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CMU launches global brain initiative



Abhinav Gautam/Staff Photographer

University President Subra Suresh spoke about Carnegie Mellon’s plan to work across disciplines and across the world to better understand the human brain.

BRADEN KELNER
Editor-in-Chief

Carnegie Mellon is looking to find out how the brain affects human behavior through its latest initiative, BrainHub. On Aug. 26, the university announced the launch of BrainHub during a discussion with faculty and research partners. The university stated in a press release that it will work with a variety of home and international partners to create tools to study how the brain and human behavior are linked. The initiative aims to bring insight into a variety of areas related to the brain, including cognition, learning and perception, and brain disorders like Parkinson’s disease, according to the release. “As an initiative, [BrainHub] seeks to link people who

are connected with different parts of campus who may or may not in some cases have been previously engaged in research related to neuroscience, brain science — to try and bring their expertise to bear on questions that are relevant to brain function,” said Nathan Urban, interim provost and Dr. Frederick A. Schwertz distinguished professor of life sciences. For example, a person interested in engineering may be applying a data analysis process in an electrical engineering context, but may be able to apply that process to answer questions about the brain, Urban said. Key first steps of the initiative will be to develop better tools for recording neuron activity and properties, as well as computational tools and

approaches for better analyzing and understanding the link between what the brain is doing at a specific time as it yields various behaviors, according to the release. “The belief is that there are people at Carnegie Mellon who have developed these kinds of technologies in one application area, and we want to understand how they can be leveraged in another application area,” Urban said. As part of the initiative, Carnegie Mellon said university deans plan to recruit 10 or more new faculty members specializing in the brain sciences in various departments and “establish new sources of ongoing support for graduate students and postdoctoral fellows,” according to the release. To jumpstart the new ini-

tiative, Carnegie Mellon has secured \$75 million of initial commitments over the next five years from various funders, including the Hillman Foundation, RK Mellon Foundation, Dietrich Foundation, and Kris Gopalakrishnan, the co-founder of business consulting company Infosys, among others. The National Institutes of Health and the National Science Foundation also represent a large portion of the funding, according to Urban. Notable partnerships for the BrainHub initiative include Sun Yat-sen University in Guangzhou, China for its work with Alzheimer’s and autism, the University of Warwick in Coventry, England for its specialty in digital health,

See **BRAIN**, A3

Architects chosen for Tepper quadrangle

BRENT HEARD
Senior Staffwriter

Carnegie Mellon announced last Wednesday that the university has selected an architectural firm to design the gateway building for the new David A. Tepper Quadrangle. The Santa Monica-based firm Moore Ruble Yudell Architects & Planners have been commissioned to design the building, part of a large expansion of campus. The building was described in a university press release as being 295 thousand square feet and located on a 4.5 acre plot on Forbes Avenue. Robert Dammon, dean of

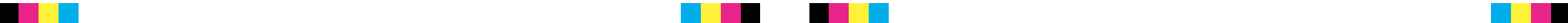
the Tepper School of Business, described the building as one which “will house not just the Tepper school, but a number of university-wide activities,” explaining that, “the idea is to try and provide an environment that draws faculty and students in from all across campus” for both social and intellectual connections. Dammon emphasized the presence of “collaborative spaces” for students, and said that this building and the anticipated four or five additional buildings planned for the Tepper Quadrangle are “going to promote innovation and entrepreneurship at Carnegie Mellon.”

Bob Reppe, Director of Design for Carnegie Mellon, framed the Tepper Quadrangle as being part of the university’s overall expansion. “The idea is as we grow campus across Forbes, we will be creating a gateway,” Reppe said. He added that Forbes is to be “the main street of campus,” and the new building will help with “moving Tepper from the edge of campus to the center of campus.” The Tepper Quadrangle will be where the Morewood parking lot is currently located, and is being funded by a \$67 million donation from David Tepper’s charitable organization, \$201 million of

university money, and various other smaller donations. At the time of the donation, Reppe said in a university press release, “CMU has a long history of providing the world with innovative thinkers and the establishment of a true hub for entrepreneurship will help create the next generation of global leaders.” Dammon recalled that the Quadrangle is “something that the Tepper school has been trying to do for a number of years now.” Talks began under previous dean Ken Dunn around 2007, according to Dammon. “Finally we’re able to put together the major sources of support,” Dammon explained, referencing the donation from David Tepper, support from the university, and fundraising efforts. The gateway building will contain an entrepreneurship center, a Technology Enhanced Learning facility from the Eberly Center, a new dining space, fitness center, a 600-seat auditorium — making it the largest on campus — as well as a university welcome center. The building will also officially house the Simon Initiative. “President Suresh ... believes that we need a welcome center located prominently on Forbes Ave,” Repp said. Dammon said that the building “will allow us to increase the size of our undergraduate business program,” from the current entering freshman class of 85 to around 140 students by 2018. Many have raised concerns about parking availability in



The gateway building in the Tepper Quadrangle will act as a new front-facing entrance on Forbes Ave.



See **TEPPER**, A3

Chipotle coming soon to Forbes

BRIAN TRIMBOLI
News Editor

Although many students grieved at the loss of the Panther Hollow Inn, a local bar, over the summer, they may now have something else to look forward to: Winthorpe Valentine, LP, which bought 4611 Forbes Ave. after it was sold last year, has filed plans with the Department of City Planning to put a Chipotle Mexican Grill in the former bar’s location. Chipotle Mexican Grill, which last year celebrated its 25-year anniversary, serves a variety of Mexican-inspired foods, including tacos and burritos. It was announced in May 2013 that Panther Hollow Inn, known by most students as PHI, would close after the end of the spring 2014 semester. Winthorpe Valentine, LP bought PHI from former owner Eugene DePasquale in June 2014 for \$850,000; the bar closed for the last time in the early hours of June 1.

When it was announced that PHI was closing last year, The Tartan reported, students mourned the loss of what then-Student Body President Will Weiner (DC ‘13) called “one of the few unique CMU hangout spots.” Within days, students had garnered 750 signatures on a *change.org* petition to keep PHI open. Some students, however, welcome the change.

“I’m all for it,” said Jamie Rupert, a senior decision science major. “The only thing is that PHI was small. I hope they’re planning to add more space.”

According to the filed plans, the restaurant will open for business on Jan. 1, 2015, after a period of construction that began over a month ago, on Aug. 1. The plans include a new second floor area, part of a 725-square-foot addition to the space, and various renovations to the walls, floor, and bathroom of the building.

Other students are more ambivalent. “There’s already a Chipotle 30 seconds from my house, so it doesn’t really matter for me,” said Brian Lee, a junior economics and statistics major. Vira Shao, a junior Chinese studies and psychology double major, had her doubts about the upcoming Chipotle. “I’m happy I don’t have to walk all the way down to Chipotle, but I’m pretty ambivalent,” Shao said. “Here’s one thing: I think that from a business standpoint, they’re making a very poor choice. Because yes, that Chipotle will recoup a lot of money really, really quickly, but alcohol sells more. And they’re going to have to renovate the hell out of that place because it’s a franchise. You can’t just have Chipotle food in a PHI-esque bar; it doesn’t work like that.”

According to the filed plans, the restaurant will open for business on Jan. 1, 2015 after a period of construction...

Jeremy Applebaum, a junior chemistry major, although he said he, too, was ambivalent on the issue, hesitated to embrace the new Chipotle. “It’s just going to encourage CMU students to be really lazy and never leave the area. At least encourage them to walk five minutes down Forbes to get Chipotle,” Applebaum said. The Chipotle at 4611 Forbes will join several other locations, including one in Oakland at 3619 Forbes Ave., another in East Liberty at 5986 Centre Ave., and one in Shadyside at 4800 Baum Blvd.



Abhinav Gautam/Staff Photographer

The former Panther Hollow Inn, at 4611 Forbes Ave., is scheduled to be replaced by a Chipotle Mexican Grill on Jan. 1.



FEATURE PHOTO

Students get involved at Activities Fair



The fall Activities Fair took place last Wednesday on the College of Fine Arts lawn. Students walked through rows of student organizations on the sunny afternoon and signed up for the clubs that interested them.

Abhinav Gautam/Staff Photographer

Campus Crime & Incident Reports

Underage Drinking

Aug. 29, 2014

University Police were summoned to Roselawn Terrace in response to a noise complaint. When they arrived, officers confiscated and disposed of alcohol and cited 14 Carnegie Mellon students for underage drinking. Officers also cited two more students for furnishing alcohol to minors.

Underage Drinking

Aug. 30, 2014

A Carnegie Mellon security officer on patrol summoned University Police and CMU EMS after finding an intoxicated student on Margaret Morrison Street. The student was given medical attention and cited for underage drinking.

