comfort of their own home, which might even be a better experience of art. According to him, people

have already been doing that. "To take the product you are already doing and cast your net wider than that ... In my view that's the future."

According to Colwell, symphony orchestras are not going away. Although the market of classical music is relatively small, "there is a big enough market world-wide," and he notes that "we are confident that the art is going to continue well-past our lifetime. That I think without a doubt."



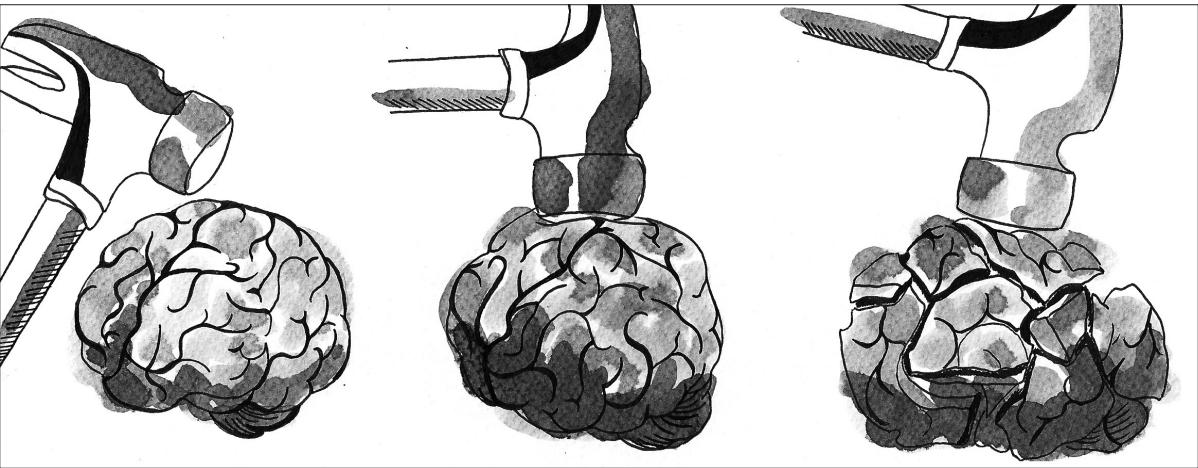
Theodore Teichman/Visual Editor

Members of the Pittsburgh Symphony Orchestra picketed outside Heinz Hall in downtown Pittsburgh on Saturday, Oct. 15. The Tartan spoke with these members to learn about the progress and their feelings regarding the strike.



# Forum

FROM THE EDITORIAL BOARD



Simin Li/Assistant Visual Editor

On Oct. 6, Provost Farnam Jahanian sent out an email to the entire Carnegie Mellon community, reporting on the progress and goals of the Task Force on the CMU Experience. In the email, he described the Task Force as a group of more than 80 students, faculty, alumni, and staff working to take steps that would cumulatively make for a happier, healthier, and stronger Carnegie Mellon community. Some of the many goals of the Task Force include “intentional structures for mentoring and nurturing; spaces and opportunities for reflection, play and meaningful interaction; and expanded access to academic advising and professional support, among other initiatives.”

Jahanian also wrote about the forthcoming announcement of an “unprecedented opportunity for all of us to engage in a campus-wide dialogue” and encouraged everyone at Carnegie Mellon to visit the Task Force’s progress and goals web page, and write back to the Task Force with suggestions and ideas. These are welcome steps that should go a long way in further improving the quality of the Carnegie Mellon experience in softer, more subjective ways. That said, there is room for improvement.

The Task Force was originally announced by President Subra Suresh on Apr. 20, as a part of the President’s Advisory Board initiative, a permanent and external group of eminent individuals meant to bring new expertise and unbiased recommendations on a variety of issues.

Some of the other steps announced as part of the Advisory Board initiative included a pilot program via the Eberly Center that would enhance the classroom experience, a massive new wellness center set to open in 2018-2019, an increase in the availability of hours and counselors at Counseling and Psychological Services (CaPS), and several improvements in university-provided child care, particularly for younger faculty and graduate students.

Specifically, the Task Force on the student experience is described as a group that will “will begin developing near-term and long-term recommendations” after “an examination of campus climate.” This objective, while necessary and welcome, is vague and open to interpretation. However, even in May there was an emphasis on making the Task Force inclusive, with members composed of faculty, staff, students and alumni.

A previous Tartan Editorial Board, written in our April 25 edition, following President Suresh’s April 20 email, echoed similar sentiments of cautious, skeptical optimism. In that article, we argued that while the proposed action items sounded great in theory, far too little concrete information was provided to inspire confidence.

We pointed out that “the plans [the administration] promises are not yet developed enough. Even though conversations have begun, the announcement came before the members of the advisory board or the Task Force could be chosen. Most of the more active items still do not include timelines.”

Since then, as we now know from Jahanian’s recent email, the Task Force has been steadily defining its goals and composition in increasingly concrete terms. The group first met on May 20. The entire Task Force is divided into five working groups focused on campus infrastructure: health and well being services, campus culture and student success, professional development for faculty and staff, and academic policies and practices, respectively.

Each group is composed of dedicated Task Force members, as well as interested volunteers from the entire Carnegie Mellon community. These groups met several times over the summer to “identify immediate steps the university might take to improve the CMU experience, and to consider long-term objectives.” This summer, on Aug. 11, the entire Task Force convened once more to discuss successful ideas and develop priorities specifically with regard to the coming school year.

In a couple of short months, the Task Force has already taken significant steps to improve the Carnegie Mellon experience. Instructors of classes all over campus have begun making student wellness a greater priority, starting with explicitly including wellness language within course syllabi. Group X fitness classes offered in the Cohon Center are now free for all students. A CMU Cares Resources Folder, describing ways a student can reach out to Carnegie Mellon’s support network, has been distributed to all faculty and staff.

Access to CaPS has been made much easier, with the launch of a new website, increased scheduling hours, and the addition of five new staff members. Finally, a special emphasis is being placed on the current first-year Class of 2020+, with orientation programs including wellness messaging and outreach to parents and new students by President Suresh, Provost Jahanian, and Vice President for Student Affairs Gina Casalegno.

The Task Force’s goals going forward are even more ambitious. A reevaluation of course workload and unit alignment is underway to ensure a course’s units realistically line up with the hours per week required, as is an academic policy review, with a special emphasis on reevaluating the existing add, drop, and withdrawal dates for courses.

Faculty and staff will be trained in what the Task Force is calling “Mental Health First Aid,” thereby giving faculty and staff a deeper regard for student mental health as well as the ability to offer counsel when required. The existing unconscious bias program being piloted by the College of Engineering and School of Computer Science will be extended to students, faculty, and staff across the university.

Collaborative workspaces around campus, referred to as “Nooks” by the Task Force, will be systematically refurbished and upgraded. Finally, Carnegie Mellon will tie up with the Jed Foundation, which offers “a multi-year assessment and collaboration opportunity to evaluate and enhance [Carnegie Mellon’s] mental

health, substance abuse, and suicide prevention efforts.”

In May, The Tartan expressed concern that the goals outlined for the Task Force were too vague to inspire confidence. At this point in time, due to the steps that have already been taken, and concrete steps that are planned for the future, the vast majority of our previous concerns have been put to rest.

We’re glad to see President Suresh’s plans moving forward through the creation of actionable items. That said, we would still like to see an increase of student involvement in the initiative.

For the Task Force to improve the student experience at Carnegie Mellon, we believe that there needs to be a greater outreach to students that the Task Force is trying to serve. While there are several students in the working groups, there are only five on the actual Task Force. For an issue that is so directly relevant to them, students should have a stronger voice in this debate than they currently do. While Jahanian and the Task Force welcome student involvement, we believe they might receive far more substantial involvement if they created greater awareness around the campus community about the Task Force and it’s actions.

Outside of the occasional email, there has been no widespread conversation on this issue on campus. What we’d like to see is town halls, seminars, meetings, and other greater awareness-generation initiatives. We’d like to also see more collaboration with student organizations.

The Task Force needs to encourage students to speak up and share their stories and ideas. In order to receive genuinely insightful opinions from the student community at large, opinions need to be invited in warmer, more intimate settings than asking for online feedback.

One might expect that the students that are the most overwhelmed by the Carnegie Mellon experience will be the last to reach out on their own to a Task Force with their suggestions. And yet, these are the students that will often have the most valuable insights of all. Right now, there is no readily available information on how the Task Force’s membership was filled. Many students were unaware that the positions on the Task Force existed until they were already filled.

It is commendable that the greater student community now has the opportunity to offer feedback, but this opportunity should ideally have been provided earlier and in a more transparent manner. As a part of the Carnegie Mellon student community, we believe this is something that the majority of our peers are deeply passionate about. We believe that large parts of the student community would step forward with insightful suggestions, if only they knew where to direct their suggestions. We are happy to see that the Task Force is following through on its goals. We’re looking forward to see how this can benefit the campus community and we hope that conversations of the positive things the Task Force is doing will spread beyond just emails.

## LETTER TO THE EDITOR: CMU STEM IMPOSTER SYNDROME

This semester I enrolled in Concepts of Mathematics, a required class for my anticipated Statistics major. Concepts is one of those 15-112-esque Carnegie Mellon classes that people tout as being all-nighter hard, life-destroying hard, impossibly hard.

Indeed, it is a difficult class: the math is very different from what we learned in high school, and it takes a while to get acclimated to what the problems ask of you. The homework is challenging and time-consuming, and some of the concepts went right over my head. I got good grades in my high school math classes, but not without the nagging suspicion that I was earning them thanks to faith, luck, and a little bit of pixie dust. It seems the jig was finally up: here was a math class that I could not fake my way through. When I received my first homework score during recitation, I took a deep breath and started thinking about abandoning both the class and, consequently, a major in Statistics.

I didn’t though, because later that day our professor posted the class mean and median on Blackboard. My score may have been bad compared to how I’d done in Calc 3, but they were several points above the class average. I wasn’t doing great — but neither was anyone else. Another way for me to look at it: if I wasn’t good at math, apparently neither was about two thirds of the class.

If you’re a woman and this situation sounds familiar, this is no surprise: it is called Imposter Syndrome. In 1978, Pauline Clance and Suzanne Imes researched people who, “despite outstanding academic and professional accomplishments ... believe that they are really not bright and have fooled anyone who

thinks otherwise.” They found that this trait is present in women more frequently and with more intensity than with men. In general, while women would consider their success a result of either luck or hard work, men tended to attribute it to their inherent ability.

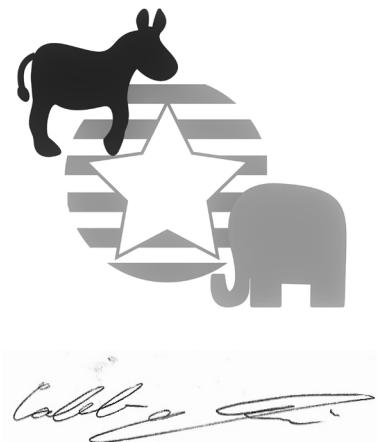
My older sister (and feminist hero) mentioned something similar to me when I was explaining to her in high school that I was bad at chemistry. She asked what my grades were and I admitted they were As and B-pluses. She told me to think about a boy who got those same grades— “Would he ever say that he was bad at chemistry? Would he ever even think it?”

It’s intimidating to try and address a problem so deeply rooted in gender roles. Clance and Imes discussed Margaret Mead’s 1949 observation that a “successful woman is viewed as a hostile and destructive force within society,” and how women have internalized it. We fear being successful because we fear being rejected by society; if we convince ourselves that we aren’t really smart, we can ignore the fact that society might hate us, because it just doesn’t apply.

There are, however, concrete steps that we can take to ensure that Imposter Syndrome affects fewer women. One of the easiest is mentioned above: when professors release basic statistics that show performance on tests and homeworks it enables women to stop speculating about their ability and see where they really lie. It brings us one step closer to a university where everyone feels like they deserve to be here.

Malaika Handa is a Dietrich College sophomore at Carnegie Mellon.

## Winner-take-all voting underpins U.S. system



CALEB GLICKMAN

Editor’s note: *The Pragmatist’s Manifesto* is a weekly column that encourages civil discussion about politics in the U.S. Find previous installments @ thetartan.org.

Since our current election has hit ... let’s just say a low moral point, I am going to do my best to discuss anything else in the world of politics. Last week we discussed the Electoral College, so this time I want to dive further into the voting system that the United States has had for over 150 years. We’ll discuss its precedents, alternative systems, and why the one we have works the best for our country. I’m talking about that much criticized system: first-past-the-post, or winner-take-all voting.

See TWO PARTY, A7

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The Tartan is a student newspaper at Carnegie Mellon University, funded in part by the student activities fee. It is a weekly publication by students during the fall and spring semesters, printed by Trib Total Media. The Tartan is not an official publication of Carnegie Mellon University.

The Editorials appearing at the beginning of the opinion section are the official opinion of The Tartan Editorial Board. Columns, Editorials Cartoon, and Reviews are the opinions of their individual creators. The Tartan Editorial Staff reserves the right to withhold from publication any copy it deems unfit.

Letters to the Editor Letters must be submitted by 5 p.m. on the Wednesday before publication by mail or to forum@thetartan.org. Letters from within the University community take precedence. Letters intended for publication must be signed and include the author’s address. Letters will be edited for grammar, punctuation, spelling, and Tartan and AP style. The Tartan reserves the right to edit for length and ethical reasons, including such matters as defamation, plagiarism, inaccuracies, profanity, and slurs. Authors’ names may be withheld at the Editor-in-Chief’s discretion upon request. The Tartan reserves the right to reject any letter.

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Library of Congress ISSN: 0890-3107

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# Trump’s aggressive hate reveals problems with whole GOP

*Sarah Elizabeth Bender*  
**SARAH BENDER**

This is not an article about Donald Trump. It will not focus solely on Trump, because that man does not need any more attention in the media. At this point, his notoriety may be the only thing keeping him afloat, to the frustration of many. His most recent antics do, however, set the scene. Trump made news again last weekend for a recently unearthed recording that featured his derogatory comments about women. In those comments, he essentially asserted — amid a torrent of lewd and sexual language — that he had the right to make unwanted advances on women simply because of his social status. It’s unfortunate that his words did make the news, really, because they weren’t exactly new. They were perfectly horrible, yes, degrading toward women and helping to perpetrate rape culture in America. Yet they were pretty much on par with a lot of the other things he’s said throughout the presidential race as well as in the past. So if you were shocked, shame on you. If you were appropriately horrified, join the club. And if you were one of many overwhelmed Republicans, apparently you’re putting your foot down, because Trump has just now crossed a sacred line. Many people suddenly decided that his wild, uncensored rhetoric had become too much. Public outcry revealed the necessity for an apology. Many stouthearted Republicans have even begun calling for

Trump to step down from the race, allowing his Vice Presidential candidate, Mike Pence, to take over. Maybe at first that sounds like a positive thing. But really, it’s not. Because if the line is drawn just in time to hastily defend straight white women, there are a lot of minorities Trump has already targeted that those rejecting him now have basically admitted they don’t care about. Since the beginning, one of Trump’s main talking points has been his rejection of Mexicans and Hispanics — mostly illegal immigrants, but on occasion anyone who he decided he distrusted because they could be “rapists” or “criminals” or “drug dealers.” Some people, both those targeted by his hateful rhetoric and those who decided that such generalizations are nonsense, raised their voices in opposition. Yet many sat twiddling their thumbs, because when it comes down to it, they honestly probably agree with him. He called for a “total and complete shutdown” of Muslim immigration to the United States, spreading a culture of terror and, as a result, essentially doing the terrorists’ work for them. He even personally attacked

parents of Army Captain Humayun Khan, who died serving in the Iraq War, for their culture. Did Americans jump to their feet to defend people of Islamic faith? Not nearly as many as one would hope, especially not among conservatives. His businesses are known for their discrimination, and he refused to rent to black people — even after being sued — and used his positions to spread harmful racial stereotypes. Yet where were the dismayed citizens calling for his removal when these details came to light? Or when he mocked a disabled reporter at a rally? Or when he alluded that a popular actress must be mentally handicapped because she is deaf? Or when he abused his privileges at Miss Universe pageants? Because of course, he has treated women poorly before this latest blunder. Just during the election process he insulted Heidi Cruz based on her appearance and ridiculed Hillary Clinton for her tone of voice, her supposed lack of stamina, and her husband’s behavior during his presidency. It’s great that more of his party has finally decided that this behavior is unacceptable, but they should have denounced it far earlier. It’s

certainly been going on long enough. The fact that Republican politicians like Jeb Bush and Ted Cruz felt the need to mitigate their dismay by contextualizing their empathy through their own female family members is appalling in its own right. They seem unaware that the assault of any woman is wrong, even if they do not happen to be your own personal relative. Another shockingly widespread — and largely unchallenged — example of hatred against an entire group of people is the current Republican campaign against the LGBT community — Trump or Pence, or both, have at some point opposed laws that would end discrimination against gay people, opposed marriage equality, supported military policy that would not allow soldiers to openly identify as gay, and opposed the Obama administration’s efforts to protect the rights of transgender students in schools. (On that note, by stepping into place as the presidential candidate, Pence himself could also become an unmitigated catastrophe — he seems to stand more firmly against gay people — and women, based on his position on health care — than even his hate-spewing co-conspirator.) But is the Republican party speaking out against these unconstitutional

attacks? For the most part, no. There are probably people who are actually celebrating it. And the scariest part is, since this particular hatred isn’t repeatedly trumpeted by Trump himself, it’s probably far easier for a lot of more moderate people to get behind. In fact, that’s why the closed-mindedness and prejudice and utterly unregulated hatred that surfaced in Trump’s mad bid for further fame will outlive his popularity. They survive, while somewhat less explosively, within those who gave him a prominent voice in the first place. Yes, Trump’s comments regarding women are horrible. They go a long way in revealing the true feelings of a man with little respect for most people different from himself. But they are just the most recent in a long line of racist, hateful, and downright wrong generalizations and lies that he has built his campaign on. And unfortunately, many of those opinions are still common enough in this country that they aren’t met with the outrage from the public that they deserve. That is why, in the end, this article is not about Trump alone. While he may be the current face of this devastatingly un-American movement of division rather than solidarity, he is not the root of it. And because of this, it will take more than his defeat to make it go away. This article is truly about the shame of the Americans who allowed his rise, and how we cannot in clear conscience allow the bigotry interwoven among us to go unchallenged for any longer.

*Sarah Bender*  
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The Tartan.

Anna Boyle/Staff Artist



## #RepealThe19th shames women

*Emily Gallagher*  
**EMILY GALLAGHER**

*Editor’s note: This weekly series highlights stories of women mentioned in the media. Find previous installments @ thetartan.org.* I am not an avid Twitter user, but this past Wednesday I spent a good fifteen minutes trying to login to my old Twitter account to see if #RepealThe19th was a hashtag that was actually trending. This was an effort that involved five incorrect passwords, a “Forgot My Password” e-mail, and concluded with the realization that I did not know the password to my “luv2read713” email account from middle school— in case you can’t tell from my old email address I was the most popular seventh grader to walk those hallways. After a valiant attempt, I had to resign and make a new account. Much to my utter horror, when I opened the webpage, there in the left hand side bar of my trending was #RepealThe19th under “Trending.” I clicked on the hyperlink and began to scroll through hundreds of tweets brandishing the hashtag. At first I tried to excuse myself, many of these tweets were using the hashtag as a form of backlash against those who had used it in a serious context earlier. As I scrolled further down, however, I saw tweets from women reading “I would be willing to give up my right to vote to make this happen #RepealThe19th” and “men should never have given women the right to vote #RepealThe19th.” Now, one asks what spurred these two women and so many

others to have the sudden desire to give up their right to vote? What negative impact would the female vote have on the election? Well, this past Tuesday Nate Silver, a statistician who specializes in baseball scores and election trends, posted two maps to the website *fivethirtyeight.com*, which charted the division of electoral votes if only men voted in the election as compared to if only women voted. These maps quickly made their way to Twitter where a flurry of reactions ensued. Based on Silver’s math, if women did not vote in the election, Trump would win with 350 electoral votes. If, on the other hand, only women voted, Clinton would win in a historic landslide. So now comes in the Twitter war fueled by ignorance, misogyny, and rage. Trump supporters tweeted using the hashtag #RepealThe19th highlighting just how much of their freedom they are willing to give away to elect a man who will limit their freedoms even further. The response to these sexist tweets was tremendous, and quite honestly were the reason why the hashtag began trending. The fact that the hashtag gained such popularity as a result of the backlash, however, is irrelevant when considering the bigoted mindset that set such a hashtag in motion. Come this January, there is a real chance that a woman will be sworn into office for the first time in United States history and at the same time we have people who believe that women should not have the right to vote. The sexism and misogyny that is at the core of Donald Trump’s campaign is disgusting, but what is more despicable is the fact that his

female supporters tolerate, and in many cases endorse, this backward mindset. These past two weeks have not been good ones for the Trump campaign, particularly when it comes to the female demographic. The video footage of Trump making lewd comments about women, which has repeatedly referred to as “locker room talk,” has caused other Republicans to withdraw their support and argue that he should drop out of the race, but what is appalling is the fact that the videos have not seemed to sway polls nearly as much as one would expect. This fact, coupled with the tweets of #RepealThe19th, made me start to lose faith in women in America. Women cannot accept this kind of treatment and behavior; every woman who does is just as bad as the perpetrator. The strides made by women in this country in the past century are groundbreaking, but we have not reached equality yet. In fact, it seems we are further away than I had previously believed. But this does not mean we should be disheartened. If anything, it means that women need to fight for and demand the respect they deserve more than ever. This is nothing new for women, nor is the resilience of the female spirit anything new. To think for a moment that taking away women’s suffrage will better our country or the world in any way is so sadly mistaken that all that can be done is to declare as loudly and a frequently as possible the strength, power, and importance of women in order to rebut the hate and sexism. Emily Gallagher (@egallagher) is a Staffwriter for The Tartan. Icon by Ashley Chan, Staff Artist



India Price/Online Editor

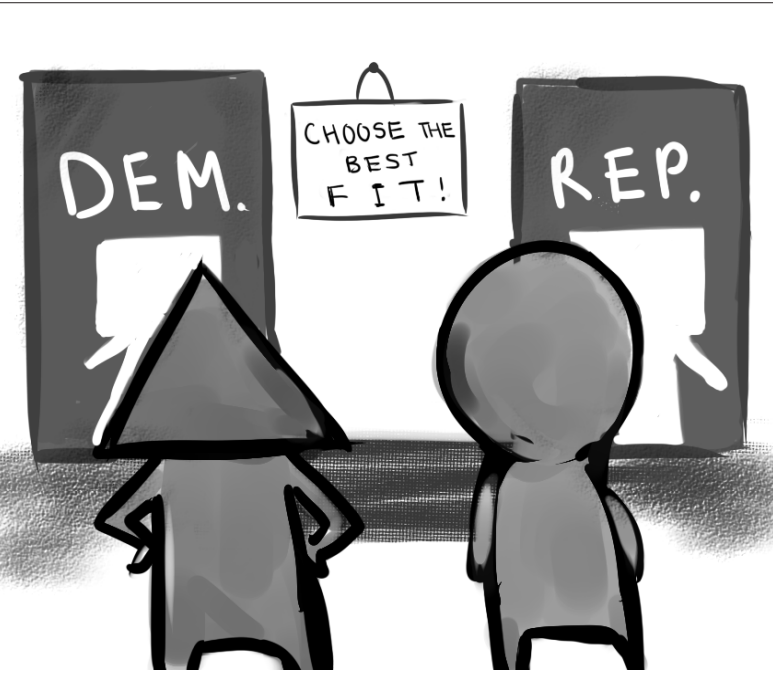
## LETTER TO THE EDITOR: CALL TO ACTION FOR CMU FACULTY

Dear Carnegie Mellon University faculty, We, as a group of concerned students of color at the university, are disappointed. We’re not disappointed because your office hours aren’t long enough or your lectures lack a certain depth and clarity; we’re disappointed because many of you have failed to take on the role of a faculty member in its entirety. As faculty members of the university, we expect you to be leaders, role models, and mentors. Many of you, however, have limited yourselves to having a strictly academic influence. To be frank, as students of color, we need more. We’re hurting, and we’re looking to you as our leaders to extend compassion, and acknowledge the real world issues occurring outside of your syllabi. We understand it would not be fair to express our disappointment without explicitly stating why we feel let down or without sharing our expectations for the future. As race-related tragedies transpire across the nation and we are bombarded with imagery of heartbreaking loss, an undue burden is placed on our minds and on our hearts. When after four+ years of recurring injustice, we can only thankfully acknowledge Dr. Peter Cooke in the School of Drama and Dr. Jelena Kovačević of Electric and Computer Engineering — we hear your silence. When we constantly face microaggressions in the classroom such as being excluded from peer study groups, we feel isolated. When we are calling out for minority representation amongst your colleagues while seeing little representation amongst our peers, we feel alone. We don’t look to the faculty and see allies, we see enablers. This needs to change. We expect that you, as faculty members, open your ears to hear our struggles — that you actively seek dialogue surrounding issues faced by students of color (e.g. “You Unedited,” “Why Take a Knee”). It may seem gratifying to see students, faculty and staff create these important venues for dialogue, until you realize that only 2-3 faculty actually attend these events. The administration and faculty cannot pride themselves in events that they are absent from. We expect faculty to use your positions of power and influence to challenge the ideas of systemic rac-

ism at all levels: amongst our peers, amongst your colleagues, and within the administration. We must create a culture at Carnegie Mellon where discussions about racial issues and injustices, both domestic and abroad, are just as paramount to learning as your seminars, workshops, and lecture series. To the professors who have sought out discourse and are active proponents of change, we acknowledge and wholly appreciate you. But to those that have chosen to abstain and consider these initiatives as outside of the scope of your work, we ask that you reflect on what it truly means to be a professor and shape young minds. If you are not aware of issues surrounding injustices on campus and worldwide, we implore you to acknowledge your privilege/ignorance, ask questions, and seek these venues in which students are sharing their stories. And if you are aware and sit idly by, we demand that you step up and champion our voices, and openly challenge the privilege you witness and experience every day. We’re not asking you to be psychiatrists; we’re not asking you to be best friends. We simply need empathy and support — allies. Lastly, we understand many of you may find this level of engagement daunting, and we acknowledge its difficulty; at times it is simply uncomfortable. We cannot forget however that embracing this very discomfort is what will catalyze growth amongst the student body and administration alike. We entrust you with this responsibility, and believe you are just as capable of fulfilling it as you are academically enriching us every day. Sincerely, Concerned students of color \*It is important to recognize that these feelings are not limited to the group of students that have written this letter — that there are those of varying identities (LGBTQ+, students with disabilities, women, etc.) or allies that share the sentiment that this letter embodies. This letter will circulate electronically and those that wish to cosign as allies, or the directly affected will be able to. We invite you to view this running list of signatures accessible by viewing The Tartan online. If you wish to cosign as an ally, or the directly affected please do so at thetartan.org/forum.



# Two-party system limits U.S. voters



Lisa Qian/Staff Artist

Brandon Schmuck

BRANDON SCHMUCK

As a response to Staffwriter Caleb Glickman’s four part series defending the two-party system in his column The Pragmatist’s Manifesto, I felt it necessary and appropriate to respond in defense of the independent millennial. The two-party system represents a vastly oversimplified view of American political beliefs and has left millennials like myself out in the cold.

In Glickman’s first article, he mentions, “Our party system is innately a debate over the role of federal government.” However, the idea that the vote between liberal and conservative is a vote between more or less government is a complete misconception. This is because the vote between Democrat and Republican only represents one dimension of the political compass.

To accurately represent all Americans, a spectrum from libertarian to authoritarian must be combined with the popular left to right. Left to right typically describes the government’s involvement in a country’s economics. In contrast, libertarian to authoritarian represents a government’s involvement in one’s personal life. The difference between an authoritarian conservative and a libertarian conservative can be day and night. However, the perception caused by the current system would place them much closer than a left and a right libertarian. Both the Republican and Democrat establishments tend to lean in the authoritarian direction and fail to represent those that want the government out of their lives.

Glickman goes on to say, “a multi-party race in this country runs the risk of electing a president without full majority of support.” However, I would argue the current system is already doing just this. Americans are frustrated, and according to a recent Pew Research Poll, 39 percent of them identify as independent. Even more interesting is the 48 percent of independent millennials. With tools like the internet, millennials are

starting to put their votes in their own hands. Last election, the most popular third-party candidate, Gary Johnson, lingered around 1 percent of the votes. According to the most recent polls, Johnson’s support has increased ten-fold this election. Neither Trump nor Hillary is supported by the majority. In fact, according to *The New York Times*, only the decisions of 9 percent of Americans chose Trump and Clinton as the nominees in the primaries.

Glickman mentions in his final article on the two-party system that, “Trump has upended the two-party balance.” He then goes on dramatically that, “Trump needs to be eviscerated. Completely destroyed.” His description is more of a decision-less system than the ideal two-party system he described in the previous article. Trump is the flaming dumpster of trash that is the two-party system. His success would only be possible in an election so molded into two parties that an entire party could hate, yet support him.

The two-party system turns the election into more of a childish finger pointing game than an actual debate. When Katie McGinty spoke on campus a few weeks ago, the only things she had to say were about her rival, Pat Toomey. The debates between Trump and Clinton have also been more of bickering matches than meaningful discussions.

As someone who is genuinely concerned about the future of this nation, I urge you to vote for who you wish. Don’t vote for Clinton because you want to “eviscerate” Trump. Don’t vote for Trump because you hate Clinton. Vote for who you want to be leading the land of the free. The scariest thing in this nation is not that Clinton or Trump could be president in a few months; it is that we have allowed ourselves to overlook the vast flaws of both candidates while trying to point the finger at the other.

Even if our whole generation votes third-party, it probably will not be enough to change the outcome of the election. However, it will be enough to show America just how frustrated millennials are with the current political climate. If Americans take time to think instead of giving into the desire to push the other candidate out, neither of these two-party candidates will get the 270 votes that they need.

# Winner-take-all best of bad options

TWO PARTY, from A5

popular election of electors.

This began with certain states changing their systems for mainly partisan reasons to enforce the two-party system. Once Democratic-leaning states changed their selection to winner-take-all system, Republican (or at the time Whig-) leaning states would do the same.

More recently, in political races including the presidency, primaries are held to find the top two candidates so people can choose between two, preferably moderate, sides. This is not always the case, looking at our current election.

However, alternative voting strategies exist, and there are a wide variety of them. We will discuss two: Approval and Instant-Runoff Voting.

Approval Voting is simple. Any number of candidates run for an office, and people can vote for as many as they want. Whoever wins the most votes wins. Simple.

Although it seems like a better system, there are several practical reasons why this may not work for our country. These two systems tend to lower amounts of negative campaigning, but as we have seen, campaigns get heated. If there’s one thing Bernie Sanders taught us, it’s that candidates running a positive campaign will sometimes turn sour when the going gets tough.

If multiple candidates ran from each major party for any office on any level, Approval Voting could run the risk of “bullet voting,” or only voting for the candidate you care most about. It is realistic to think that candidates would encourage this in the heat of an election.

Each vote on these ballots is equally weighted. Many voters would not want to equally support candidates in practice; this leads itself again to plurality voting as we have it. Approval Voting also does not eliminate the idea of spoiler candidates and would make us drop the idea that 50 percent plus one is a winning coalition, as many candidates might get more than a majority.

The next system is Instant-Runoff Voting, which is a bit

more complicated. It requires voters to rank all of the candidates from favorite to least favorite. Whichever candidate is last after tallying everyone’s top favorite gets eliminated, and those ballots move to their second favorite. This process continues until a candidate gets a majority of votes.

Although this system can work, it’s not a practical solution for logistical reasons. For one, ballot counting. If there’s one thing that elections in the past have taught us about ballot accuracy (2000), it’s that ballots can be inaccurate. In addition, voting in the United States is drastically underfunded. Realistically, counting these ballots quickly and then having to find a way to move millions of ballots to a second or third choice would be extremely complicated and time consuming. Until Congress allocates more money for changing the way we vote in elections, adjusting to this system would be impossible.

Another key issue with ranked voting is Arrow’s Impossibility Theorem. Yeah, you just got some serious math thrown in here, so get ready. Named for Nobel-Prize winning economist Kenneth Arrow, the Theorem postulates that no ranked voting system could be designed that satisfies three “fairness criteria.” it explains these as being:

That if all voters in a group prefer candidate A over candidate B, the group then prefers A over B.

If a candidate is eliminated, then the choice of candidates should depend on the voter’s preferences among the remaining candidates.

There is no single voter able to determine the outcome for a group.

I won’t get into the extended details of the proof for the Theorem, but you are welcome to look into it if you, like me, like to geek out on election science.

Looking at these systems brings up the question: How is the plurality voting we have better than this? Sure there might be faults, but it is an improvement.

As we have discussed at great length, the system established by our founders lent itself to a two-party balance. These two parties, although ideologically different, can be effective if they endeavor to work together. These alternative voting systems do not yield to a healthy two-party balance.

The French sociologist Maurice Duverger hypothesized Duverger’s Law in the mid 20th century. This law states that plurality voting such as first-past-the-post tends to encourage two-party systems. Some political scientists since then have theorized the inverse; that the two-party system may in fact favor first-past-the-post voting.