Harassment

Aug. 30, 2014

After a man approached her on Forbes Avenue and asked for her phone number, a hesitant female student instead provided her email address. Later, the student received a lewd image of the nude male, and subsequently filed a report with University Police.

Public Drunkenness, Underage Drinking

Aug. 30, 2014

A University Police officer on patrol found two intoxicated individuals on Forbes Avenue, and summoned additional officers and CMU EMS. Both individuals were identified as Duquesne University students, at which point city medics were summoned to the

scene to assist. Officers issued a citation for underage drinking and public drunkenness in response to the incident.

Camera Theft

Sept. 1, 2014

University Police were summoned to the fourth floor of the College of Fine Arts after a student reported that her camera was stolen between Aug. 29 and Sept. 1. The victim had left the \$1,400 Canon digital camera inside a bag under the desk of her studio on the fourth floor. This investigation is ongoing.

Defiant Trespass

Sept. 2, 2014

A University Police officer conducting a foot patrol of the Jared L. Cohon Univer-

sity Center found a juvenile non-Carnegie Mellon affiliate sleeping in the basement. The male was identified as a Brashear High School student with truancy issues. Police called the high school student's parents and issued him a defiant trespass notice, which prohibits him from returning to Carnegie Mellon owned or leased property.

Bicycle Theft

Sept. 4, 2014

A Carnegie Mellon student filed a report with University Police after his bicycle was stolen between noon and 2 p.m. outside of the Gates-Hillman Complex. Video footage of the area has given police a visual description of the suspect. This investigation is ongoing.

NEWS IN BRIEF

President Suresh announces leadership searches

President Subra Suresh announced to the campus community via email on Friday that the university is launching a search for provost and a marketing and communications vice president.

Currently, Nathan Urban, Dr. Frederick A. Schwartz distinguished professor of life sciences, holds the position of interim provost.

The provost is the university's chief academic officer that reports directly to the president.

The provost plays an important role in developing cross-departmental collaboration, linking the university's campuses, and interfacing with global partners, according to the email.

A search advisory committee was created — led by Farnam Jahanian, vice president for research, and Michael Murphy, vice president for campus affairs — with a goal of making the final appointment in the spring and a start date for the new provost of July 1, 2015.

President Suresh also said that Thomas Mattia, a senior executive at public relations firm Edelman, will serve as interim marketing and communications vice president until the search is complete. Based upon recommendations during President Suresh's listening tours, Carnegie Mellon worked with Edelman for the company to provide recommendations to the university for strengthening its brand and communications, according to the email. Edelman recommended that the university create this new position, which many other research universities already have.

The vice president will oversee all marketing and communications at Carnegie Mellon, a function that is currently run by the university's Advancement division, according to the email.

President Suresh said moving the function will allow the Advancement division to focus more on "fundraising and global alumni engagement."

Global learning conference meets at CMU

The Global Learning Council met face-to-face for the first time on Sept. 4–5 at Carnegie Mellon and the University of Pittsburgh.

The Global Learning Council, which is chaired by Carnegie Mellon President Subra Suresh, was announced in tandem with the Simon Initiative in November 2013 to coordinate stakeholders across various areas such as education and business to promote learning through technology, according to Carnegie Mellon's homepage.

During its first meeting, the council identified two areas of action for the council to improve technology-based learning, posted to the council's website.

The first action item includes creating criteria and evidence for best learning practices in the "design of learning environments," "continuous improvement,"


and "adoption of new methods and technologies," according to the post. The action item responds to a problem identified by the council: Educators do not have trusted sources to promote learning through technology.

For its second action item, the council aims to create a way to share "learning data" to combat the fact that organizations gather large amounts of data for sharing purposes, but do not have a standard way for sharing it.


The council plans to present a draft of a document detailing these action items in the spring to the Association of American Universities and the Association of Public and Land Grant Universities, according to the council's website.

Compiled by
BRADEN KELNER


WEATHER



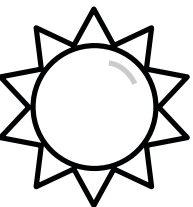
TUESDAY
High / Low
83 / 61




WEDNESDAY
High / Low
86 / 71




THURSDAY
High / Low
77 / 56



FRIDAY
High / Low
74 / 51



SATURDAY
High / Low
65 / 47



SUNDAY
High / Low
49 / 49

Source: www.weather.com

Corrections & Clarifications

The article "Dining offers extended hours, healthier options" in the Aug. 25 edition of The Tartan originally misstated the hours of the Exchange. The Exchange is open from 8 a.m.–8:30 p.m. Monday through Thursday, from 8 a.m.–6:00 p.m. on Friday, and from 9:30 a.m.–2:30 p.m. on Saturday.

STUDENT SENATE MEETING MINUTES

Presentation of the President's Cabinet

Student Body President and senior electrical and computer engineering and business administration double major Ian Glasner presented his cabinet to Student Senate. Senior information systems major Andrew Schwartz is constitutional advisor; junior public policy and management major JR Marshall is chief of staff; se-

nior communication design major Sam Ahmed is public relations secretary; and junior information systems major Jake Correa is chief technology officer. Senators are not eligible to be on the cabinet.

Vacancy elections: Dietrich College

There was one Senate vacancy in the Dietrich College of Humanities and Social Sciences. Srishti Jain, a sophomore economics and statistics major, and junior statistics and decision science double major Landon He, both gave speeches and ran for the position. Landon He was elected to the position.

Vacancy elections: Carnegie Institute of Technology

Elena Karras, senior chemical engineering and biomedical engineering double major, ran for the Senate vacancy in the College of Engineering. Karras was elected to the position.

Finance Committee Chair elections

Both newly elected senators, Karras and He, ran for Finance Committee Chair. The Finance Committee Chair position was vacant after fourth-year architecture major Travis Rozich resigned, as he is studying in Sweden this semester. Landon He was elected to the position of Finance Committee Chair.

Sergeant at Arms elections

The Senate body voted to table Sergeant at Arms elections to the next General Body Meeting. The Sergeant at Arms is a Senator or member-at-large who performs administrative and logistical duties to prepare for each week's General Body Meeting.

Compiled by
BRIAN TRIMBOLI

Moore Rubele Yudell selected to design Tepper Quadrangle

TEPPER, from A1

light of the fact that the Tepper Quadrangle will be built over the current Morewood Gardens parking lot. Ralph Horgan, associate vice president for Campus Design & Facility Development, however, assured, “there will be 250-space parking structure under the building.”

Moore Ruble Yudell describes themselves as an office of sixty people, whose past projects include buildings for Dartmouth University and the University of California Berkeley.

Buzz Yudell, partner at Moore Ruble Yudell, said that designing the new Tepper building is “significantly different” from other university projects he’s worked on. “You don’t often find campuses when they’re at this pivotal moment,” Yudell said. “From a planning view, it’s not just about a single building.”

According to Horgan, Moore Ruble Yudell was selected because of the firm’s design expertise and its “specific experience with respect to cutting-edge business institutes.” Horgan added that the group was “very impressive in their organization.”

In addition to their core team, Moore Ruble Yudell is collaborating with an assembled team of consultants for this project, ranging from engineering firms to landscaping designers.

Dammon explained, “There was a level of comfort with them that we didn’t have entirely with the other architects,” saying, “to be honest with you, they were the perfect choice.”

The building will be LEED Gold certified, and is expected to be completed in fall 2018. Horgan remarked that “these buildings take a long time,” and that utilities will be laid next May. Construction on the building’s foundation will begin the following May.

Reppe indicated that there will be “outreach sessions in preparation for our permitting and construction process.”

The new building is still in the design phase, but Yudell emphasized that Carnegie Mellon’s aspirations for the Tepper School “are fundamental to the planning.”

BrainHub to bring together brain researchers, universities

BRAIN, from A1

Oxford University’s International Brain Mechanics and Trauma Lab and the Indian Institute of Science, which has a brain institute initiative of its own, according to the Carnegie Mellon release. Carnegie Mellon will also work with long-time collaborators at the University of Pittsburgh.

In 2011, Carnegie Mellon partnered with Sun-Yat-sen University to create a joint graduate and engineering program, the Joint Institute of Engineering in China. Carnegie Mellon and Sun Yat-sen celebrated the launch of the program in late 2012. In July, Carnegie Mellon signed a memorandum of understanding with the University of Warwick for a \$10 million collaboration in data collection, analysis, and processing.

Urban said the short-term goals of the partnerships are to identify common areas of interest to develop further.

“There was a strong desire to have mechanisms for establishing these kinds of [connections among universities] and creating these kinds of joint projects, and we want to let the faculty who are engaged in this, drive that in terms of what directions they take,” Urban said.