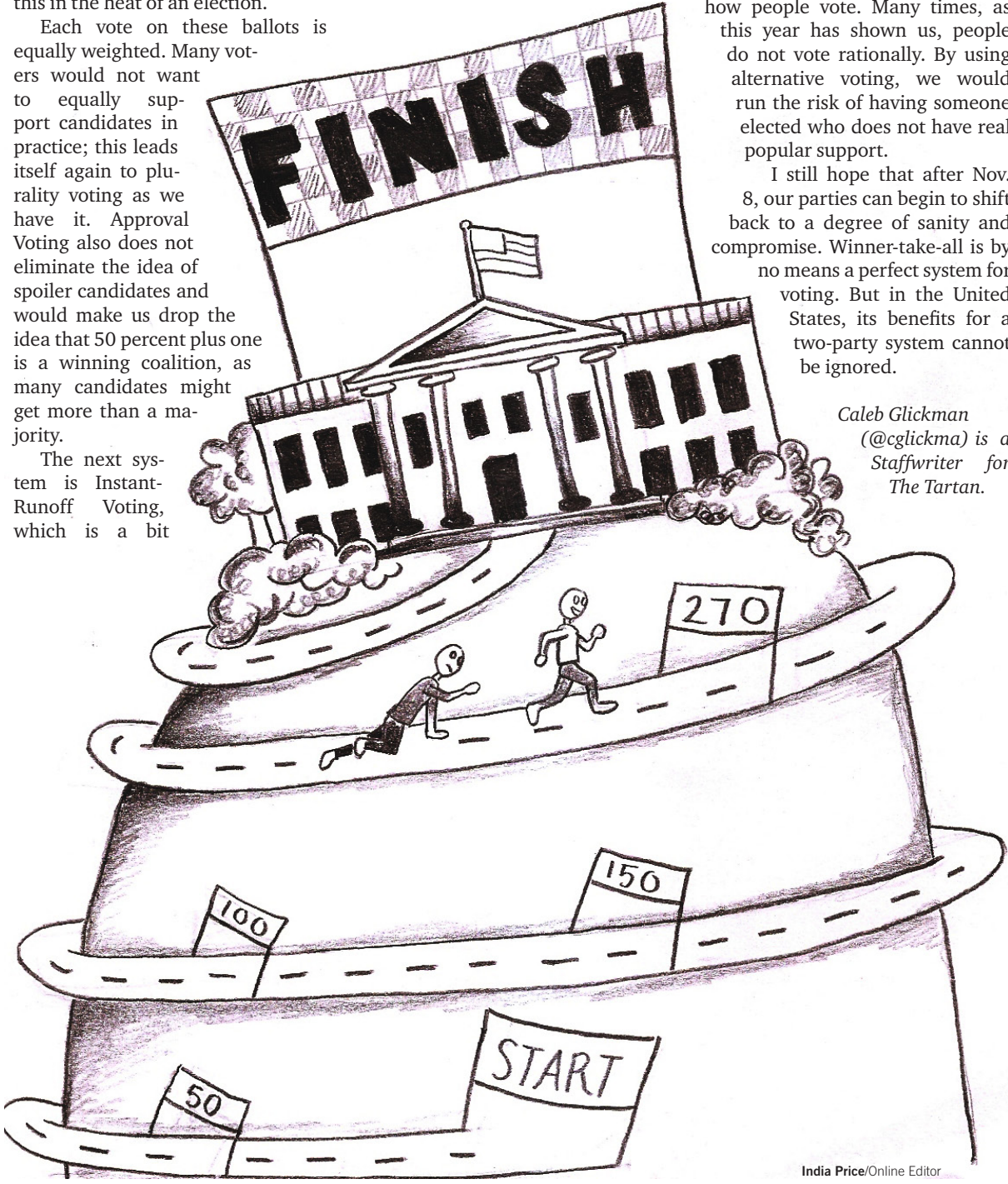
In a situation in which candidates run for an office with something other than plurality voting, there are a host of other threats that emerge, including bullet voting and strategically designating candidates as lower preferences to ensure they do not get support if a voter’s first preference does not win. Winner-take-all elections bring more voters under the two-party umbrella.

And again, there are too many logistical and financial obstacles to implementing one of the other voting systems.

We also have to be realistic about how people vote. Many times, as this year has shown us, people do not vote rationally. By using alternative voting, we would run the risk of having someone elected who does not have real popular support.

I still hope that after Nov. 8, our parties can begin to shift back to a degree of sanity and compromise. Winner-take-all is by no means a perfect system for voting. But in the United States, its benefits for a two-party system cannot be ignored.

Caleb Glickman (@cglickma) is a Staffwriter for The Tartan.



India Price/Online Editor



# Become a Tartan photographer.

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# Science & Technology

## White House Frontier Conference sparks innovative exhibits

**JULIA EVE NAPOLITANO**  
*SciTech Editor*

**THEODORE TEICHMAN**  
*Visual Editor*

Last Thursday, Oct. 13, Carnegie Mellon University had the honor of co-hosting the 2016 White House Frontiers Conference along with

the University of Pittsburgh. According to its website, the goal of The White House Frontiers Conference is to “bring together some of the world’s innovators in Pittsburgh to discuss how science and technology frontiers will help improve lives, including progress and investments that are keeping America and

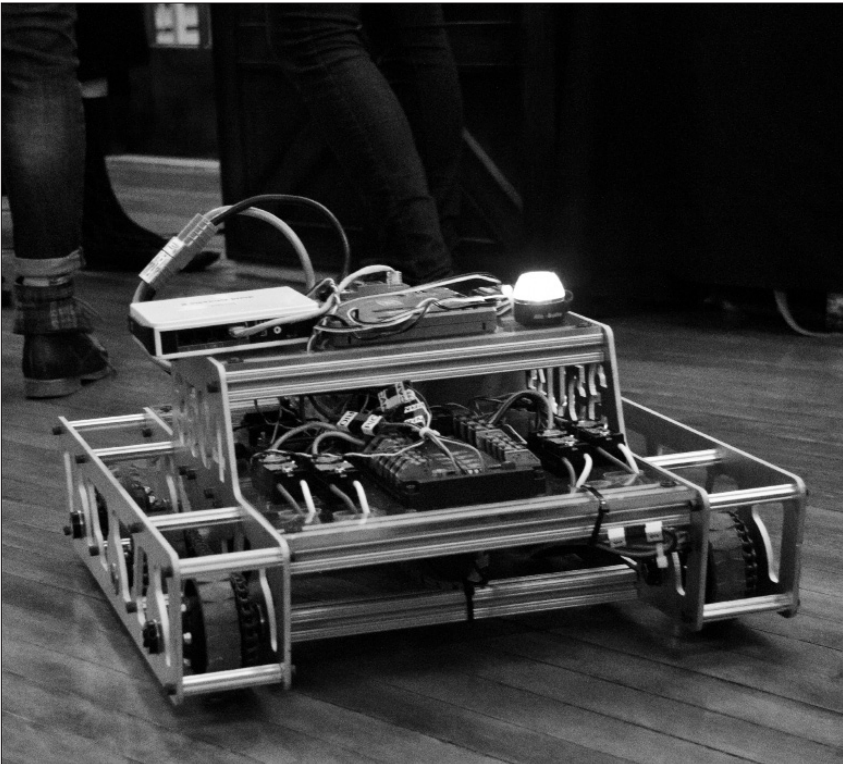
Americans on the cutting edge of innovation.” The Conference was broken down into five main tracts – Personal, Local, National, Global, and Interplanetary, with exhibits featuring each one. There were seven exhibits featured in the Personal tract. These included “Restoring Movement and Touch

with Brain Interfaces,” “Using Games to Map the Brain,” “Mapping the Brain through Citizen Neuroscientists,” “Diagnosing Mental Illness with Multimodal Behavior Perception,” “Developing Continuous Patient Monitoring for Cardiovascular Health,” “Enhancing Science and Discovery with Ultra-Low-Cost Paper

Microscopes,” and “Engaging Citizens with the Precision Medicine Initiative.” “Diagnosing Mental Illness with Multimodal Behavior Perception” was an exhibit run by Carnegie Mellon University that showcased MultiSense, a behavior-sensing technology that helps clinicians diagnose several mental illnesses,

including depression, post-traumatic stress disorder, and schizophrenia. MultiSense can detect subtle changes in a patient, including facial expression and vocal prosody, that identify behavior indicators of mental illness. The system can then

See **CONFERENCE**, A10



The “Inspiring Girls through Robotics” exhibit, hosted by Carnegie Mellon, showcased a chassis building kit (left) constructed by Girls of Steel Robotics (right), a K-12 outreach program run by CMU’s Field Robotics Center.

### HOW THINGS WORK

## Hurricanes are powerful, yet destructive forces of nature



Diane Lee/Junior Staff Artist

**JADON GROVE**  
*Junior Staffwriter*

There had not been a Category 5 hurricane in the Atlantic since 2007 until Hurricane Matthew struck Caribbean islands and the southeastern United States earlier this month, causing serious damage to life and property. The high winds, intense rain, and deadly flooding associated with the hurricane were demonstrations of our planet’s uncontrollable power. How exactly is a storm so powerful formed? What makes a hurricane capable of so much damage? It may be surprising to see that the reason behind all of this isn’t so different from the reason behind the weather we experience in Pittsburgh. Hurricane Matthew, like all other hurricanes that affect the eastern coast of the

United States, is an Atlantic hurricane. Atlantic hurricanes form just off the western coast of Africa, in the Atlantic Basin, which is one of the seven tropical cyclone basins. The Inter-Tropical Zone located near the equator is the region where the northeast and southeast trade winds collide. Between June 1 and Nov. 30, the winds of this zone shift a continual line of storms down to the equator all around the globe. Just as low-pressure systems follow the jet stream across the United States and are the reason behind the dreary cloudy days and rain of Pittsburgh, hurricane storm systems start as low-pressure systems slowly moving across this line. Depending on the ocean’s conditions, certain storms begin to gain strength. Deep warm water, large amounts of moisture in the air, and limited vertical wind shear can lead to this intensification.

See **STORM**, A9

### SCITECH BRIEFS

#### “Saturn on Steroids” planet 400 light years away

In a paper published by the journal *Astronomy & Astrophysics*, researchers Steven Rieder and Matthew Kenworthy investigated the celestial body named J1407b, which is either a giant planet or a brown dwarf. An interesting characteristic about J1407b is its expansive rings, which measure about 200 times larger than Saturn’s ring system at 75 million miles in diameter. J1407b orbits around a star, much like the planets of our solar system orbit around the sun, and at one point in its orbit, its rings approach the star at a distance that should disrupt the ring system. Rieder and Kenworthy propose that the lack of disruption is due to the rings spinning in the opposite direction of J1407b’s orbit. This hypothesis would explain the rings’ stability, but now Rieder and Kenworthy must rationalize how the rings can possibly spin in the other direction.

Source: *The New York Times*



#### Virus steals black widow’s poisonous genes

A virus called WO, which is classified as a bacteriophage, appears to have copied the genetic codes of latrotoxin, the poison of a black widow spider. WO targets a bacterium named *Wolbachia*, which infects insect and spider cells. Up until now, it was thought that bacteriophages only steal DNA from bacteria, so this new insight is especially surprising. Because latrotoxin can break down cell membranes, the researchers hypothesize that the virus uses this toxin in order to penetrate cell membranes and reach the bacteria living inside of animals. The latrotoxin may also allow the virus to exit cells as it needs to. Researchers Sarah and Seth Bordenstein from Vanderbilt University published the results of their analysis of the WO genome in the journal *Nature Communications*.

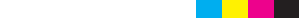
Source: BBC News



#### Ketamine as a new, possibly better drug to treat depression

Depression is still a vastly misunderstood disorder that researchers are working to demystify. For the most part, scientists have hypothesized that depression is caused by low levels of monoamines, chemicals that act as neurotransmitters in the brain. Drugs like Prozac boost the level of monoamines in order to treat the symptoms of depression. However, another type of drug, ketamine, which historically has been used for anesthesia, is rising. Ketamine has worked for 75 percent of patients who did not respond to other forms of treatment, and it works much faster than drugs like Prozac, which may take months. Ketamine does not primarily affect monoamines, so scientists must ascertain whether low monoamines levels are really the cause of depression, and how the functions of ketamine can be modeled to possibly create a new kind of antidepressant.

Source: *The Economist*



#### Jumping spiders detect sounds three meters away

Not only do jumping spiders have stellar vision, but they also apparently have great hearing capabilities. Researchers at Cornell University used metal microelectrodes to show that the spiders’ auditory neurons can sense sounds up to 600 spider body lengths away. When they stimulated the spiders’ hairs on their legs and body, the same auditory neurons fired, demonstrating that the hairs detect nanoscale air particles excited by sound waves. The researchers also found that the spiders are extremely sensitive to 90 Hz frequency, which is near the frequency of wing beats of parasitic wasps, which are jumping spiders’ greatest enemy. When exposed to 90 Hz sounds, eighty percent of the spiders in the experiment froze before trying to escape, which is a classic defense mechanism. The full study can be found in the journal *Current Biology*.

Source: Science Daily



#### Prosthetics that send feedback to the user

Historically, prosthetics could only receive commands from their wearers. Robert Gaunt and a group of researchers at the University of Pittsburgh are working towards developing a new prosthetic that not only receives commands, but also gives feedback. Gaunt is researching ways to send natural sensations to someone wearing a prosthetic. After the first six months of his experiment, his patient, who had lost the ability to use his hands, could identify the correct finger being touched 84 percent of the time wearing a prosthesis. The issues included the patient feeling sensations from below the skin and not being able to feel his fingertips. Despite the current roadblocks, the outlook is optimistic. Currently Gaunt and his researchers are 18 months into the experiment.

Source: *The Economist*



#### Google begins fact-checking its content

Google launched its new fact check tag just in time for the upcoming election. Now, users will be able to see fact check labels next to news articles on Google News, in addition to the labels denoting opinion, related, and local articles. This is an effort to help users distinguish between fact and fiction, which is an increasingly prevalent problem, particularly on the Internet. Google is not by any means a pioneer in the field, however. Many sites, including BBC, have their own fact-checking tools. Time will tell how effective Google’s algorithm is; Facebook has already revamped their “trending” tool after claims of left-wing bias.

Source: BBC News

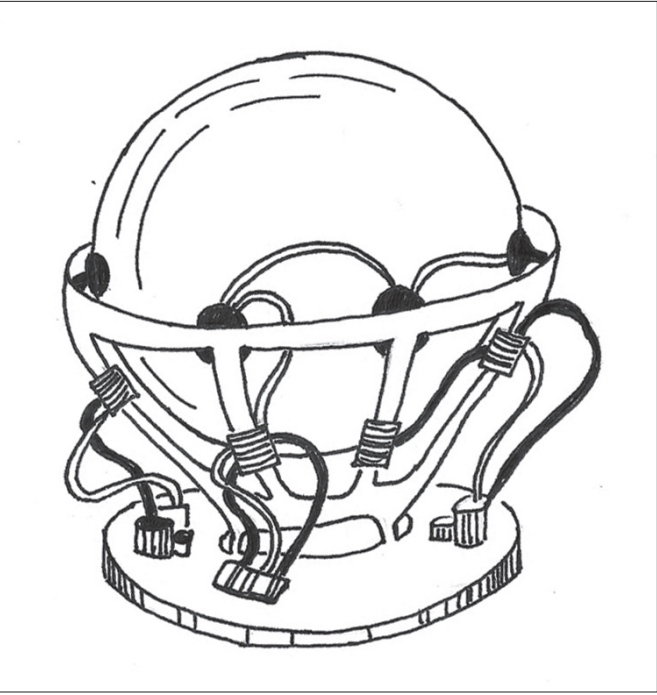


Compiled by  
**STEPHANIE YOU**





# New omnidirectional robot utilizes only two moving parts



JOSH ANDAH  
Staffwriter

Researchers always strive for efficiency in their robotic designs. Achieving this goal proves to be quite the challenge, however, as the demand for more moving parts and power in modern robots increases.

Nonetheless, the Hollis research group at Carnegie Mellon University demonstrated that this trend need not be the case by engineering the Spherical Induction Motor robot (SIMbot), a robot that balances on a single spherical ball bearing.

The SIMbot consists of only two moving parts — its

vertical body and a rotor for movement.

The body of the SIMbot rests atop the rotor like a pen atop a ballpoint, and stands about six feet tall.

The hollow metal rotor, coated with poly-urethane, spins under the body in all directions, albeit with some friction from the bearings it is connected to; Hollis suggested in an article for CMU News that future iterations of the robot could essentially eliminate friction by replacing these ball bearings with a thin cushion of air.

The SIMbot uses fascinating technology to function. Motion in the rotor is induced by actuators and rollers that can be adjusted to change spinning direction and yaw (i.e. the spinning motion of the rotor about a vertical axis); the robot achieves brisk walking speeds with this.

The robot also expends energy to keep itself balanced and to return to the upright position. This makes it difficult to tip over the robot, even after being kicked and shoved.

It uses an Inertial Measuring Unit to detect its body orientation and correct it; the measuring unit may be replaced by a gyroscope in other versions of the ballbot.

In the unlikely case of a system failure, the SIMbot has three legs that it can rest on for support.

Recent graduate Greg Seyfarth, who obtained a master's degree in Carnegie Mellon's Robotics Institute, wrote his thesis on the development and inner workings of the SIMbot, which gets much more technical.

Robotics Institute research professor Ralph Hollis designed the ballbot, on which the SIMbot is based, in 2005. He then patented the design some years later.

To add to this, Professor Masaaki Kumagai of Tohoku Gakuin University in Japan and EHP Zurich also made essential leaps in the SIM field with the BallIP robot and Rezero robots, respectively.

The SIMbot differs from the conventional robot in many ways. Other robots often have much lower centers

of gravity and slower acceleration and deceleration capabilities to avoid tipping.

If they do have wheels, they usually number no less than three, to ensure stability.

Furthermore, whereas other robots need to produce yaw to turn, the SIMbot simply changes the direction of rotation of the rotor, allowing it to turn in any direction.

The SIMbot opens offers unique advantages in several fields. Such technology could be harnessed in medical fields, package delivery, and locomotion.

Degrees of Freedom (DOF) arms can be added to the vertical body to equip the robot with more capabilities, as was done on the allbot in 2011, making it the only ballbot in the world with arms.

Thanks to its fewer moving parts, the SIMbot would be easier to maintain and produce, making it a viable option for such varying fields.

In a university press release, Hollis commented on the financial benefit of the SIMbot, stating "This motor relies on a lot of electronics

and software. Electronics and software are getting cheaper. Mechanical systems are not getting cheaper, or at least not as fast as electronics and software are."

The SIMbot shows us what innovation in engineering at Carnegie Mellon can achieve. It overcomes many of the limitations of conventional robots, while also offering newfound technology and opportunity.

"Even without optimizing the motor's performance, SIMbot has demonstrated impressive performance," Hollis said in the same university press release. "We expect SIMbot technology will make ballbots more accessible and more practical for wide adoption."

This research was supported by the National Science Foundation and Grants-in-Aid for Scientific Research (KAKENHI) in Japan.

It would be unsurprising to see the spread of Hollis and his research group's technology, possibly to consumer markets, in the coming years — something I suggest we all look out for.

## PUGWASH

# Icebreakers break through Arctic ice



ZEKE ROSENBERG  
Layout Manager

As the Arctic ice begins to melt, the way humans interact with the Arctic is changing rapidly.

Resources in the Arctic are more accessible and commercial cruises through the Arctic Circle are now possible.

In response to the changing geography, President Obama recommended that Congress fund a fleet of icebreaker ships for the Coast Guard.

The environmental and geopolitical impacts of such an undertaking could help the United States adapt to the new realities of the Arctic or cause significant problems for America down the line.

Icebreakers are large ships with reinforced hulls and a shape that allows them to slide up onto ice and then come down and break the ice.

They must be powerful enough to actually break the ice in order to be considered an icebreaker.

The melting of Arctic ice has allowed for ships to carry cargo through the Arctic, creating much more efficient trade routes between Europe and Asia.

The Northwest Passage that Europeans searched for in the 1400s has become accessible.

These trade routes will be most usable by countries with icebreaker fleets because the ice must be broken up for cargo ships to pass through safely.

Referring to the gap between American and Russian icebreaker fleets, Senator Dan Sullivan (R-AK) has said that "the highways of the Arctic are paved by icebreakers.

Right now, the Russians have superhighways, and we have dirt roads and potholes."

There are also military implications to having icebreakers. Strategic points in the Arctic will be more accessible or more easily defended when countries are able to get their ships to those points.

However, with American and Russian relations reaching what former Soviet leader Mikhail Gorbachev has described as an "dangerous point," it is probably best not to appear as if we are escalating our military involvement in an area where Russia might be vulnerable.

Further, shipments of heating fuel or other supplies

to places like Alaska in the Arctic can be hazardous. Having icebreakers ready to respond to trapped ships can help rescue the crew and recover the cargo.

It can be difficult for planes and helicopters to take over these missions due to the terrible visibility.

Further, ice can severely damage a plane or helicopter much faster than a boat and is harder to get off the plane.

On the other hand, icebreakers may be problematic for the environment.

Mass use of icebreakers could break ice to the point that it melts at a noticeably faster rate.

The introduction of things like cruise ships and cargo ships could also damage the environment due to things like emissions and faulty waste management.

Icebreakers also are damaging to the Arctic ecosystem.

Beluga whales, for instance, face significant

disruptions from noise due to icebreakers.

This could disrupt many cold water mammals and

have far reaching impacts that are difficult to predict.

Seemingly minor ecological damage has had severe impacts before and we haven't had much to do historically in the Arctic.

If icebreakers are damaging, though, it's unclear exactly how to stop them.

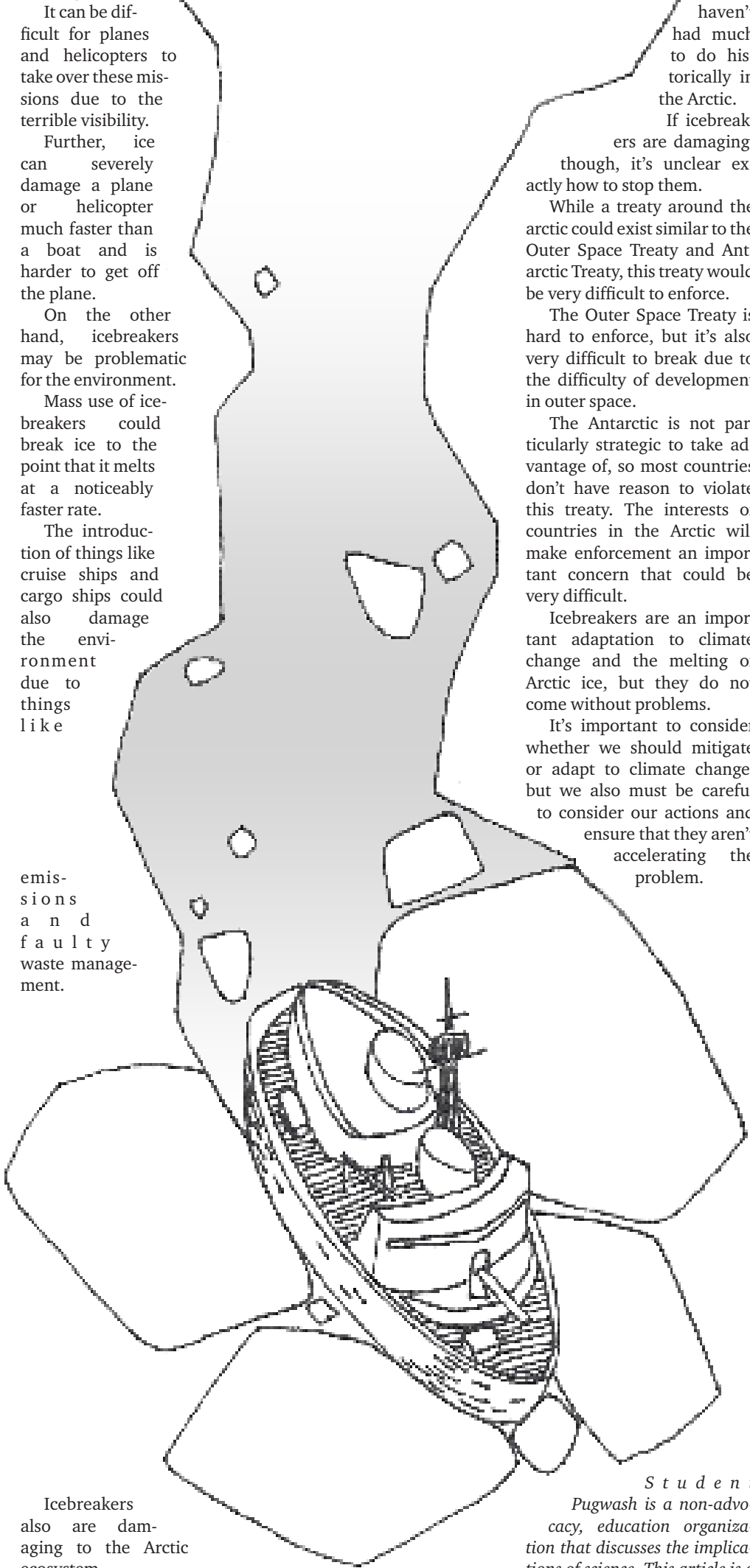
While a treaty around the arctic could exist similar to the Outer Space Treaty and Antarctic Treaty, this treaty would be very difficult to enforce.

The Outer Space Treaty is hard to enforce, but it's also very difficult to break due to the difficulty of development in outer space.

The Antarctic is not particularly strategic to take advantage of, so most countries don't have reason to violate this treaty. The interests of countries in the Arctic will make enforcement an important concern that could be very difficult.

Icebreakers are an important adaptation to climate change and the melting of Arctic ice, but they do not come without problems.

It's important to consider whether we should mitigate or adapt to climate change, but we also must be careful to consider our actions and ensure that they aren't accelerating the problem.



Diane Lee/Junior Staff Artist

Student Pugwash is a non-advocacy, education organizations of science. This article is a summary of last week's discussion on icebreakers.

# Storms are strong and inspire awe

STORM, from A8

Wind shear is the difference in wind velocity between two points. Low wind shear means that the winds don't "turn" or stay stable, which allows the hurricane to strengthen. As conditions become favorable for storm growth, the low-pressure systems begin to develop distinct characteristics.

As increased wind speed and counter-clockwise rotation become more pronounced, a tropical depression becomes a tropical storm. The tropical storm then becomes a Category 1 hurricane, increasing from Category 1 to Category 5 to match the logarithmic increase in storm strength.

The clear "eye" of the hurricane forms from a vacuum in the center of the hurricane. The walls of this calm center have the fastest speeds; this concept could be thought of as related to conservation of momentum.

Large rain bands form, often extending hundreds of miles outside the hurricane eye. While the hurricane forms, the low-pressure system continues to move in translation.

The global winds, along with rotation from the earth's pressure systems, combine to direct the hurricane, with high pressures rotating clockwise and low pressures rotating counter-clockwise.

In the case of Hurricane Matthew, as it began moving north along the southern United States coastline, a cold front, which refers to a line of colder wind, pushed eastward against the storm, keeping it along the coast instead of above land.

Each part of a hurricane contributes its own dangerous element. The wide and extensive rain bands deposit large amounts of rain for long periods of time.

For Hurricane Matthew, this was a serious issue in South Carolina where more than ten inches of rain fell during the storm and deadly flooding resulted. The counterclockwise rotation of the bands creates winds of differing directions in each quadrant of the hurricane.

In the northeast quarter of the storm, the nature of the bands can often lead to tornadoes when they reach land. When the direction of the winds lines against the coast, the continual high

winds actually push water from the ocean farther into land.

This storm surge was a very serious complication of Hurricane Sandy in 2012, increasing water levels and flooding large parts of New York City.

Categories are assigned to hurricanes based on their wind-speeds. Category 5 hurricane winds are sustained at more than 157 miles per hour.

This intensity in speed causes catastrophic damage to trees, buildings, and homes. The winds move fastest closest to the eye-wall, thus the Category 4 Hurricane Matthew's shift away from the coast of Florida may have saved the state from a grimmer outcome.

The eye-wall did eventually reach land in South Carolina, but the hurricane had weakened to a Category 1 storm by that time.

When hurricanes transition from the sea to the land, they lose the moist air and encounter rugged terrain.

This significantly weakens the storms; but before this, they are able to cause incredible damage.

However, due to increased weather-sensing technology, hurricanes can now be tracked in real time.

This provides valuable information that can be used to predict when people need to be evacuated from their homes and how much potential damage will result from the hurricane. For Hurricane Matthew, thousands of people in the United States were urged to evacuate, including people in Florida, Georgia, and South Carolina, where risks for flooding were most extreme.

The primary technology for monitoring hurricanes continues to be weather satellites and planes with special weather-sensing equipment. The data is then fed into supercomputers containing programs that can project a model trajectory of the hurricane.

Though deadly, hurricanes remain marvels of nature. The energy that pulls a roof off of a house on the coast is the same energy that is being removed from the heat of the ocean.

These storms balance some of the ocean's heat and sometimes the result is catastrophic. But looking beyond the damage caused, these storms are a powerful, almost respectable feature of nature.



# The Frontier Conference exhibits featured new technology



The “Using Games to Map the Brain” exhibit, hosted by Princeton University, featured new visualizations from Eyewire, a system of 3D neural circuits using virtual reality. Their new game, Neo, involves puzzles of perception.

**CONFERENCE**, from A8

be used to track the progress of a patient.

There were five exhibits featured in the Local tract. These included “Learning Practices of Making,” “Using Flying Machines to Assess Infrastructure in Hard-to-Reach Locations,” “Addressing Social Need through Assistive Technology Innovations,” “Displaying Autonomous Vehicles over Time,” and “Inspiring Girls through Robotics.”

Carnegie Mellon hosted the exhibits “Using Flying Machines to Assess Infrastructure in Hard-to-Reach Locations,” which showcased an autonomous flying-machine system developed by Carnegie Mellon’s Field Robotics Center to improve the efficiency, fidelity, and safety of current critical-infrastructure inspection methods; “Displaying Autonomous Vehicles over Time,” which showcased the evolution of autonomous vehicles, including the 1984 Terragator, the

2007 DARPA Urban Grand Challenger winner Boss, and a research vehicle integrating autonomous systems into a Cadillac SRX; and “Inspiring Girls through Robotics,” which showcased a chassis building kit constructed by Girls of Steel Robotics, a K-12 outreach program run by the Field Robotics Center.

For the “Inspiring Girls through Robotics” exhibit, members of the Girls of Steel Robotics Team displayed their projects and talked about the barriers to getting girls into Robotics and STEM.

The team was founded at Carnegie Mellon in the fall of 2010 and is mentored by an array of faculty from across engineering disciplines to mentor high school girls and show that the field of robotics is within their reach.

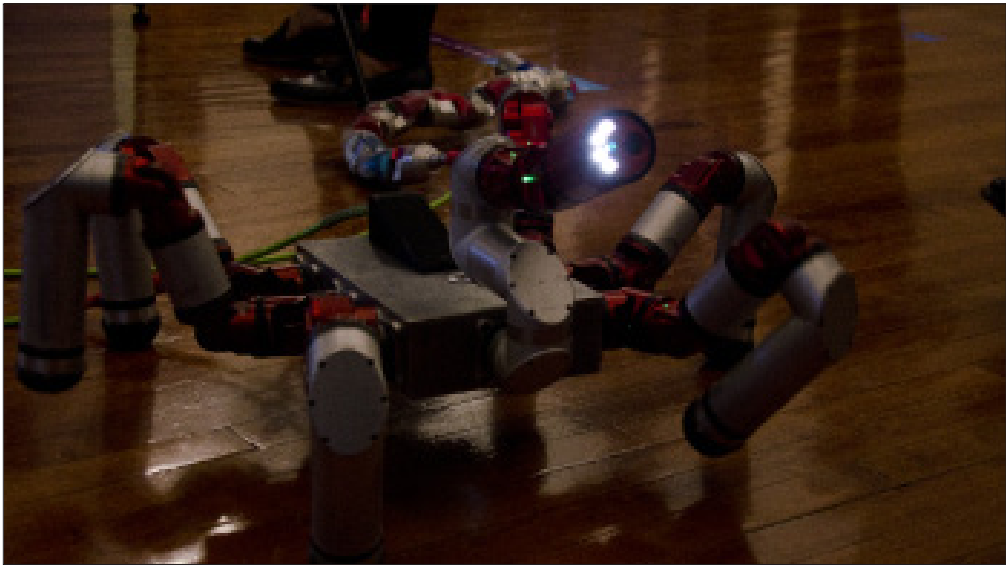
Each year the team competes at the FIRST robotics competition and spends the 6 weeks between the release of the challenge and the competition frantically building their complex models.

The team displayed these robots as well as their “easy to assemble” robot made by middle school girls mentored by the high school team members.

They also discussed how they had never before considered careers in engineering, but they now consider STEM and engineering a strong possibility for their future. They are excitedly plotting the next FIRST conference.