Carnegie Mellon’s move to create new tools and methods to further study the brain is part of a larger trend of university research regarding the brain. In April 2013, President Barack Obama unveiled the Brain Research through Advancing Innovative Neurotechnologies (BRAIN) Initiative, a government initiative to better understand the mind and uncover new ways to cure, prevent, and treat brain disorders. As part of the initiative, the government said it would provide approximately \$100 million in investments through various government organizations for scientists to acquire needed tools for research.

In response to the initiative, many universities have begun their own brain research initiatives.

For example, the University of California, San Diego in May 2013 introduced the Center for Brain Activity Mapping to develop new tools for recording the activities of neurons in the brain and to conduct brain-mapping experiments.

In June, the state of California provided \$2 million in funding from its \$156 million 2014-15 state budget to jumpstart the university’s research in brain-mapping. The funding was California’s first allocation from a statewide research grant program known as the California Blueprint for Research to Advance Innovations in Neuroscience (Cal-BRAIN). Cal-BRAIN is a direct response by the state of California to President Obama’s initiative.

Urban said that Carnegie Mellon’s BrainHub initiative is unique from other university initiatives because of Carnegie Mellon’s international partnerships and its focus on drawing upon people in various disciplines.

“There’s a lot of focus for us in trying to bring in people who are from, say, computer science or engineering into the fold. We really think ... there’s a lot of opportunity for pushing the field forward rapidly by bringing new approaches, new technologies, [and] new tools to bear, Urban said.

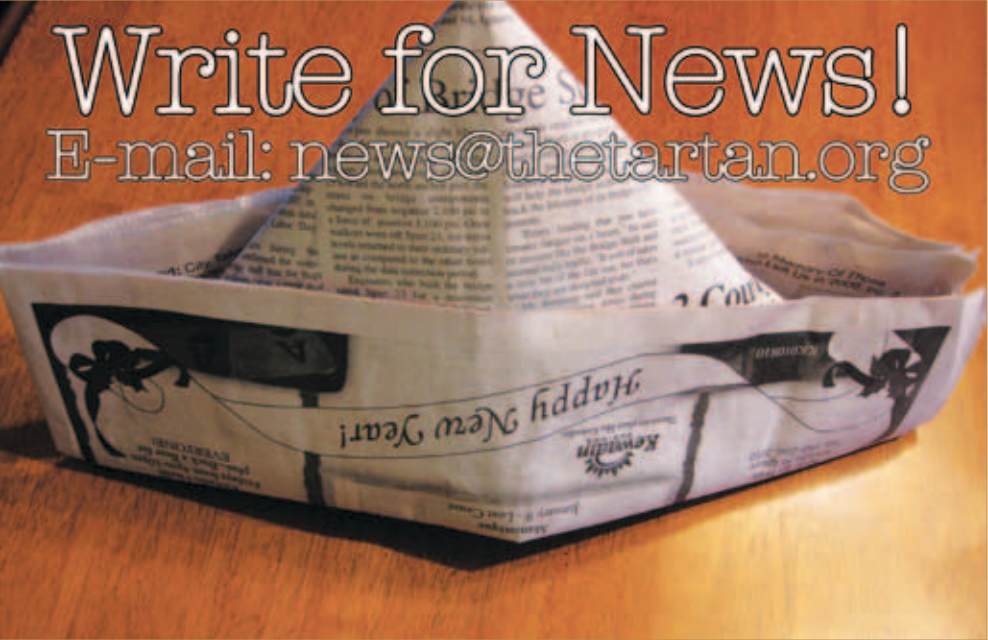


Abhinav Gautam/Staff Photographer

Tom Insel, Director of the National Institute of Mental Health, spoke about BrainHub, Carnegie Mellon’s newly announced brain research initiative.



Kelsey Thompson/Staff Artist





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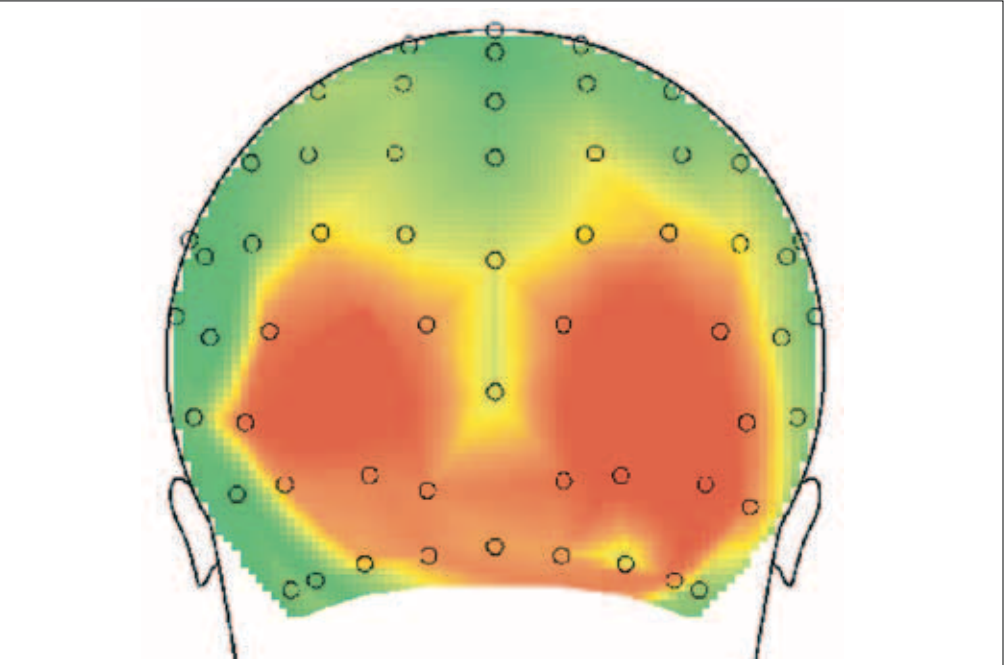
Science & Technology

Neurons respond strongly to stream of familiar images



In a CNBC study, test subjects were trained to look at these images until they became familiar.

Courtesy of Carl Olson



The locations on the back of the scalp where visual areas gave strong electrical responses to familiar images.

Courtesy of Carl Olson

CLAIRE GIANAKAS
Staffwriter

As the study of neuroscience becomes increasingly prevalent in modern society, we are just beginning to understand the many complexities of the brain, namely its highly adaptable nature. Researchers from the Center for the Neural Basis of Cognition (CNBC), a joint Carnegie Mellon and University of Pittsburgh project, have explored this aspect of the brain through their research involving neuron response to rapid sequences of images.

Carl Olson, a professor of biological sciences at Carnegie Mellon and a member of the CNBC; Travis Meyer, a research associate of neuroscience at the CNBC; and Christopher Walker and Raymond Cho of the department of psychiatry at the University of Pittsburgh examined how neurons react to familiar and unfamiliar images presented in rapid succession.

The researchers showed animal and human subjects rapid sequences of familiar and unfamiliar images and monitored the electrical responses of various individual neurons in the inferotemporal cortex, a section of the brain that is crucial for recognizing objects, to determine whether the inferotemporal cortex neurons followed the rapidly changing images better when the images were familiar or unfamiliar.

The researchers ultimately found that subjects' neurons responded much more strongly and selectively when shown

familiar images in rapid succession than when shown unfamiliar images in rapid succession. The research also showed that the strong response for familiar images was more prevalent in inhibitory neurons — neurons that calm the brain and restore balance — than in excitatory neurons — neurons that stimulate the brain. “You wouldn’t expect there to be such deep changes in the brain from simply making things familiar,” said Olson in a university press release. “We think this may be a mechanism the brain uses to track a rapidly changing visual environment.”

Subjects’ neurons responded more strongly and selectively when shown familiar images in rapid succession.

In previous research, it was established that a subject’s neurons respond more strongly when shown a single unfamiliar image than when shown a single familiar image. The CNBC study, however, was focused on rapid series of images — not a singular image — which explains the difference in the results.

The concept that repeated viewing of an image causes neurons to respond to it in a weaker manner is called the familiarity effect. In the CNBC

study, researchers noted that this effect could be beneficial, not detrimental. The researchers explained that familiarization occurs in the form of a truncation. In other words, the neuron response is not weaker overall; it is simply truncated early for familiar images. The study suggests that this truncation could make the neuron response more selective and could allow the neurons to be more prepared to respond to ensuing images.

Overall, the researchers concluded that image familiarization improved the dynamics of the neuron response in the inferotemporal cortex. They suggest that each image triggers a specific subset of neurons that respond to certain aspects of that image and that the enhanced response for familiar images could be part of the brain’s mechanism for monitoring visual environments that are swiftly changing. They also note that the presence of an enhanced response in excitatory neurons is important because it suggests that the enhanced effect could be transmitted from the inferotemporal cortex to other areas of the brain.