There were four exhibits featured in the National tract. These included “Snake Robot and Snake Monster,” “CoBot Service Robots,” “The Mobility Enhancement Robotic Wheelchair,” and “The Socially Aware Robot Assistant.”

Carnegie Mellon hosted the exhibits “Snake Robot and Snake Monster,” which demoed two biologically inspired robots that can navigate to places that humans can’t reach, such as threading through tight spaces and navigating rough terrains; “CoBot Service Robots,” which showcased the autonomous mobile-



The “Snake Robot and Snake Monster” exhibit, hosted by Carnegie Mellon, showcased Snake Monster (above), a six-legged remotely controlled robot that can navigate through rough terrain that humans would have difficulty with.

service robots developed by Carnegie Mellon’s CORAL lab that have been navigating the Gates-Hillman Complex for the past three years; and “The Socially Aware Robot Assistant,” which showcased a robot that uses artificial intelligence to pair each task goal with a social goal in order to personalize interaction and improve task performance.

The four exhibits featured in the Global tract included

“Energy Inventor Labs,” “Climate Playground,” “Wave Energy Prize,” and “Geoscience Data Visualization.”

The four exhibits featured in the Interplanetary tract included “Hyperwall,” “Journey to Mars,” “Laser Interferometer Gravitational-Wave Observatory,” and “Commercial Crew.”

The common emphasis across all of the exhibits featured in these different tracts

was that technology will help build our future. In part, Carnegie Mellon hosted a number of exhibits because of the convenient location. However, there is also some incredible, cutting-edge technology being developed here that will undoubtedly shape the future.

As Carnegie Mellon’s biography on The White House Frontiers Conference website says, “CMU doesn’t imagine the future, we create it.”

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## Upcoming Events

**Men’s Soccer**  
vs. La Roche  
at Carnegie Mellon  
Oct. 19, 7 p.m.

**Volleyball**  
vs. Messiah  
at Carnegie Mellon  
Oct. 21, 8 p.m.

**Volleyball**  
vs. Elizabethtown  
at Carnegie Mellon  
Oct. 22, 11 a.m.

**Women’s Soccer**  
vs. Nazareth  
at Nazareth  
Oct. 22, 3:30 p.m.

**Football**  
vs. Thiel College  
at Carnegie Mellon  
Oct. 22, 1 p.m.

**Volleyball**  
vs. Rochester Institute  
at Carnegie Mellon  
Oct. 22, 3 p.m.

## UAA Soccer Standings

Men’s Univ.	W	L	Women’s Univ.	W	L
Chicago	13	0	Chicago	12	1
Emory	8	3	<b>CMU</b>	9	3
Wash. U.	8	1	Wash. U.	10	2
Rochester	8	1	Brandeis	12	2
<b>CMU</b>	9	2	Emory	8	5
NYU	5	5	Rochester	2	6
Brandeis	5	4	NYU	7	3
CWRU	4	7	CWRU	5	5

### SPORTS BRIEFS

#### Women’s Soccer

The Carnegie Mellon women’s soccer team traveled to the University of Rochester on Friday and defeated the home team Yellowjackets 2–1 in overtime. This win brings the Tartans to a tie at the top of the UAA standings with a 2–1 record, and they improve to 9–3–1 overall on the season with this win.

Rochester struck the first blow in the middle of the fourth minute when a Yellowjacket player gathered a rebound and launched the ball past the Tartan goalkeeper.

It took most of the game before the Tartans managed to find their first opportunity to score. The Tartans remained down by one point until the 72nd minute when sophomore Katja Bracklemanns-Puig sent a left-footed shot into the top corner of the goal after an assist from first-year Sydney Webber.

Regulation time ended and

the game was still tied 1–1. That all changed in the 96th minute when junior forward Haili Adams scored her second game-winning goal of the season. The play was assisted by senior Amelia Clark, who sent a long pass down the field that was gathered by Adams before she sent the ball to the back of the net. The goal ended the game with the Tartans up 2–1.

**Men’s soccer**

The Carnegie Mellon men’s soccer team took the field at the University of Rochester on Friday, and the Tartans were defeated in a nail-biting match by a score of 3–2. This was the second loss of the year for the Tartans, moving their overall record to 9–2–1.

The Tartans scored first when sophomore Anthony Gulli sent a corner kick straight into the goal for his fourth score of the season. Rochester matched that score in the 53rd minute, and then

took the lead for themselves less than two minutes later with another goal.

The Tartans did not give up, however. In the 77th minute, sophomore Zack Masciopinto scored off a free kick from sophomore Philip Petrakian. The Tartans could not hold on to the game, though. Less than two minutes later, the Yellowjackets scored again after a long scuffle in the goalie box. The Tartans had multiple shots on goal in the end of the game but none were successful, and the Tartans dropped the contest 3–2.

**Football**

The Carnegie Mellon football team traveled to Beaver Falls, Pennsylvania on Saturday to take on Geneva College in a President’s Athletic Conference (PAC) game and dominated the Golden Tornadoes with a 29–10 victory to improve their record to 3–3 on the season, 3–2 in PAC play.

Geneva actually scored first in the game with a field goal, but Carnegie Mellon answered quickly at the end of the first quarter with a one-yard touchdown run from junior Sam Benger. The Tartans added onto their lead at the end of the first half as sophomore quarterback Alex Cline completed a five-yard pass to junior Tommy Mansfield. Senior placekicker Gabe Renna then put a field goal on the board to put the Tartans up 17–3 in the third quarter. Geneva managed to score a touchdown on their next drive, but then the Tartans really turned up the heat. Renna scored with another field goal, and on the ensuing drive sophomore Long Tran recovered a Geneva fumble and gave the ball back to the Tartans. On the first play of the Tartan offensive drive, Cline found junior Alex Froimozon in the endzone to put the final nail in Geneva’s coffin. The Golden Tornadoes added

insult to injury by snapping a ball out of the endzone and giving the Tartans an additional two points on a safety.

The Tartans’ next competition will be at home against Thiel College. The game is scheduled for Saturday, Oct. 22 at 1 p.m.

**Volleyball**

The Carnegie Mellon volleyball team competed in the second University Athletic Association (UAA) round robin on Saturday, hosted by Brandeis University. The Tartans played two games and went 1–1 on the day, improving their record to 17–5 overall and 2–3 in UAA play.

In the first match against New York University, the Tartans won with scores of 25–11, 25–16, and 25–21. Sophomore Lauren Mueller led the Tartan offense with 15 kills while senior Jackie Gibbons had eight kills of her own along with four service aces. Senior Emily

Newton had 29 assists and first-year Kayla Yew was the top defender for the Tartans with 13 digs.

In the second match against Emory, the Tartans dropped the first set 25–18 before coming back in the second and winning 25–22. The Eagles won the final two sets, 27–25 and 25–20 to defeat the Tartans.

Mueller was at the top of the offensive statistics again with 12 kills, and Gibbons recorded her 1000th career kill after earning nine in the match. Junior Eliza Donahue had eight kills of her own on top of two solo blocks and two block assists. Newton had 39 assists and 11 digs. Senior libero Molly Higgins recorded 26 digs for the match, and passed 2,000 total digs in her career, an impressive achievement.

Compiled by  
**ALEX WOOD**



Courtesy of CMU Athletics  
Senior Jackie Gibbons jumps for a ball near the net. Gibbons was a strong force in both matches this weekend.



Courtesy of CMU Athletics  
First-year Ryan Casey focuses on the ball and getting past a defender. She helped her team to the win on Friday.



# Sports

## The Tartan fantasy football league stumbles into Week 5

INDIA PRICE  
Online Editor

It's tradition in The Tartan Fantasy Football League to make the biggest loser of the week hang up their jersey in shame and write the recap article. However, week five was pretty interesting. This was the first week I decided to do something drastic that I had not yet considered: try. Torment from my fellow team owners convinced me that I could at least bench players with negative projected scores. Sports Editor Alex Wood's starting lineup

consisted of two tight ends, a running back, and the entire Seahawks defense on their bye week. Despite the fact that my entire team played and that I actually tried for once, I still only narrowly swooped in for second to last over Wood. Quantitatively Wood is the biggest loser, but I will bow out gracefully as to not cause myself any more humiliation and to relieve Wood of another article. So without further ado, here's the fantasy football week five recap, as told by the owner of the worst quality team in the fantasy football league.

**Distressed Donkeys over Plaidie Daddies 105–86**  
Going into the week five matchup against Pillbox Editor Abhishek Tayal's Distressed Donkeys was nerve-racking for me. Pittsburgh Steelers quarterback Ben Roethlisberger put up 34 points the week prior against the New York Jets and I was worried about a repeat scenario. As a Pittsburgh native, I took it pretty personally when Steelers' quarterback Ben Roethlisberger and running back Le'Veon Bell handed the Distressed Donkeys 29 and 23 points respectively. To my

demise, New York Giants quarterback Eli Manning scraped me up a mere nine total points. The Plaidie Daddies' top scorers were Denver Broncos wide receiver Emmanuel Sanders, who brought in 15 points against the Falcons, and Baltimore Ravens tight end Dennis Pitta, who brought in 12. Unfortunately, the Plaidie Daddies left 51 points on the bench and didn't stand a chance against Roethlisberger and Bell, nor could they pull more points than San Diego wide receiver Travis Benjamin, who managed to run the ball 117 yards, snagging the Distressed Donkeys another 18 points. The Distressed Donkeys took the W over the Plaidie Daddies, 105–86.

**Dreamland Warriors over extremely dank team 124–72**  
This rivalry was a heated one. Sports Editor Alex Wood versus Assistant Sports Editor Ian Tanaya. Unfortunately, and maybe even unknowingly for Wood, he started a team that would go on to only play five players. Despite extremely dank team grabbing onto 33 points from this week's league top scorer, wide receiver T.Y. Hilton of the Indianapolis Colts, Tanaya's Dreamland Warriors still boasted a 52-point lead at the end of the week. Key players for Tanaya this week were Chicago Bears running back Jordan Howard and Arizona Cardinals wide receiver Larry Fitzgerald. Howard finished the week with 118 rushing yards and a touchdown, for 24 points. Fitzgerald completed six receptions from quarterback Drew Stanton, pulling in 26 points. Other notable Dreamland Warriors performances came from San Diego wide receiver Tyrell Williams, who set

a career high in yards against the Raiders, and Buffalo Bills running back LeSean McCoy, who rushed an impressive 150 yards against Los Angeles.

**What is going on? over Mr. Rodger's Neighborhood 132–102**  
Regardless of the fact that Forum Editor Sinead Foley literally did not know what was going on, she put up an impressive victory over Operations Manager Jade Crockem's Mr. Rodgers' Neighborhood. Arizona Cardinals running back David Johnson gained What is going on? 32 points after rushing an impactful 157 yards. Indianapolis Colts quarterback Andrew Luck threw for two touchdowns against Chicago, handing Foley another 21 points. What is going on? also saw strong performances from wide receivers Randall Cobb of the Green Bay Packers and DeAndrew Hopkins of the Houston Texans, who earned 19 and 16 points respectively. Crockem's performance cannot be discounted, however. Dallas Cowboys running back Ezekiel Elliott handed Mr. Rodger's Neighborhood a strong 31 points. Denver wide receiver Demaryius Thomas and Green Bay QB Aaron Rodgers, both snagged an amicable 15 points for Mr. Rodger's Neighborhood.

**Flaming Bears over How does this work? 148–140**  
After figuring out the gist of what was going on, Foley's performance improved immensely. But Layout Manager Zeke Rosenberg was hard to rival in week five, with all but Arizona kicker Chandler Catanzaro throwing up double digit scores. The highest score from Rosenberg this week came from Carolina

tight end Greg Olsen, who put up 27 points against Tampa Bay. Pittsburgh wide receiver Antonio Brown also had a strong week, completing nine receptions for 78 yards and 22 points against the Jets. Though she suffered a loss to Rosenberg, Foley's team put up the second-highest score in the league thanks to impressive displays from Colts kicker Adam Vinatieri, 49ers running back Carlos Hyde, and Bengals QB Andy Dalton, all offering up over 20 points.

**Masshole Knickerbockers over McManus's Anus 108–97**  
Former Personnel Manager Lula Beresford put up her first W this week against Publisher Sarah Gutekunst. Both teams fought hard, but the Masshole Knickerbockers pushed ahead thanks to Patriots QB Tom Brady (sigh), who completed 406 yards against Cleveland in his season debut for a total of 29 points. Oakland wide receiver Amari Cooper did his part for the Knickerbockers, bringing in 138 yards for 27 points overall. McManus's Anus had a slightly rougher week, leaving over 40 points on the bench. Some notable performances, however, came from Detroit QB Matthew Stafford and New England tight end Rob Gronkowski who scored 18 and 15 points respectively.

Going into week six, I'm determined to get back on my A-game. I've got some tough competition against the 4–1 Flaming Bears, but I'm hoping that my newly acquired Steelers defense can bring it home for me. I'm also excited to see how Crockem and Gutekunst navigate what is likely to be the most heated matchup of the season.



Courtesy of Keith Allison via Flickr Creative Commons  
Pittsburgh Steelers quarterback Ben Roethlisberger sets up behind his offensive line to pass against the Ravens.

## Senior Luke McDonald has brain and braun on the field

JADE CROCKEM  
Operations Manager

For Tartan athletes, it's just as important to be a good athlete on the field as it is off. This especially holds true for senior neuroscience major and offensive lineman, Luke McDonald. Born and raised in Lancaster County, he's been passionate about football from a young age. "I started playing in the third grade. I had been playing football for as long as I can remember," McDonald said in an interview with The Tartan. Growing up around football encouraged McDonald to continue the legacy in his family. "My dad played in high school and he coached with my uncle, who played at Bucknell in college. My grandfather played college football at Michigan State."

It was only natural for McDonald to pick up where the

other players in his family left off, on the football field. McDonald is just as passionate about what happens on the field as he is about what happens off the field. "I am really passionate about coaching football," McDonald said as he spoke about his experience coaching with his father. "My dad is the head coach at Elizabethtown High School and I have coached with him over the past two summers." The most rewarding part of this process for McDonald is being able to share his knowledge of football with those who are in the same shoes he was in just a few years ago, "Imparting my knowledge to high school kids and seeing them take what I have taught them and use it to succeed" (McDonald's favorite part about coaching.) This perspective gives McDonald a chance to reflect on his experience on the field while

also helping younger players succeed. Having this experience allows McDonald to understand football from more than just the viewpoint of the player.

For McDonald, being a good athlete extends beyond the field. McDonald knows how important being part of a team is and how essential it is to act for the good of the team rather than just for his own interests. "Being a good athlete, on the field, means being responsible for your job, and doing your job to the best of your ability for the good of the team." Being part of a team is about being a part of something bigger than yourself, and McDonald carries these same sentiments into his personal and academic life. "Off the field, being an athlete means representing your team and school in the best way, and excelling at everything you can." McDonald understands the importance of portraying himself in a way that will reflect positively on the team. For McDonald, football is more than just a sport; it's a way to recover from the stress of classes. Carnegie Mellon can be a stressful environment, and for McDonald, "football is a release, a way to escape schoolwork and stress that happens here at CMU." It's also a way for McDonald to "unite with my friends and teammates for a common goal, to win." Football has really taught McDonald the importance of what it means to be on a team. Despite taking a lot of time out of his schedule with daily practice and weekend games that can sometimes take the team out of state, McDonald feels that it is all worth it to do what he loves. "There is nothing better than going out on a Saturday and winning with your teammates."



Courtesy of CMU Athletics  
Senior offensive lineman Luke McDonald sets up on the line for a play.

## Rozenvasser takes fourth in national tennis tournament



Courtesy of CMU Athletics  
First-year Michael Rozenvasser winds up for a swing. He finished fourth in the ITA Oracle Cup this weekend.

ALEX WOOD  
Sports Editor

On Thursday, first-year Carnegie Mellon men's tennis player Michael Rozenvasser competed in the quarterfinals of the Intercollegiate Tennis Association (ITA) Oracle Cup in Arizona. Rozenvasser has had an impressive start to his rookie season, and he qualified for the national tournament by winning the ITA Southeast Regional tournament on Oct. 3.

For Rozenvasser's quarterfinals match, he had to face off against the number one seed in the tournament, a senior from Skidmore College. This challenge didn't deter Rozenvasser's focus at all though, and he played a controlled, clean game to take down his opponent in two quick sets, 6–2, 6–2. He earned himself a ticket to the national tournament semifinal round.