The research was funded by the National Institutes of Health’s National Eye Institute and the National Institute of Mental Health, as well as the Pennsylvania Department of Health’s Commonwealth Universal Research Enhancement Program. The study, titled “Image familiarization sharpens response dynamics of neurons in inferotemporal cortex,” is published online by *Nature Neuroscience*.

PUGWASH COLUMN

ZMapp distribution is debated



SKYE TOOR

Special to The Tartan

The recent Ebola outbreak was as much of a shock to medicine as it was to political discussion. ZMapp, the highly experimental drug developed by Mapp Biopharmaceutical Inc. and tested in monkeys, is the only known combatant to the disease. According to an article in *USA Today*, 100 percent of monkeys in a Canadian study were cured of Ebola after being treated with ZMapp.

However, just because we have a drug doesn’t mean we have a definite cure. In total, seven doses of ZMapp have been given to humans; out of these seven, two did not survive — a Liberian doctor and a Spanish priest. In hindsight, ZMapp is not a fully viable cure — or even treatment — for Ebola. Although it worked in monkeys, ZMapp alone cannot sustain humans for certain.

Without having had any human trials, was it right to give that drug out? What does this say about American-funded medication? Is it our responsibility to distribute what

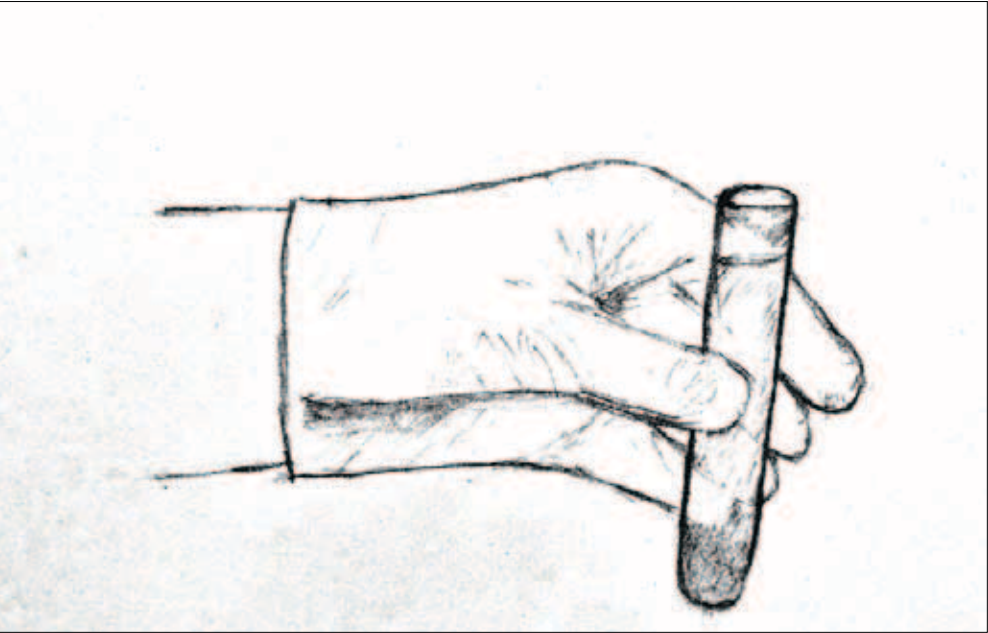
we know or save our own? Here’s what a few Carnegie Mellon students think.

When we were first learning about AIDS, or GRID (Gay-Related Immune Deficiency, later Gay Residual Immune Disorder) as it was called at the time, a group of scientists went to Africa to collect data and perform a few experiments. The experiments were unsuccessful, but the data that was brought back helped form the next 10 years of AIDS research. Is obtaining useful data worth risking the health of others? If a disease is fatal, does testing create any risk at all?

There are three options: We can give this drug to Americans and collect data, we can give this drug to west Africans and collect data, or we can do nothing. The social implications of each option are enormous. If the drug works and we try to keep it in the United States, the headlines could read “Western life comes first: Ebola drug to be kept in U.S.,” and both U.S.-based drug companies and the United States itself lose credibility as a foreign power. If we keep it in the United States but the drug doesn’t work, nothing happens. If the drug works and we take it to Africa, the press is good —

but if the drug doesn’t work, and we take it to Africa, the headlines could read “Africa as U.S. guinea pig: U.S. pharma to start human trials on Africans,” and the U.S. not only loses credibility, but is no longer welcome in many foreign markets. Ultimately, though, if we do nothing in the event of an outbreak, the implications are more than just social. A public distrust of the Food and Drug Administration (FDA) is less of a concern than any idea that science no longer deserves funding. A world where scientists fail to produce a perfect solution is much better than a world where scientists can no longer receive sufficient funding because businesses, venturists, and agencies think that even when the scientific community is funded, it is too insular to share its findings. The impact of doing nothing is actively harmful to the future of science funding: No action now could leave the possibility of action in the future at risk.

Student Pugwash is a non-advocacy, educational organization that discusses the implications of science. This article is a summary of last week’s discussion on Ebola and experimental drugs.



Alison Chiu/Staff Artist

Dimensionality reduction helps neuroscience studies

ROHAN VARMA

Assistant SciTech Editor

Oftentimes, analyzing a large system by only looking at its individual parts is a hopeless task.

For example, in team sports, individual players might not seem to be acting rationally in the moment; however, over time, the actions make a lot more sense in the context of the general strategy of the team. With this approach in mind, Byron M. Yu, assistant professor of electrical and computer engineering, and John P. Cunningham, a professor at Columbia University, have developed a new strategy to utilize big data techniques to help better understand the complex neuronal network in our brains.

In a University press release, Yu said, “One of the central tenets of neuroscience is that large numbers of neurons work together to give rise to brain function. However, most standard analytical methods are appropriate for analyzing only one or two neurons at a time. To understand how large numbers of neurons interact, advanced statistical methods, such as dimensionality reduction, are needed to interpret these large-scale neural recordings.”

Current neuroscience research methods are trying to locate and analyze significant neurons and try and gain insight into the entire systems behavior through these individuals.

However, oftentimes there is a lot of noise in the data because the neurons display lots of behavior that is hard to understand within the scope of one single neuron.

Unfortunately, solving this problem is not as easy as simply looking at more neurons at a time.

By scaling the investigation from a single neuron to a population of neurons, having too much data starts



Courtesy of Byron Yu

Byron Yu is an assistant professor of electrical and computer engineering and biomedical engineering and a member of the Center for the Neural Basis of Cognition.

to become a problem. There is so much data from neuronal systems with thousands of neurons that it is hard to sift through it to get the important information. This is why computational big data techniques can provide large advances to this field.

Neurons display lots of behavior that is hard to understand within the scope of one single neuron.

The specific technique that Yu and his team used is known as dimensionality reduction. This is a technique used to simplify the many variables

in a large system to a smaller set of explanatory variables. In the case of neuroscience, the number of variables is the number of neurons in the system.

The method is employed to characterize many of the neurons together so that they can be described by a fewer set of explanatory variables. This works because, while the actions of individual neurons is hopelessly complicated, simpler organizing principles may exist in the population as a whole.

Dimensionality reduction is already being used to help understand neuronal systems. As written in Yu’s paper that is published in *Nature*, a group studying a motor system was able to successfully employ the technique. The

See **DATA**, A5

SCITECH BRIEFS

Kids’ brains absorb majority of energy

Researchers at Northwestern University have found that during childhood, the brain absorbs most of a kid’s energy. Since this leaves less energy for the rest of the body, compared to other animals, even other primates, human children take much longer to grow in body size.

Scientists have been considering this idea for decades, but were unable to come up with hard data to verify the theory. Positron emission tomography (PET) imaging, a method that estimates the brain’s energy consumption, is risky for use on children. Consequently, scientists used an older dataset of PET scans on 29 children who were suspected of having a brain disorder at the time, but later turned out to be healthy. On plotting trends, the graphs indicated that the hypothesis of slow body growth due to energy consumption by the brain was indeed true.

Source: Science News

Message transmitted between two brains

Scientists were able to use technology to allow the transmission of messages between the brains of two people at a distance of 5,000 miles apart without performing any invasive surgery.

Here’s how it worked. Electrodes were attached to the scalp of one subject to record the electrical currents in the brain while it had a specific thought. At the other end, a computer brain interface was used to map a neural code for binary symbols, by making the subject perform a certain action for a one and a different one for a zero, and capturing the electrical signals from each using electroencephalography (EEG). The message from the sender was encoded into binary and sent to the recipient’s visual cortex as a string of ones and zeros in their peripheral vision. This binary string was then decoded to get the actual words of the message.

Source: CNET News

Low costs catalyze space tourism

Did you want to be an astronaut when you were younger? Well now, with the increasing prevalence of space tourism, you can fulfill your dream for a low price of \$75,000. World View Enterprise, a veteran space company, is developing high altitude balloons that can carry eight people and will be making trips to space by the end of 2015. The five-hour trip will give passengers a birds-eye view of the edges of Earth while they enjoy a meal and open bar. While it is still in the test phases, there is already interest from people around the world.

The space tourism industry is one of the fastest growing luxury markets, increasing 50% faster than the average luxury good. Considering that previous space tourism ventures have cost upwards of \$50 million, the increasing popularity can largely be attributed to the lower ticket prices.

Source: USA Today

Malaria diagnosed using magnets

Researchers at the Nanyang Technological University in Singapore have found that magnets can detect the presence of malaria before symptoms appear.

When the technique was tested on mice, magnetic sensors were able to spot imperceptible levels of the malaria parasites in a matter of minutes.

The device relies on the fact that red blood cells are magnetic due to the presence of hemoglobin, which is an iron-based protein. When malarial parasites enter the blood stream, they feed on the hemoglobin, converting it into nanocrystals called hemozoin, which boost the magnetization of the red blood cells, making it easy to detect the presence of the parasites.

Source: Science News

Satellite can see through fire smoke

While mapping major fires by satellite imaging is certainly desirable, in practice, it has been hard to accomplish due to the smoke obscuring the fire. However, the new WorldView-3 satellite from the company Digital Globe has been equipped with high resolution short-wave infrared (SWIR) sensors that can remove most of the smoke from the image.

The SWIR sensor can detect up to eight different wavelengths of infrared light, each of which has different advantages. While one wavelength can see through smoke, another can see man-made materials more sharply. When the data from all eight wavelengths is combined, it reveals a detailed heat map of where the fire is burning most intensely.

Source: Wired

Archerfish found to be skillful hunter

Archerfish, aptly named for their ability to shoot jets of water at insects perched on leaves and twigs above, have recently been found to be more skillful than previously thought. Stefan Schuster and Peggy Gerullis of the University of Bayreuth in Germany trained archerfish to hit targets ranging from 20 to 60 centimeters high and observed the archerfish in action. They found that the archerfish actually made intricate adjustments to the cross-sections of their mouth openings to vary the projection of the water jets they were shooting out. This study was published in *Current Biology* on Sept. 4.

Source: Science Daily

Compiled By
NIVEDITA CHOPRA

Neuroscience made easier

From DATA, A4

group had gathered data from the primary motor cortex, the part of the brain associated with planning and executing movements, during a task with 108 different experimental conditions.

By utilizing dimensionality reduction, they were able to analyze the massive amount

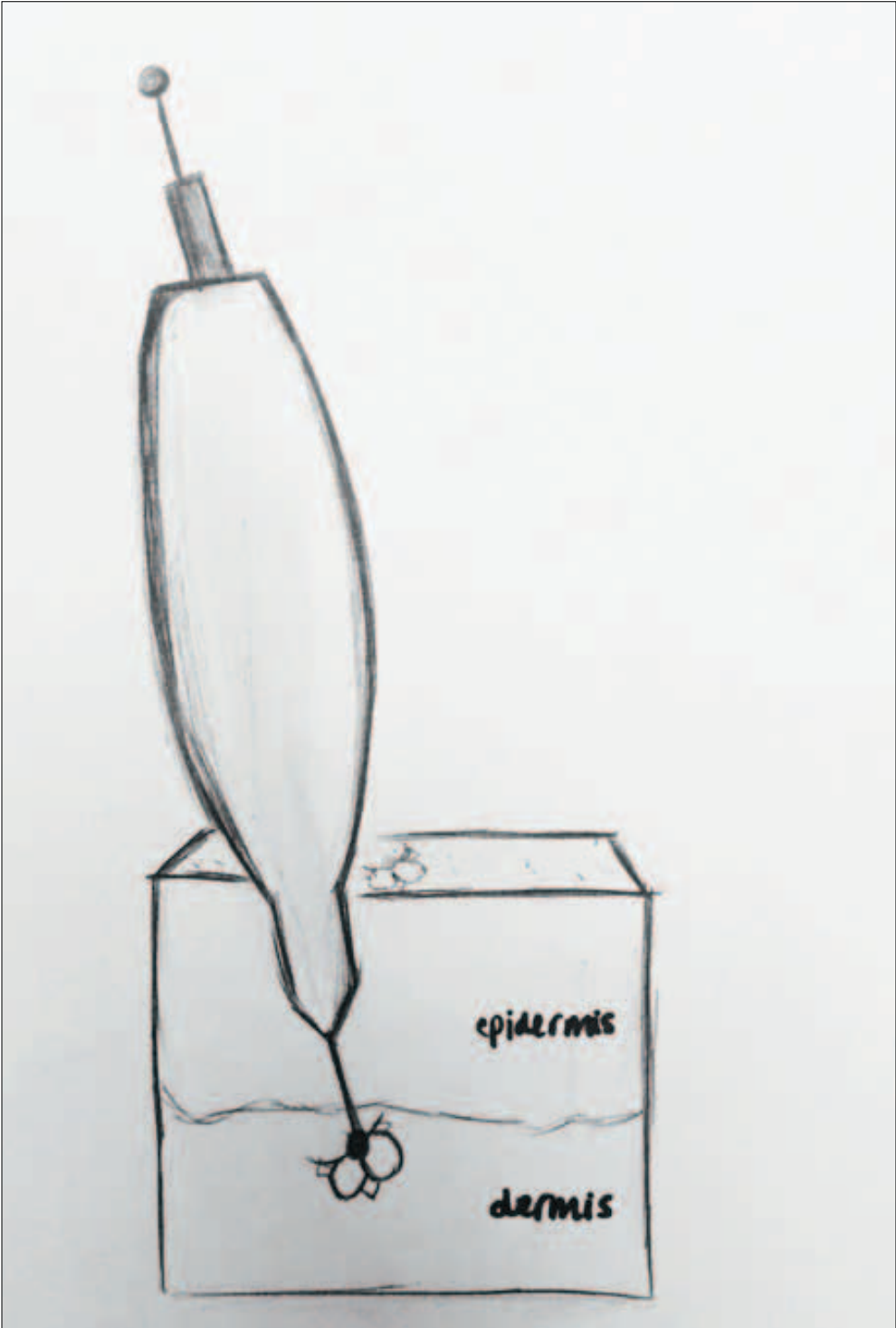
of data and surmise that the system was actually performing preparatory behavior which then led to the movement being executed.

Looking at an individual neuron, this two-step process was completely out of grasp. Simplifying the model and studying the population as a whole was integral to the success of the group. With more

and more data being gathered through new technologies and advances in neuroscience, computational methods may no longer be assistive — they may become a necessity. Yu’s work is an essential step toward bringing the two fields together and it will likely have widespread applications throughout neuroscience research.

HOW THINGS WORK

Tattoos are inflammations



Michelle Wan/Art Editor

BROOKE KUEI
SciTech Editor

If you’re thinking about getting a tattoo, you might want to learn about the science behind the art before you make your final decision. While on the outside, a tattoo is a beautiful and symbolic creation, on the inside, it is actually the result of a perpetual inflammatory process.

Tattoos have been used as a form of self-expression for millennia. According to neuroscientist Claudia Aguirre in a TED-Ed video titled “What makes tattoos permanent?”, the earliest evidence of body ink was found on a Peruvian mummy from 6,000 BCE. To add even more history to this tradition, the tattoo machine was invented in the late 1800s, its design based on Thomas Edison’s engraving machine.

Today, one look around campus can reveal a variety of different tattoo designs, colors, and types of people sporting them. With the independence of life at college, who’s to stop you from getting one, too?

Maybe all you care about is whether or not it will hurt, but there is a lot more that can be learned about the tattooing process. Although humans shed 40,000 skin cells per hour, the TED-Ed video explains that tattoos remain permanent because they are not on the epidermis, but rather inside a second layer of skin: the dermis.

A tattoo machine punctures the skin continuously with a needle, depositing ink into the dermis, which is made up of collagen fibers, nerves, glands, blood vessels, and more.

Whenever the needle penetrates the skin — which could be up to 3,000 times per minute — it causes a wound which alerts the body to begin an inflammatory war to fight the intruding tattoo ink. White blood cells known as lymphocytes form the first line of defense; however, most of the pigmentation particles are too large for them to fight. Next, a different type of white blood cell — macrophages — come in and eat up the pigmentation particles. Some of these macrophages will carry the dye back to the lymph nodes, but many will simply remain in the dermis — dye and all — forever suspending your angel wings, Chinese character, or lover’s name in the second layer of skin.