The following day, Rozenvasser stepped onto the hot Arizona court for another intense match. The young rookie was matched up against another senior in this round, this time from Emory University. Rozenvasser started slow, making a few mistakes in the first set and eventually falling 6–2. This didn't keep Rozenvasser from pushing back, however. He gathered himself in between sets and came out strong in the second, jumping out to a quick 4–1 lead. The pressure must have started to mount on Rozenvasser, or perhaps it was fatigue, but he began to lose the lead that he had worked so hard to achieve in the first half of the set. Rozenvasser tried his best to stay in the game but his experienced senior opponent would not let go of his grip on the game. Rozenvasser dropped the next five games and lost the match with a final

score of 6–4 for the set.

That wasn't the end of the tournament for Rozenvasser, however. He still had to play the third place match against last year's fourth place winner at the same tournament. Rozenvasser's inexperience once again proved to be a key factor in the game as he was defeated 6–2, 6–3. Rozenvasser should be proud of his performance, though. He was the only Tartan player to be invited to this tournament, and competed as a first-year against a field of mostly seniors. Even though he didn't make it past the semifinals, Rozenvasser can look back at this tournament and know he improved as a player and competed among the best at a national level. This was the last competition of the year for Rozenvasser and the Tartan men's tennis team, but they'll pick back up in February for more action on the court.





# pillbox

The Tartan's Art & Culture Magazine

10.17.16 • B4 Strip Crawl • B6 Maker Faire • B8 Denzel Curry



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# advice for awkward people

about reconciling politics and climate change

Sarah Gutekunst | Publisher

Dear Sarah,

This week I watched *Interstellar* for the second time, or rather, the first time not under the influence of potentially delicious baked goods. So basically, I watched *Interstellar* for the first time this week.

It's lingering like a cold sore on my mind. There are, of course, several reasons for this: I felt the emotional wreckage that Coop and Murph's relationship left in my heart, I wondered why Coop would send the "stay" message again when he was there when it didn't work, I still struggled to understand relativity, but most of all, I freaked the fuck out about the environment. I don't ever want to be alive for a time when Plan A is to abandon Earth and repopulate the great unknown. My survival instincts are pretty weak. Once the panic of our inevitable demise sets in, I'll probably just die from the anxiety. My anxiety is already killing me just thinking about it. So, like, anyone else?

Not to mention, the honey bees, the carbon tipping point, Hurricane Matthew, AND the

Great Barrier Reef. Our planet is literally on the verge of a massive natural crisis and some of the most powerful people on the planet still try to look the nation in the face and say there's no problem. Haven't these people seen *Interstellar*? Are they willingly leading us into a future without food or air? It's not like we need those things, really.

Sarah, talk me down before I hop the next Megabus to D.C. and cause a scene.

Super Creeped About Rapid Earth Decay

Dear SCARED,

I'm going to do the opposite of talking you down. I'm going to recommend some more movies. Go ahead and try *The Day After Tomorrow*, *Into the Storm*, *Dante's Peak*, any *Mad Max* movie, *On the Beach*, *The Road*, and I could go on.

The film industry has embraced the theory that nature will one day kill us, which we kind of

deserve for killing nature anyway. You might think, why should I watch all these movies when I'm already mad at humanity for destroying the planet?

It comes down to the psychological principle of habituation — if a stimulus is repeated enough it will begin to have less and less impact. Just inundate your senses with destruction and you'll become numb to it! It won't help the world, but it will help you not to be as sad about the failure of the human race.

But if you really want to do something, you don't have to hop on a bus to the nation's capital. Show up at the polls this November and vote for candidates that prioritize environmental and climate issues, or at least the candidates that don't openly plan to screw us over, like Donald Trump and Pat Toomey. A vote for either of them is a vote for imminent death. Think about the honey bees, before it's too late.

Go forth in righteous anger,  
Sarah

## AcaPittsburgh

vocal talent at Carnegie Mellon? oh yeah.

Carnegie Mellon University is one of the most prestigious schools in the country, and it houses the most quirky and fantastic, talented and straight-up glorious bunch of students I have met. If there was ever a time that this was true, it was last Saturday night at AcaPittsburgh.

The students that make up the various a cappella groups on campus are energetic and absolutely in love with what they do. Many put in over four hours a week of practice with their groups, as well as their own personal practice time outside the group, all while juggling other extracurriculars and all the craziness that is Carnegie Mellon coursework.

This event was both mind blowing and beneficial to the community. Counterpoint, the first all-female a cappella group at Carnegie Mellon, worked in tandem with Sigma Alpha Iota to organize the event.

All proceeds go to People to People, an organization that provides assistance

and encouragement to music programs in developing countries all over the world.

People to People fosters and supports the important role that music plays in creating interconnected communities, and truly supported the message of the night, that music is the universal language.

I cannot even begin to express how much every single performance blew me away. The pieces that each group performed ranged from hauntingly beautiful to soul-rocking, and included everything from Kanye West to ABBA (personal favorite).

Deewane and Saans incorporated their cultural background into their music by meshing Indian languages with modern pop songs, creating unique parallels between the different styles of music.

Treblemakers made my heart tremble with the power of Halsey's "Control." C# Singers threw

the audience into fits of giggles with their hilarious rendition of "Shia LeBeouf."

Soundbytes created a charged atmosphere with "Ultralight Beam," and The Originals brought everyone nearly to tears with their heart-wrenching arrangement of "Stone Cold."

At the end of the night, Counterpoint wanted to redefine what it meant to "sing like a girl" and performed ABBA's "Man After Midnight" which made the girl power levels in the room skyrocket.

Altogether, the night was nearly two hours of amazing singers and vocal percussionists who, quite honestly, knocked my socks off. Music that I had never even heard before managed to reach into my chest and grab me by the heartstrings.

If you didn't get a chance to witness all of the amazing talent at AcaPittsburgh, don't worry. There are more a cappella concerts to come.

Julie Sanscartier | Comics Editor



# Strip Crawl

Julie Sanscartier | Comics Editor



## Student Senate organized event gives us a chance to explore the colorful Strip District.

Traffic along the strip district slowed to a crawl this past Saturday as Pittsburgh residents and Carnegie Mellon students came to enjoy the various vendors that crowded the streets. The Carnegie Mellon Student Senate organizes the Strip Crawl event on a yearly basis, in order to give Carnegie Mellon students a chance to explore the various cultures housed by the Strip District.

Carnegie Mellon students received discounts from participating vendors, which included delis like DeLuca's, as well as sweet shops and some artisan wares. Highlights of this year's Strip Crawl include:

### **Karen's Kind Beads**

This quirky little store is made up of entirely handmade items which range from earrings to necklaces to knitted scarves. Every piece was beautifully made with care. The founder of the shop began making the crafty wares five years ago, and hopes that people who buy them will wear them happily and in good health.

### **DeLuca's Diner**

As a self-proclaimed foodie, I couldn't help myself from eating something throughout this food-laden event. DeLuca's Diner is not to be missed on the list of affordable and amazing places to eat. They offer a wide

variety of comfort foods, and they absolutely rock their breakfast menu. As you're already in Pittsburgh, take the plunge and stuff yourself sometime soon.

### **Lilly's Sweet Bakery**

I had to have a buddy keep me from buying literally everything in this bakery. Every pastry and icing-covered item looked absolutely heavenly and tasted fantastic to boot. If you want the best sugar high you've ever had, definitely make a stop there.

### **Klavon's Ice Cream**

Stepping inside Klavon's is like taking a giant time hop back to the world of the 1930s. With their revolving bar stools and stainless steel equipment, you'll be shocked that there isn't a Wurlitzer jukebox in the corner. On top of the aesthetic and atmosphere, they also offer a range of ice cream flavors, sundaes, and if you're feeling a bit old fashioned, floats.

### **Bradley's Book Outlet**

This book shop is quaint and a gem for students who love to read and don't want to be broke. Bradley's sells discounted books of all kinds, as they have been for the past 20 years. They always have deals and coupons popping up, so if you're a bookworm, drop by.

### **Allegheny Coffee & Tea Exchange**

If you're a coffee addict, then this is the place for you. Allegheny Coffee & Tea Exchange has been located in the Strip District for over fifty years!

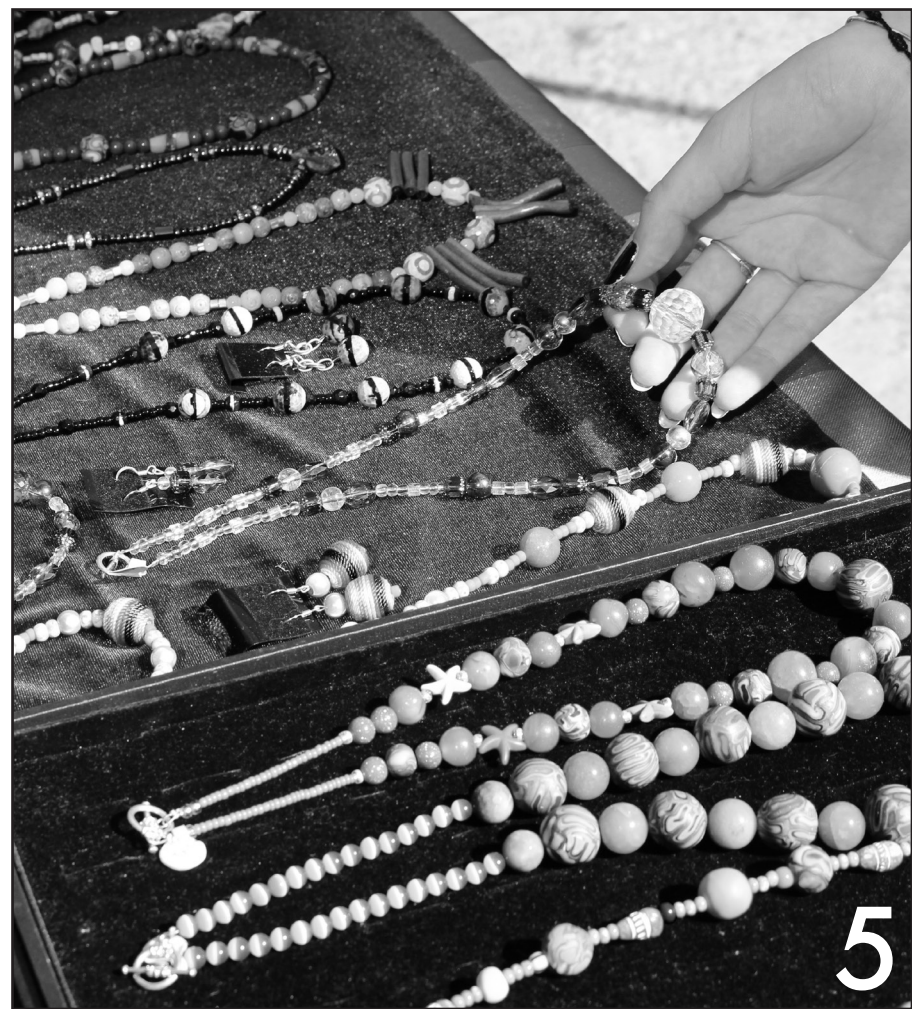
They offer gourmet teas and coffees, as well as regular blends if you're not feeling quite as adventurous. On top of delicious coffee and tea, their atmosphere is cozy and comforting, and I found it very hard to leave once I stepped through the door.

### **Roxanne's Dried Flowers**

This gorgeous shop creates a variety of colorful and decorative items that are reasonably priced, and they make them all year round! If your dorm room starts getting a tad gloomy this Pittsburgh winter, definitely visit Roxanne's to give it a pop of color.

This does not even begin to cover the massive number of amazing places the Strip District has to offer. It is a beautiful and culturally dense part of Pittsburgh. If you're new to the city, or even if you just haven't been there in a little while, spend a day in the Strip District and see what the city really has to show you. And of course, eat ALL of the food. It's fantastic.







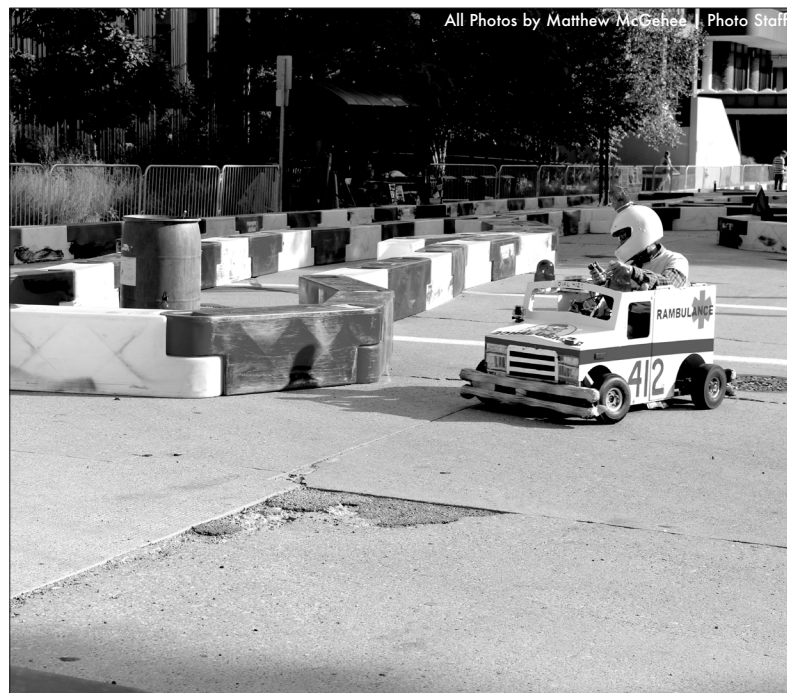
# Maker Faire

Matthew McGehee | Junior Staffwriter

Inventors, scientists, crafters and creators of all shapes and sizes gathered at the Pittsburgh leg of Maker Faire this Saturday. The Faire, which has now become an international phenomenon, first launched in 2006 and has become a hub for curious minds.

This weekend, attendees had the opportunity to engage in a variety of workshops, presentations and intriguing banter with some of the best and brightest minds out there.

Exhibits included battling robots, flaming guitars, and animatronic faces, amongst others.



A test drive of one of the go-carts that was being prepared for the big race later in the day. Watching it speed by was exhilarating.



"I'm a full time YouTuber. I make fully functioning models of things from movies and video games."



Robots, controlled by engineers on their laptops, were playing a ball game reminiscent of soccer. They were ramming into each other, pushing the ball around, and occasionally even picking it up off the ground.





A daughter helping her father work on repairing one of the go-carts. It was impressive to see them working together on something they clearly loved to do.



Robert Zacharias is a Tangible Interaction Design Masters Student at Carnegie Mellon University. His piece creates a three dimensional image of a person's face as a second person taps it with their finger in different places.



One of Greek Gadget Guru's devices, "the fire-sword," in action.



Greek Gadget Guru is a self-described "YouTube Superhero." On his YouTube page he says that "Inspired by science fiction movies, video games, and comics, I invent and construct amazing badass gadgets!" In this picture, he demonstrates for a small crowd of excited children how these gadgets work.



# Denzel Curry

Izzy Sio | Staffwriter



## Florida based rapper blows the roof off CC Studio Theater

I've never loved rap music. Hip Hop and Rap was never really my thing in high school. But when Carol City, Florida-based rapper Denzel Curry brought the house down at the Cohon Center's Studio Theater Saturday, Oct. 15 to a sweaty, capped room of 200 students, I completely changed my mind. Throughout the night, Denzel Curry brought the crowd on a wave of non-stop energy, lighting up the crowd with his

verses, freestyles, and dominating presence. The Activities Board's second concert of the year did not disappoint, from the opening act's first note to Denzel Curry's final verse.

MORGANTICS opened the concert playing and remixing tracks from current hip hop legends, while also playing his own original songs. He succeeded in setting up this really chill vibe and

building anticipation for whatever Denzel Curry was about to bring later in the evening, while also lighting up the crowd with his heavy beats that reverberated through the speakers into the audience.

Those things are really powerful. I felt the bass drop within every bone of my body. If you ever find yourself at another EDM concert, I

"...Denzel Curry never failed to keep up that hype throughout the entire night from the first verse of the first song of the setlist "Zone 3" to the last beats of some new songs off his re-release of his second album Imperial..."



recommend standing next to large 20 foot speakers the entire night if you want to be a little deaf the next morning. As soon as MORGANTICS finished, Denzel Curry made his presence known immediately as he came on stage.

Putting his U up (I still don't know what it stands for), and directing others to do the same, he commanded the crowd with this new yet familiar energy that made the place feel like a crazy Stage AE concert while still maintaining a distinct Carnegie Mellon vibe that felt comforting, invigorating, and dangerously thrill-seeking.

"Crazy," "dangerous," and "thrill-seeking" are a few choice words I'd use to describe the night. My friends and I, in the front, were on the unexpected receiving end of a lot of sweat, spit, and water that didn't come from a flipped bottle.

I had Playfair flashbacks, mingling with the crowd while we were crushed against the metal fence separating Denzel Curry from the audience, and I was second guessing its sustainability against 200 uber-hyped Carnegie Mellon students.