In addition to existing inside macrophages, some ink particles simply float eternally in the gel-like matrix of the dermis. Still, others are eaten by dermal cells called fibroblasts, which remain in the dermis for their entire life cycles. Even when fibroblasts die, they get taken up by new dermal cells which hold both the old cell and the dye within it.

How, then, can tattoos be removed? According to Anne Laumann, professor of dermatology at Northwestern

University, the best method of tattoo removal is laser treatment. In laser treatment, light targets a specific color and breaks up the ink particles of that color. By breaking up the ink particles, laser treatment creates particles that are small enough to be carried away by white blood cells. Unfortunately, this method does not always remove the entire tattoo.

Besides the tattooing process and tattoo removal, there is also a science to the ink used for tattoos. Traditional pigments were made from ground up minerals and carbon black, but today’s pigments can sometimes also include industrial organic pigments, vegetable-based pigments, or plastic-based pigments.

While the composition of your tattoo ink will inherently vary based on where you get your tattoo done, there are common compositions for various colors of ink. For example, black ink often includes carbon, logwood, or iron oxide; brown contains ochre; red has cinnabar (HgS) or cadmium red (CdSe), which are both known for toxicity. Consequently, it would be in your best interest to ask your tattoo artist about the chemicals they use in their inks to avoid allergic reactions or phototoxic reactions.

It has often been said that science is an art, but the biological and chemical intricacies behind tattoos suggests that art is a science, too.

Carnegie Mellon Philharmonic

Andrés Cárdenas, Artistic Director
Joshua Burca, violin

SUN
SEP
14
2014
7:30 pm

Ravel *Alborada del gracioso*
Sibelius Violin Concerto
Prokofiev Orchestral Suite No. I & II
from *Romeo and Juliet* (selections)
Tormis Overture No. 2

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Forum

FROM THE EDITORIAL BOARD



Kelsey Thompson/Staff Artist

On-campus bar may be worthy of consideration

With the closing of Panther Hollow Inn (PHI), known by many Carnegie Mellon students as the university’s unofficial campus bar, the campus community is left without a nearby popular alcohol-serving establishment.

This may be a larger issue than it initially seems, with the possibility of students having to travel as far as Oakland or Shadyside to socialize in an alcohol-friendly environment. Not only would walking to and attending distant bars at night expose students to greater safety risks, it may dilute the sense of social community surrounding a nearby campus cultural institution like PHI.

Many peer universities have on-campus pubs where students of legal drinking age can convene in a regulated setting to socialize and enjoy a bar atmosphere. Massachusetts Institute of Technology’s (MIT) student-run Muddy Charles Pub, for example, prides itself on housing the networking conversations of students who have gone on to be Nobel laureates or prominent scholars. Harvard University also has a student-owned and operated pub, the Cambridge Queen’s Head. With the closing of PHI, Carnegie Mellon lacks a similar locale for students of legal age to relax and socialize.

The Tartan would like to encourage Carnegie Mellon to consider instituting a similar on-campus pub.

There are concerns to be acknowledged regarding the discussion of having a campus bar. However, this may also be an opportunity for the university to establish a safer and more regulated facility for student drinking.

For instance, campus bars are traditionally strict about how intoxicated patrons can become, and Carnegie Mellon has enrollment data which contains students’ birthdays. Using that data, false IDs can be detected, and the university can ensure that all attending students are 21 years or older and can enjoy alcohol in a responsible fashion.

Given that the many alternatives for students who wish to go to bars involve walking into the neighborhoods surrounding campus, and drinking in institutions which may not police their patrons’ intoxication or interactions very thoroughly, students could be exposed to a greater amount of risk now that PHI has closed.

A campus bar would be within a quick response distance for campus police and would be located in a safe and typically convenient area for members of the campus community.

Now that PHI no longer exists, students who wish to consume alcohol may do so more frequently in such settings as dorm and house parties.

Needless to say, these environments are not regulated and may result in dangerous alcohol consumption habits. Additionally, these settings don’t facilitate the same relaxed social setting and networking opportunities that campus bars can provide. It might even be worthwhile to consider managing a campus bar as a valuable, practical opportunity for business or management students.

This is not a proposal for the development of a campus bar, but it is an idea that should be considered. The closing of PHI has left a notable gap in Carnegie Mellon’s campus culture. PHI was a close, safe place to grab a drink with friends and socialize, and the role of pubs in networking for students and future scholars has been well-established, hence the presence of these institutions on the campuses of universities like Harvard University and MIT. Carnegie Mellon should engage in a discussion to consider the possible benefits and drawbacks of a similar institution and determine whether pursuing such a project would be beneficial.

Nude photographs “scandal” is a sex crime

Last Sunday, nude photographs leaked of several high-profile female celebrities, including Kirsten Dunst, Kate Upton, and Jennifer Lawrence.

The perpetrators were hackers who had presumably taken advantage of security vulnerabilities in Apple’s iCloud system. The knee-jerk reaction of the public and mainstream media has been to call this a “scandal.” However, the real scandal here is not that the pictures exist but that their leaking constitutes a gross violation of privacy and women’s autonomy, as well as an unquestionable sex crime.

An encouraging number of news outlets have spoken out in condemnation of the hackers and of the victim-blaming usually rampant in such cases. Many have jumped in with the not-so-helpful advice that

these celebrities should simply “not take nudes,” thus solving all of their problems. Such arguments place the bulk of responsibility not on the criminals, but on the women exercising their legitimate right to express their sexuality however they wish and — on a practical level — to store personal photos in a place they expect to stay private.

The “don’t take nudes” argument is the virtual equivalent of “don’t wear short skirts” if you don’t want to be raped. In addition, as we have recently seen with the advent and viral phenomenon of “anti-rape nail polish,” buying special nail polish, dressing conservatively, and never taking suggestive photographs are hardly the secret to stopping the real perpetrators of sexual crime.

No person — celebrity or other-

wise — deserves to have their privacy so callously infringed upon. If someone wants to take nude photographs of their own free will and volition, that is their right. Conversely, if they don’t wish to take nude photographs, they are free to abstain.

However, when the inevitable next round of photographs are leaked, and are known to be published without the consent of their subjects, we should all take a moment to think.

By seeking out these photographs, by looking at them, we feed into the harmful societal practice wherein women’s bodies are commodified. Instead, we must refuse to sacrifice human dignity for the sake of cheap sexual gratification and a fast food-reminiscent hunger for scandal.

U.S. must develop clear strategy for Middle East



JUSTIN YAN

The Iraq War was a failure in convincing Iraqis that the United States could save them from disorder in the form of dictatorship, poverty, and extremism.

The three threats are entangled, and though the first has been somewhat alleviated through American efforts, the effects of dictatorship are still widely seen in the form of a disorganized and very partisan government. Moreover, 9/11 and the Islamic State of Iraq and Syria (ISIS) can be seen as reactions to American involvement in the region, as well as to multiple malfunctioning governments. Recent events, from the beheading of American journalist Steven Sotloff to the unexpected re-capture of Mosul by Iraqi and Kurdish forces, underline the magnitude of the volatility surrounding the terrorist group known as ISIS. Moreover, ISIS presents a unique conundrum to American foreign policy.

humanitarian issues. As history tells us, every action the United States executes in the Middle East has a strong and often varied reaction, fueling a constant feedback system that makes the execution of a coherent and effective foreign policy even more complicated. American foreign policy in the Middle East is becoming the world’s most complex game of public relations. America wants to act as a stabilizing force, but without the overexertion of its own armed forces, as seen during the Iraq War.

One way the United States is accomplishing this maneuver is through the cooperation with Sunni forces. The reason for this relationship is twofold. Not only will it show that the Americans can cooperate with both Shiites (who had until recently, dominated Iraqi politics, thanks to United States-backed Prime Minister of Iraq Nouri al-Maliki) and Sunni, but also cooperation will cut off the supply of fresh recruits to Al Qaeda and ISIS, or any future splinter terrorist group who recruit young Sunni Muslims. The Shiites and Sunnis have been deadlocked in conflict for decades. Sunnis dominate many countries in population, often forcing the Shiites to live impoverished and oppressed.

In Iraq, however, the opposite is true, and the fact that the United States allowed al-Maliki to install a Shiite-dominated government has further dented relations with the Sunnis. ISIS has won the support of the Sunni people, many of whom make up the bulk of its fighters, by appealing to “Sunni Pride.” The United States must do the same. The Obama Administration must figure out a way to help the Sunnis and encourage a new brand of nationalism removed from ISIS.

Currently, government forces in both Syria and Iraq are led by the Assad regime and Shia forces, neither of which holds any appeal for local Sunnis. As a result, the key to winning over the Sunni does not lie in rapid military success, but rather in winning on a cultural, ideological scale.

By providing humanitarian and political support for the Sunni people, as well as arming, training, and providing tactical support for the Sunni forces against ISIS, the United States may be able to tip the balance of power in Iraq.

The United States has already come too far to become a bystander with no clear plan of action in the ongoing Middle East crisis. The nation must be the spark for dialogue and a change of the American image if it wants to protect its own interests, as well as provide a safe and stable environment in the Middle East.

Justin Yan(jky@) is a staffwriter for The Tartan.



Courtesy of Wikimedia Commons

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Hunt Library’s new IDeATe renovations hurt functionality

Justin McGown

JUSTIN MCGOWN

Less than a year ago, Hunt Library received renovations that made its first floor a very welcoming place for students to work, study, and socialize. The renovations were immensely popular and showed a real understanding on the part of the university toward the wants and needs of students. Alongside an initiative by library staff to be responsive to student suggestions that drew praise from this publication, it rendered Hunt Library an attractive place.

If you have not yet been to Hunt, I recommend you do your best to remember that inviting open floor plan, the wide spaces, the dozens of desktop workstations, and the ability to see out both the front and back windows at the same time — because that has all been taken from you. The elimination of popular student spaces also extends to the second floor,

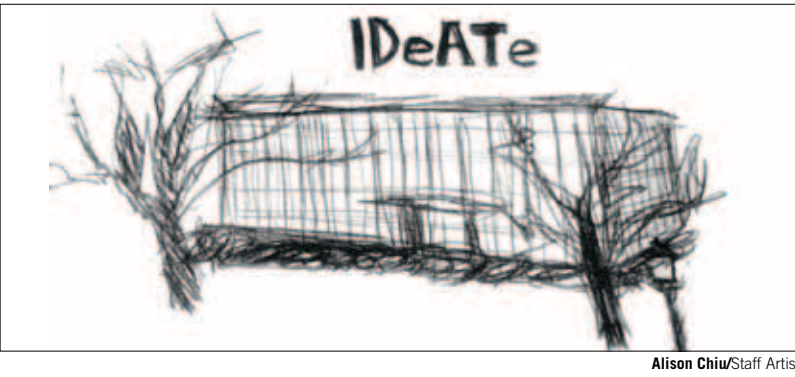
where stacks displaced by the IDeATe construction have filled in the open areas where there were once tables, chairs, and groups of students doing work and having conversations.

As compensation, we have been given more silent study space on the third floor. Expect to wander up there while looking for printers, as the three given to us after the last round of renovations are gone, replaced by a single unit.

Of course there are some advantages to the new renovations. The basement now has a collection of fabrication spaces — that are only open to those who complete semester-long intake courses. The basement also now has a room painted entirely black, which should alleviate the constant demand for motion capture or psychological torture spaces on campus. There is a pair of classrooms that you can sit quietly on the periphery of until you determine if the guy writing on the whiteboard and talking loudly is teaching a class or just being obnoxious. Four of the computers have also survived and been tucked into a cramped corner by the two remaining printers. One of them

is situated so that only the person sitting at the computer next door can see your screen, perfect for “studying human anatomy”!

The IDeATe program could be a useful addition to campus, though we won’t know for a few years when the first people to graduate with the associated minors enter the job market. But the administration needs to be roundly criticized for the way the renovations were handled. Re-renovating a space that had only opened a matter of months ago is wasteful and inconsiderate of the planning behind a student-centric space. While the facilities in the basement seem like overall useful additions, even with their limited accessibility to the larger student body, there is no clear reason why the first-floor classrooms needed to be constructed, especially when Baker Hall and Porter Hall have numerous classrooms that are showing their age and either lack central air or rely on window air conditioning units that appear to be older than some students. The new Hunt classrooms do not offer anything that other classrooms do not and serve to detract from the utility of the library



Alison Chiu/Staff Artist

for many students.

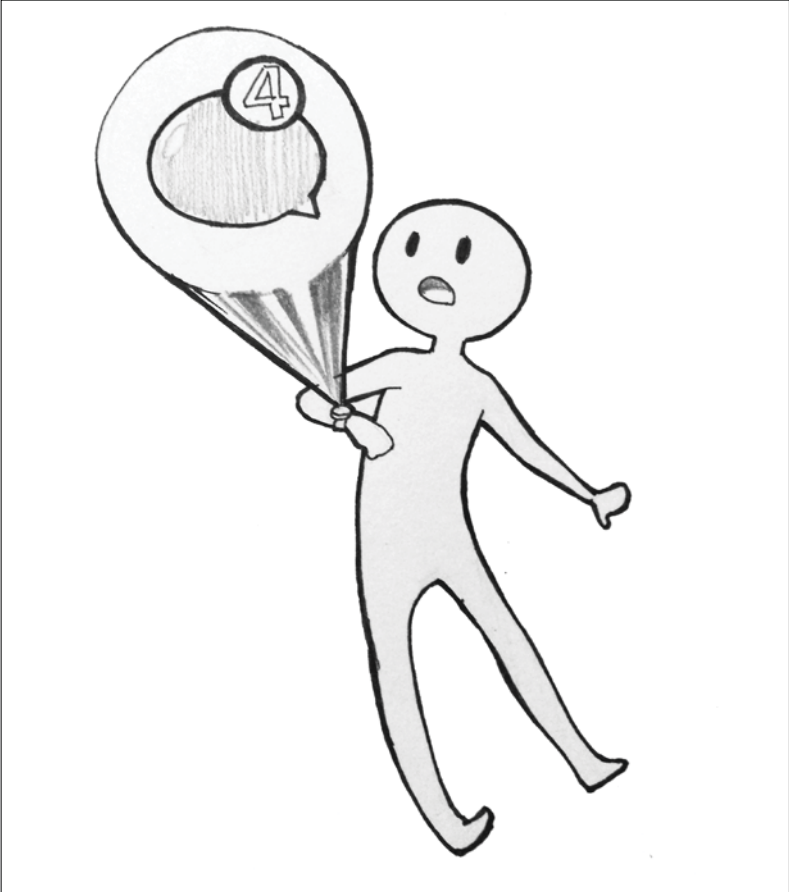
The stealth with which the construction was done is also concerning, since this space popular with students was completely reworked over the summer while students were not around. No official emails went out to announce town halls or other forums for discussion of the changes; they simply happened. Were students consulted about the renovations at all? It seems doubtful.

Two official emails have contained reference to IDeATe. One of them, cosigned by Vice Provost for Design, Arts, and Technology Thanassis Rikakis and Dean of University Libraries

Keith Webster says: “The placement of IDeATe’s student facilities in the Hunt Library reflects a growing trend for academic libraries to expand from a focus on housing collections of books and journals to becoming a space where students come together to work with their peers, interact with technology, and access a range of media to create knowledge.” If they had bothered to ask, they would know we were already doing that without the aid of walls and a seemingly unnecessary reshuffling of content.

Justin McGown (jmcgown@) is a staffwriter for The Tartan.

Smartwatches detract from normal life



Eunice Oh/Staff Artist

Braden Kelner

BRADEN KELNER

In a January issue of The Tartan, I wrote an article called “Fitness trackers more than just a trend.” I argued that fitness trackers, like Fitbit’s line of wristbands and other wearable technologies, are here to stay and will become increasingly popular as makers round out their capabilities to include more functionality, such as the ability to respond to texts or speak through the devices. Since then, a number of device makers, including Samsung and Motorola, have announced or launched a variety of smartwatches and trackers.

Now, I’m writing again to say

these devices are too much. After purchasing a Pebble smartwatch in November, at first I enjoyed screening texts and calls on my wrist. I could continue conversations with friends in-person while simply flicking my wrist to see incoming notifications. I could even check the number of steps I took through a downloadable pedometer with functions similar to a fitness tracker, and scroll through my Twitter feed without ever pulling my phone out.

After a while, though, I found myself constantly checking my wrist as an influx of emails, text messages, and social media notifications went straight to my watch. I couldn’t read a page of a book efficiently or remain fully immersed in a conversation for more than a few minutes before my smartwatch called my attention. Eventually, I turned off the device’s

bluetooth capabilities so that it only told the time. Nine months after I purchased the watch, it lies in my bedroom uncharged.

Smartwatches and other wearable technologies seem to have been developed with the idea that people will check their phones less if they integrate technology into their daily lives in less intrusive ways. After all, if a person doesn’t have to continually remove their phone from their pocket to check it and possibly respond, they should be able to more seamlessly screen notifications to determine if it is worth interrupting a daily activity for.