The poor girl next to me was clearly not used to the situation at hand and looked a little uncomfortable. But I wouldn't have traded my experience for anything else that night. The energy of the crowd was infectious and only made everyone more excited.

Denzel Curry pumped up the crowd and made sure they didn't get too rowdy, skirting the line between maintaining that balance while getting hyped himself. He also interacted with the crowd a lot, which I loved. He gave out a lot of sweaty high fives, got up in the faces of the crowd when he rapped, and it seemed like he wasn't afraid to just be himself and have a great time with himself, his DJ, and his audience. He'd let loose on the stage with his dance moves, and when he'd mess up the verse he wasn't ashamed to start over, giving us another show and somehow making him smile harder.

After a lot of deliberation, before his performance of his viral hit "Ultimate," Denzel Curry even brought a guy on stage who wanted to crowd surf, as if the night wasn't already crazy enough. A few people narrowly missed a shoe to the chin, and he was almost like a representation of what the night was like: a build-up of crazy, fun hype that refused to go down or take no for an answer.

And Denzel Curry never failed to keep up that hype throughout the entire night from the first verse of the first song of the setlist "Zone 3" to the last beats of some new songs off his re-release of his second album Imperial, making for another great Activities Board concert and an even greater performance.

### STACK'D SHADYSIDE



## 1/2 OFF SPECIALS

**MON:** \$.50 Wings

**TUE:** \$3 Stack'd Burgers

**WED:** \$3 Veggie Burgers  
(9pm-Midnight)

## \$6 YUENGLING PITCHERS

(Everyday)



Please Drink Responsibly

**Stack'd Shadyside**

728 Copeland Avenue (next to Starbucks)  
stackdpgh.com | facebook.com/stackdpgh



# Categorize Me

be whoever you want.

Julie Sanscartier | Comics Editor

Every Oct. 11 is recognized as National Coming Out Day, originally founded in 1988 to commemorate the March on Washington for Lesbian and Gay Rights. The day promotes a safe world in which the LGBTQ+ community can thrive with acceptance and love. In high school, we remembered the people who marched by having students of all class levels give speeches about their coming out stories, showing other kids that it was okay to be who you were. Holding with that, I wanted to share my own story.

When I was little, I had one singular idea of romance. Princesses got their princes, and lived happily ever after. I never even considered that there were other possibilities out there. I remember the day that worldview changed, almost like an electric shock to my brain. During a sleepover in middle school, while talking about our crushes, someone whispered, "Boys are gross. I like girls." We fell silent. How were we supposed to react?

The subject was dropped.

But then there was high school, where I learned words like gay, lesbian, bisexual, queer, and transgender. I learned that just because Sydney was on my girl's field hockey team in 8th grade didn't mean that when puberty hit she wouldn't realize that Elliot was a better name, and male pronouns were what *he* wanted.

And that was okay. I loved meeting all of these awesome people who knew EXACTLY who they were. Only, I had never had an AHA moment. For me, it was a slow realization. Maybe I wasn't as clear cut as I had originally thought. I had no idea where to put myself. I wanted to fit into a box. Any box, really. I felt like I needed a category so that I could fit in, so that I would make sense. So I could feel validated. But I didn't fit into any of them. I liked girls, I liked guys. I liked trans girls and guys. I liked people with kickass personalities.

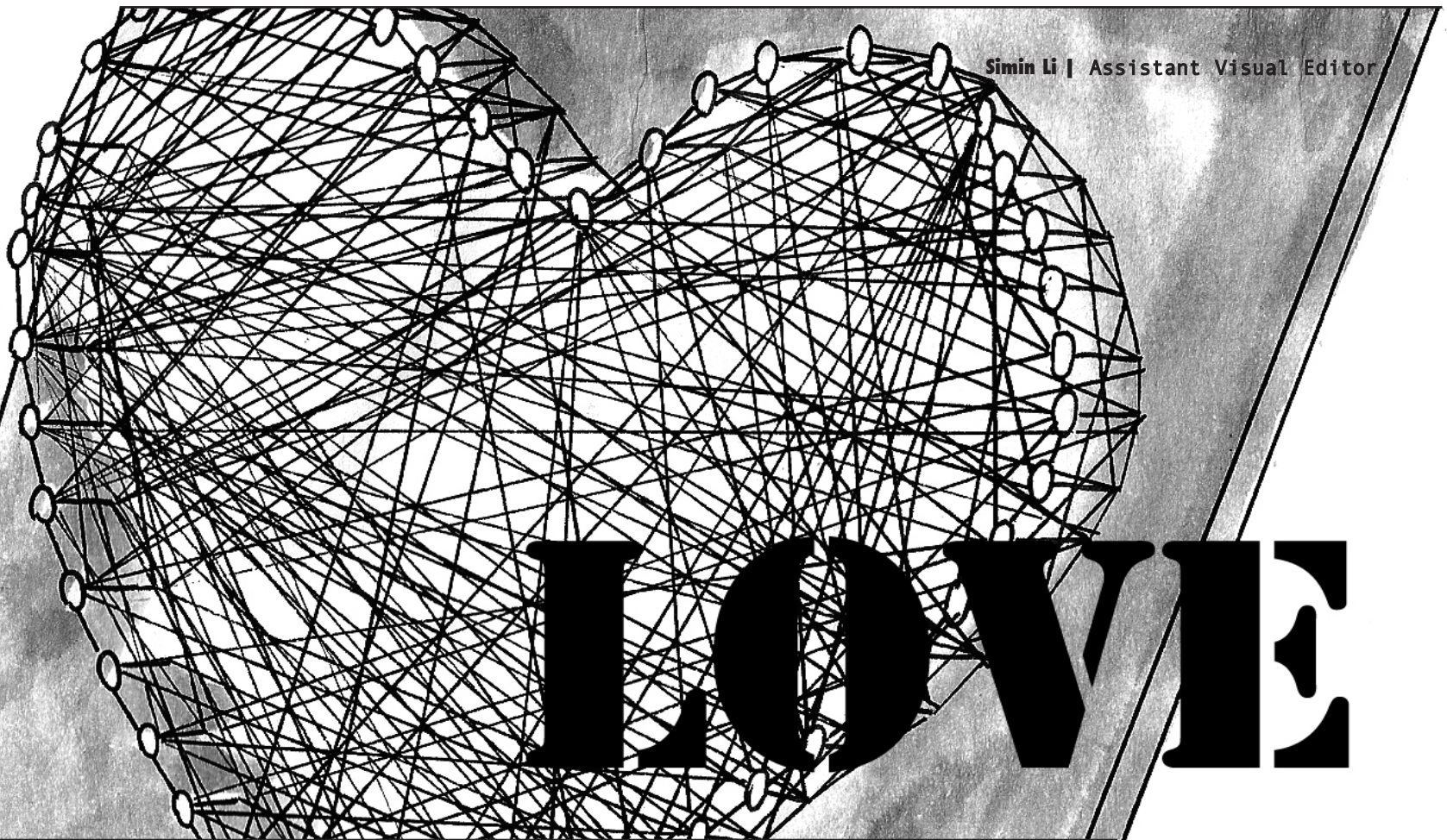
What I hadn't learned was that I could be all of those things at once.

It took me a long time to get to the point where I can comfortably call myself pansexual. I went through several categories before it. And every time I changed what I called myself, people would ask me things like, "Wait, aren't you gay?" or, "I thought you were bi?"

A lot of people don't realize that it's a long road. A long and confusing one. And that's ok, maybe they're perfectly happy with the category they've been given and never had to ask themselves these questions. Maybe they figured it out after only one category change. It took me longer than most. But I'm happy with my category now. In fact, it's the most anti-categoric category out there. It's me telling the world, "I'LL LIKE WHO I LIKE AND THAT'S IT!"

And that's it.

Simin Li | Assistant Visual Editor



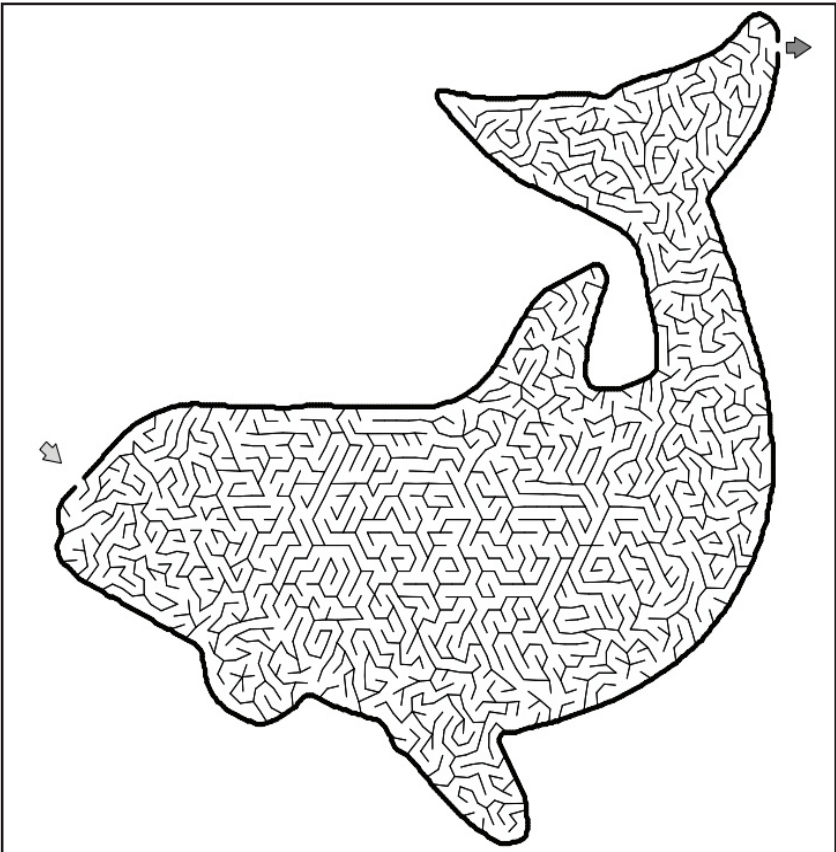


sudoku

		1						6
		6		5		8	7	
		3	9		6		5	1
			3	6				
7								5
				9	7			
2	1		7		5	6		
	9	8		1		2		
6						5		

sudoku courtesy of [www.krazydad.com](http://www.krazydad.com)

maze



maze courtesy of [www.krazydad.com](http://www.krazydad.com)

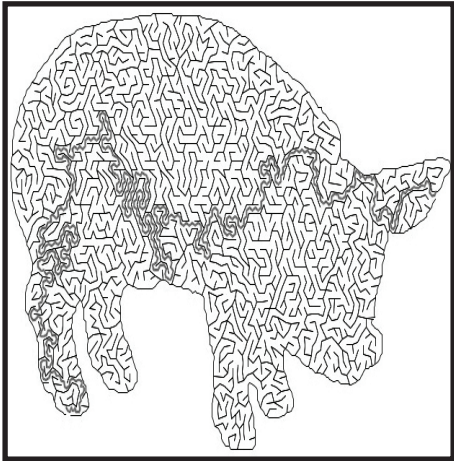
Solutions from Oct. 10

S	L	A	P	S		E	C	H	O		S	K	Y	S
L	I	L	L	E		E	L	E	V		C	R	O	C
I	N	T	E	R		R	A	R	E		A	I	D	A
M	A	I	N	T	A	I	N		R	O	L	L	E	R
S	A	N	E	S	T		E	T	E	S				
E	L	L	O		O	B	S	T	E	T	R	I	C	S
T	O	R	U	S		E	S	E			S	E	R	A
S	U	B	S	I	D	I	A	R	Y		S	A	R	A
M	E	T	H	A	N	E			A	N	T	A		
A	T	R	I	S	K		A	B	S	O	R	B	E	D
S	H	E	D			E	S	S	O		O	T	E	R
S	E	V	E			Y	E	A	R		G	E	N	I
E	R	I	S			S	E	N	T		E	D	E	N

crossword

6	2	4	3	8	7	5	9	1
1	3	9	4	5	6	8	2	7
7	5	8	1	9	2	4	3	6
4	9	6	8	1	3	7	5	2
2	8	3	7	6	5	1	4	9
5	1	7	9	2	4	3	6	8
9	4	1	2	3	8	6	7	5
3	6	2	5	7	1	9	8	4
8	7	5	6	4	9	2	1	3

sudoku

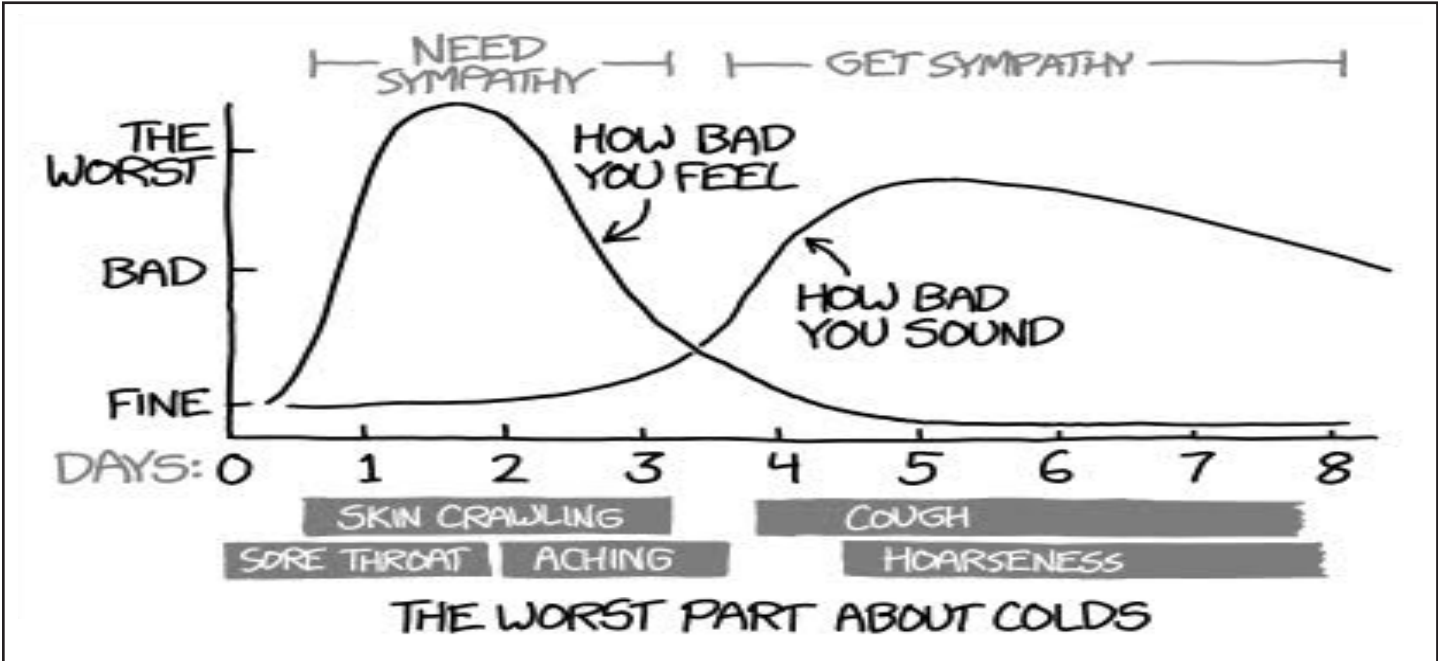


maze



Sick

by xkcd

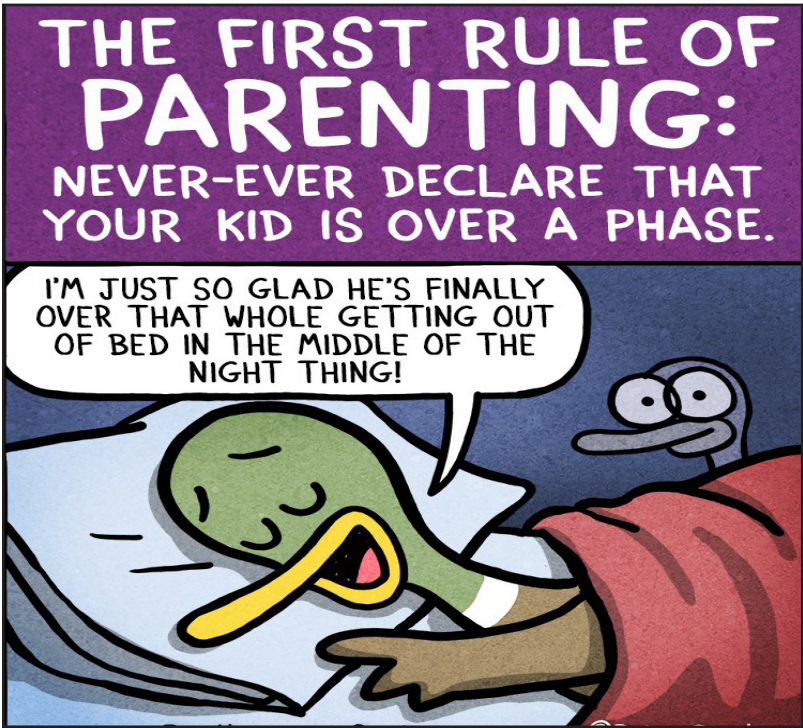


xkcd@gmail.com

xkcd.com

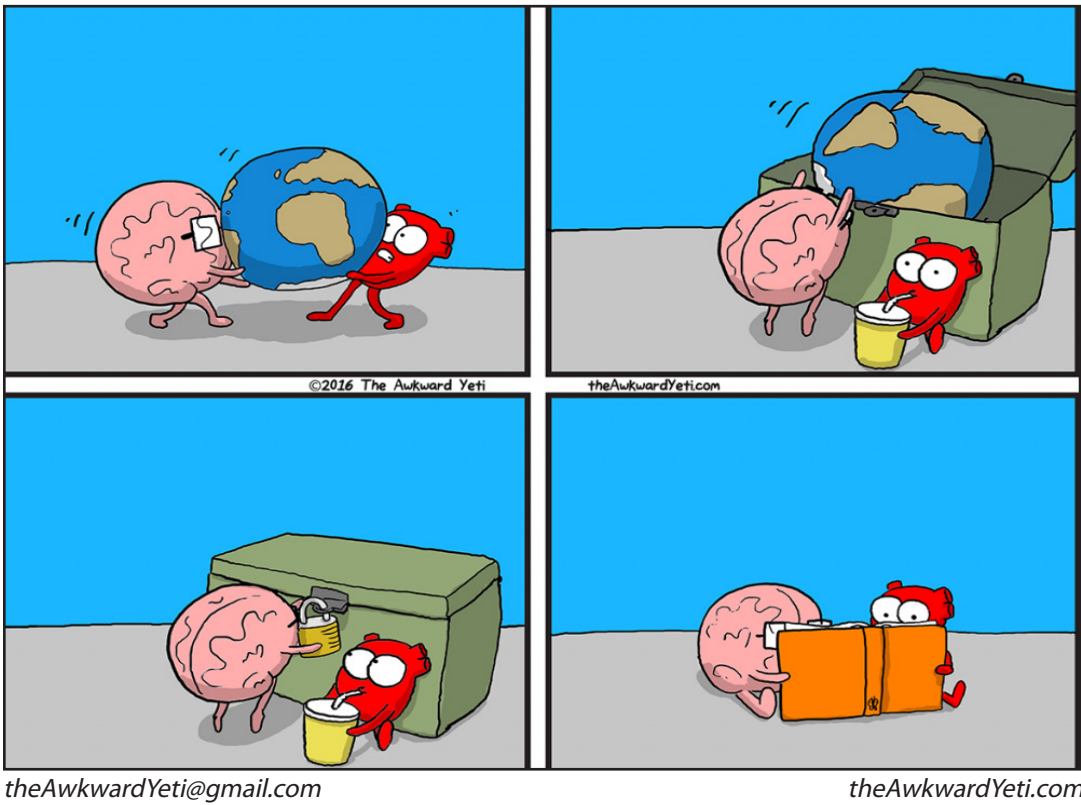
Rules of Parenting

by Brian Gordon



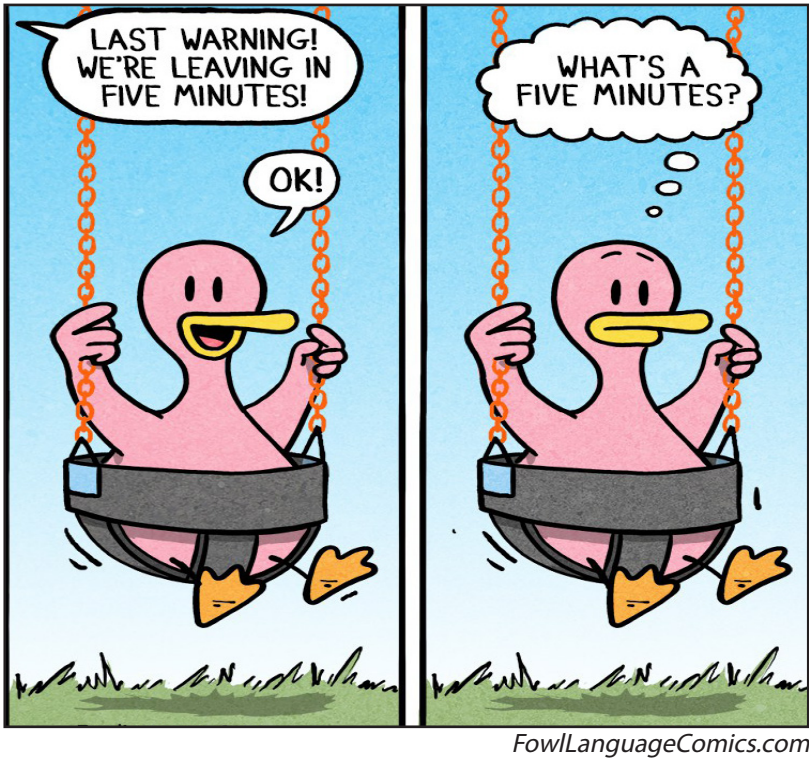
FowlLanguageComics.com





The Fraction Less  
Travelled  
by Nick Seluk

Five Minutes  
by Brian Gordon





horoscopes: quirks of the signs

Aries

march 21–apr. 19

You're the type of person to run away at 100 mph after you see a bug.

Taurus

apr. 20–may 20

You're mildly insecure about your decisions, but also hella cute 24/7.

Gemini

may 21–june 20

If a dog walks by, you drop whatever you're doing immediately. Talking to Tom Cruise? Doesn't matter. DOG.

Cancer

june 21–july 19

Wearing all black on a ninety degree day? CHECK.

Leo

jul. 20–aug. 21

You only go on dates because of the promise of food.

Virgo

aug. 22–sept. 20

Step right up for the best relationship advice you've ever had.

Libra

sept. 21–oct.19

You'd take a bullet for someone... but only if that someone is your cat.

Scorpio

oct. 20–nov. 20

You look angry, but are probably just hungry about 90 percent of the time.

Sagittarius

nov. 21–dec. 20

Are you talking to someone pretty? If so, get ready for all of the stupid things to start popping out of your mouth.

Capricorn

dec. 21–jan. 19

Wants a summer body, BUT FOOD.

Aquarius

jan. 20–feb. 20

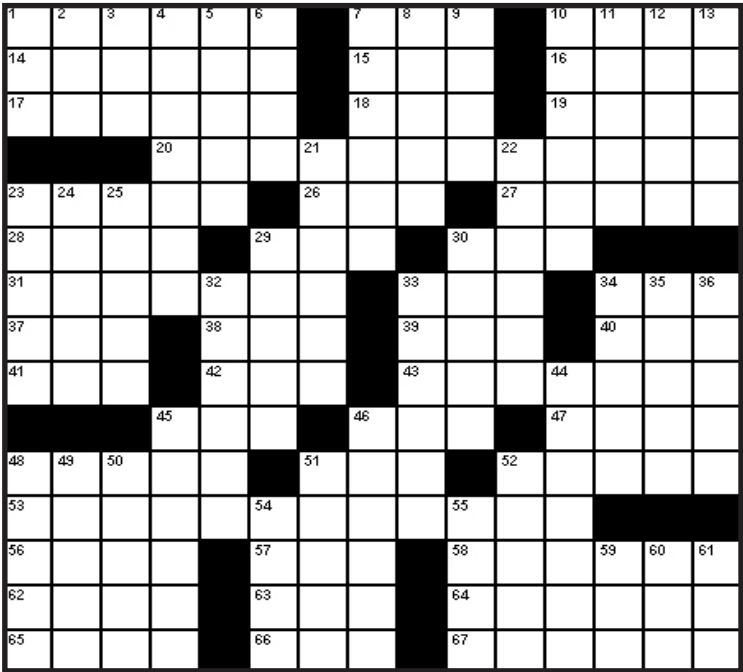
If you could turn into any animal it would probably be a sloth.

Pisces

feb. 21–march 20

Long day of doing nothing? Treat yo'self.

crossword



Crossword courtesy of FreeDailyCrosswords.com

across

- 1. Some mattresses
- 7. Hawaiian food
- 10. Crime boss
- 14. Author Leonard
- 15. Delivery room docs
- 16. In a frenzy
- 17. Showy pretense
- 18. Meadow
- 19. Granny
- 20. Capital of Utah
- 23. Does a Daffy Duck impression
- 26. That's gotta hurt!
- 27. Ways to the pins
- 28. About
- 29. Hindu title
- 30. Sawbuck
- 31. Toy racer
- 33. Dallas player, briefly
- 34. Paris possessive
- 37. Pro \_\_\_\_
- 38. "Rope-a-dope" boxer
- 39. Bass, e.g.
- 40. Legal science
- 41. RR stop
- 42. Actor Beatty
- 43. Graceful roundness
- 45. Male sheep
- 46. Suffix with ball
- 47. Cornerstone abbr.
- 48. Oohed and \_\_\_\_
- 51. To's partner
- 52. ... who lived in \_\_\_\_
- 53. Readiness
- 56. Sea eagle
- 57. Holiday start
- 58. Deceives
- 62. \_\_\_\_ avis
- 63. \_\_\_\_ Rosenkavalier
- 64. To bargain
- 65. Interview-wear
- 66. Grads-to-be
- 67. Main course

down

- 1. A collection of articles
- 2. Biblical high priest
- 3. LBJ's successor
- 4. Drunkard
- 5. Bailiwicks
- 6. Exchange for money
- 7. Hoi \_\_\_\_
- 8. Belief involving sorcery
- 9. Writer Dinesen
- 10. High-kicking dance
- 11. At full speed
- 12. Florence's \_\_\_\_ Vecchio
- 13. Green-lights
- 21. Oppressively hot
- 22. Cricket team
- 23. Wears well
- 24. Atoll unit
- 25. Mouthlike opening
- 29. "The Crucible" setting
- 30. Claw
- 32. Alberta's home
- 33. Dark brownish red color
- 34. Partly melted snow
- 35. Keep an \_\_\_\_ the ground
- 36. Celsius, for one
- 44. Final course
- 45. Say again
- 46. Commands
- 48. Copycats
- 49. Chilean pianist Claudio
- 50. Artist Matisse
- 51. Abnormal body temperature
- 52. Continental identity of a Chinese person
- 54. Cincinnati club
- 55. Dresden's river
- 59. Orch. section
- 60. Driving peg
- 61. Source of iron



# calendar

## ongoing

Tuesday 10.18.16 -  
Friday 10.23.16

Finding Neverland  
The Pittsburgh Cultural Trust  
7:30 p.m.–9 p.m.  
Benedum Center  
237 7th St, Pittsburgh, PA 15222  
Tickets starting at \$26 at:  
[www.trustarts.org/production/48829/finding-neverland](http://www.trustarts.org/production/48829/finding-neverland)

The story of Peter Pan that has taken Broadway by storm is finally coming to Pittsburgh. The story follows a pensive playwright's journey towards crafting a play that would mesmerize the audience of the London stage. The musical, based-off of the Oscar nominated film, explores themes of loss, love, and embracing one's inner child. With Tony-winner Diane Paulus' direction and critical acclaim ringing in from the likes of NPR and *TIME Magazine*, this is a show that all musical lovers need to see.

## tuesday

10.18.16

Witches of Western Pennsylvania: Occult History and Lore  
Carnegie Library of Pittsburgh  
12:15 p.m.–1:15 p.m.  
612 Smithfield St, Pittsburgh, PA 15222  
Contact: [downtown@carnegielibrary.org](mailto:downtown@carnegielibrary.org), 412.281.7141

In the spirit of Halloween, the Carnegie Library of Pittsburgh is hosting a lecture exploring witchcraft and folk magic with Thomas White. White is a local author and historian, who is both an adjunct professor in Duquesne University's history department as well as the university archivist and curator of special collections in the Gumberg Library. The lecture will work from the hex murders of the 1920s and 1930s and work up to the reasoning behind why witches still resonate so strongly in modern lore.

## thursday

10.18.16

Third Thursday: EDEN, a Celebration of Hélio Oiticica  
Carnegie Museum of Art  
8 p.m.–11 p.m.  
4400 Forbes Avenue, Pittsburgh, PA 15213  
Tickets at \$5 for students, \$8 for members, \$10 general admission at:  
[tickets.carnegiemellon.org/cmoa/CMASE\\_CMACULTCLB\\_ATHTHR1020](http://tickets.carnegiemellon.org/cmoa/CMASE_CMACULTCLB_ATHTHR1020)

Come immerse yourself in the captivating work of Hélio Oiticica, with interactive exhibits of the Brazilian artist's striking work. This event is part of the Third Thursday series, hosted by the Carnegie Museum of Art, where the galleries are kept open later than usual and packed with music, food and a buzzing atmosphere.

## friday

10.21.16

Louis C.K.  
8 p.m.  
Petersen Events Center, Pittsburgh, PA  
Tickets starting at \$50 at:  
[www.ticketmaster.com/louis-ck-pittsburgh-pennsylvania-10-21-2016/event/160051167F781082](http://www.ticketmaster.com/louis-ck-pittsburgh-pennsylvania-10-21-2016/event/160051167F781082)

Multi-award winning comedian, Louis C.K. is currently on the East Coast leg of his fall tour, and is bringing his talents to the Petersen Events Center this Friday. C.K. is well-known for his roles in *Louie*, *Lucky Louie* and most recently as the voice of Max in *The Secret Life of Pets*. Tickets are selling out fast, so be sure to order yours today!

## saturday

10.22.16

Booktober Fest  
Amazing Books and Records  
8 p.m.–11 p.m.  
2030 Murray Ave, Pittsburgh, PA 15217-2104, United States  
Admission: Free

Amazing Books & Records is giving booklovers from all over Pittsburgh an opportunity to mingle with one another and enjoy an evening of literary banter. Come alone, or bring a friend over for some free refreshments, great music, and a range of incredible literature to go through and enjoy.

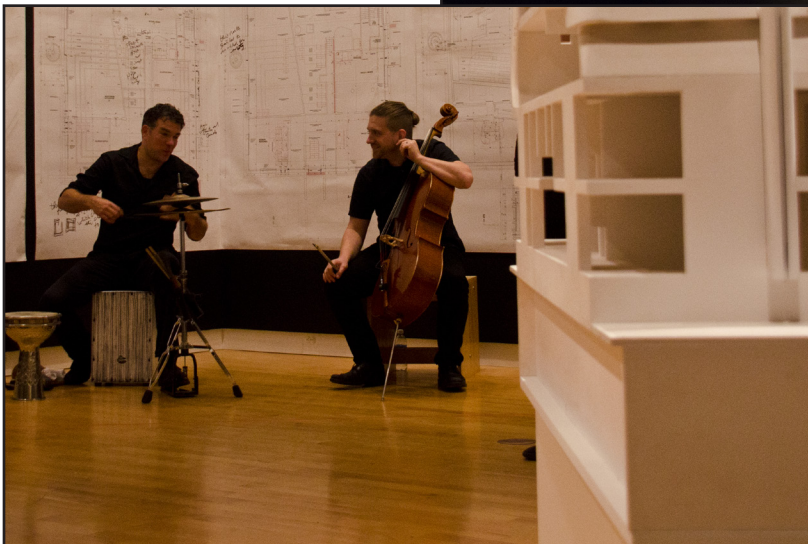
Haunted Museum: Year of the Vampire  
6 p.m.–10 p.m.  
Carnegie Museum of National History  
4400 Forbes Ave, Pittsburgh, Pennsylvania 15213  
Tickets: \$13.50 for members, \$15 general admission at  
[afterdark.carnegiemnh.org](http://afterdark.carnegiemnh.org), \$20 at the door  
Age Restriction: 21+

The Carnegie Museum of National History is back with the next edition of their After Dark event series. This year's After Dark will include the usual live music, bars, and unique programming catered towards the night's theme: Year of the Vampire. Enjoy an evening of vampire-themed drinks, exhibitions, and ghoulishly vibrant music from DJ Bill Jakub of Pittsburgh Vibes Unlimited. Costumes are encouraged, and ID's are required.



# some assembly required

Attack Theatre visited the Miller Gallery to transform the abstract into the emotional through contemporary dance. Their performance engaged viewers, and worked towards evoking emotions and memories. The audience themselves participated in the interactive session to assign meaning to the various pieces that were on display.



Theodore Teichman | Visual Editor