However, in my experience, these devices do just the opposite. By placing notifications on a person’s wrist, smartwatches and other wristband-like technologies just make the distractions more accessible. They force people to feel the buzz of a notification that they would not normally feel or take the time to check. With the notification at the ready, though, there’s no reason not to check it. Instead of checking their cell phone periodically, people can look to their watch every time it buzzes. And if rumors of an imminent Apple iWatch announcement are true, it seems these devices will become a mainstream trend this year — possibly even tomorrow — when the tech giant is set to announce new products at a press event.

To combat the distractions these devices offer, people must learn to limit the notifications pushed to them. It’s possible to customize which notifications go to the watch and which only go to the phone screen.

While even limited notifications can be distracting, fewer pings to the wrist can help to keep people in their conversations and away from their notifications. If people limit their notifications to these devices, they can ensure their technology doesn’t become overwhelming.

Braden Kelner (bik@) is Editor-in-Chief for The Tartan.

Corporations right to avoid onerous U.S. tax burden

Kyle Henson

KYLE HENSON

Corporate tax avoidance has become a trendy topic lately, with President Obama himself taking the time to speak out on the issue a few weeks ago. Recently, it was heavily publicized with Burger King corporation’s decision to merge with Tim Hortons Inc. and move the corporate headquarters of the new combined company to Canada, rather than staying in Miami.

Many liberals, President Obama included, have criticized Burger King’s decision for demonstrating a lack of “economic patriotism,” of course implying that Burger King has some sort of duty to stay in the United States and compromise its profits under a non-competitive corporate tax structure because the company just owes it to America. Unfortunately, what Obama forgets is that corporate executives don’t have a duty to act in the United States’ best interest, but in fact have a very different duty, called a fiduciary duty. That’s a fancy way of saying that corporate executives are legally obligated to act in the interest of the corporations they work for. In fact, corporate executives can and have been convicted of crimes for not acting in the best interest of the shareholders of the corporation.

In other words, if Canada’s corporate tax structure makes Burger King’s tax bill lower, and therefore makes it a more profitable enterprise, not only is it a permissible action for the company to move, but it’s actually the company’s legal duty. Examining our corporate tax structure in comparison to Canada’s, it becomes very clear that Burger King’s decision to move its HQ to Canada was absolutely correct.

The United States suffers from

the highest corporate tax rate among industrialized countries, coming in at 39 percent. To put that in perspective, Canada’s corporate tax rate is 15 percent, which has vaulted Canada to the spot of sixth most economically free country in the world, compared with the United States in the 12th spot and declining. The decision to favor a freer economic tax structure wasn’t an unconscious one either. Canada and other countries are realizing that they can attract more business and investment by creating economic freedom. This creates more wealth for Canadians and makes the country better off.

When we look at the reasons for the United States’ high corporate tax rate, we can find the answer in a few shocking statistics. General Electric regularly has a net positive tax bill, meaning that when all is said and done and the taxes are calculated, the government is writing GE a check, and not the other way around. Similarly, one in nine Standard & Poor 500 companies had a tax bill of \$0 last year, and many more companies paid less than the 39 percent that plagues corporations without the resources to lobby and create loopholes. Massive corporations can use their resources to warp the tax code in their favor, a luxury smaller corporations don’t have.

Our egregious corporate tax structure only serves to further the aims of cronyism and it certainly runs counter to the aims of economic development. When corporations act on their fiduciary duties and eventually leave the United States for our more competitive neighbors, liberals can gripe about economic patriotism, but until we reform our corporate tax structure, empty words won’t bring back the prosperity that America once enjoyed.

Kyle Henson (kahenson@) is a staffwriter for The Tartan.

The Tartan is still mourning the loss of PHI, but hopeful for the future of its former home. So we asked,

What would you like to see go into the PHI location besides Chipotle?



Kalyani Narayan
Biology
First-year

“It would be nice to have a Jamba Juice because then we could stay hydrated while on the go.”



Jerry Yang
Business Administration
Sophomore

“I would like to have a convenience store near CMU besides Entropy. Entropy sells limited items but 7-Eleven sells a lot more items.”



Dominique Brych
Mechanical Engineering
First-year

“I would like a Chick-fil-A.”



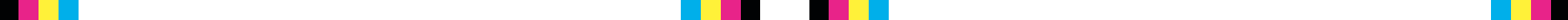
Tyler Park
MCS
Sophomore

“It would be nice to have another convenience store other than Entropy in the campus.”



Maija Anstine
Viola Performance
Graduate Student

“A bar similar to PHI!”



DIETRICH COLLEGE

Dean's List Spring 2014

Carnegie Mellon University

Dietrich College
Humanities and
Social Sciences

On behalf of the faculty and staff of the Marianna Brown Dietrich College of Humanities and Social Sciences, we congratulate the DC, SHS, and BHA undergraduates listed below for earning a place on the Spring 2014 Dietrich College Dean's List.

— Dietrich College Dean's Office

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Sarah Amick
Swathi Anand
Courtney Armstrong
Jenna Asperslag
Junior Baboolall
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Jessica Benenson
Laura Berry
Jenna Blake
Stephanie Boris
Peter Brady
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INTERNATIONAL SPORTS COMMENTARY

Summer soccer transfers: The good, the bad, and the ugly

NISHANT RENIWAL
Staffwriter

The summer soccer transfer window of 2014 has finally slammed shut. Records were set by clubs for the amount of money spent, as the financial superiority of the Barclays Premier League was at full display.

The effects of the Union of European Football Associations's (UEFA) new Financial Fair Play regulations were also seen, as the likes of Manchester City, Paris Saint-Germain, and Chelsea significantly curbed their spending from previous years to make up for previous losses. So which transfers were on paper the best of the summer? Which ones just do not seem right? And which ones were complete shockers? Let's take a look.

Best transfers

Chelsea must be given plaudits for its acquisition of striker Diego Costa and midfielder Cesc Fàbregas. For years, since striker Didier Drogba left the club, Chelsea has lacked a go-to goal scorer, especially someone with the temperament and competitive spirit of current manager José Mourinho.

In Costa they now have a striker who matches the likes of Cristiano Ronaldo and Lionel Messi in scoring rate and someone who was instrumental in guiding his previous club, Atlético Madrid, to the La Liga title as well as the Champions League Final. His endless runs, prowess in the air, and inability to accept defeat is exactly what Chelsea lacked in its strikers, and Mourinho has done a good job to rectify that.

Fàbregas has a style of play that perfectly complements defensive midfielder Nemanja Mati and, in that, he does all the things Mati cannot — make intelligent runs, spot key passes, and score important goals.

His performance in Chelsea's first game of the season



Courtesy of Ludovic Péron vis Flickr

Esteban Cambiasso was acquired this summer by Leicester City, a signing that surprised fans despite Cambiasso's leadership and winning mentality.

against Burnley (which contained an early contender for assist of the season) shows he is exactly the player the team was missing as Lampard aged.

Kudos to Real Madrid for replacing Xabi Alonso by getting one of the best midfielders around in the game today at a paltry 30 million euros. Toni Kroos influences a game the moment he steps on the field, and his vision and work ethic will certainly help the forward line.

Bayern Munich signing Alonso from Madrid also seems to be an astute acquisition, as he provides more than adequate cover for the injured Javi Martínez and enables them to have two experienced pass masters (along with Bastian Schweinsteiger or Philipp Lahm) in midfield at all times.

Among the smaller clubs, Swansea City bringing back Gylfi Sigurðsson to the club

is a smart move, as he brings creative flair and midfield goal scoring to a club that lacked it severely without the departed Michu. Leicester City signing Esteban Cambiasso is another acquisition that may raise a few eyebrows but is a great move considering he has the winning mentality that the club desires and leadership in the locker room.

Everton signing Gareth Barry permanently, Southampton signing Fraser Forster, Liverpool signing Dejan Lovren, and Arsenal signing Callum Chambers are other brilliant moves, but certainly not with the impact the ones above are likely to have.

Worst transfers

It's said that if a club with a championship team stands pat it is likely to fail the next season simply because the

teams around it get better. Maybe this, and James Rodríguez's stunning World Cup performances, were the reason behind Real Madrid signing this attacking midfielder. Now James is a great player, destined to be a superstar. But does Real Madrid really need him?

The club's last season was highlighted by a lack of balance in the team, as Madrid struggled on defense but was sensational in attack. By selling Di María and signing Rodríguez, Madrid has lost all that they worked for last season, and they will have to work hard to replace Di María, since Rodríguez is certainly not the same player. Defensive reinforcements would have been a much better idea.

Did Luis Enrique even sanction the transfer of Luis Suárez to the club? Suárez may be the third-best player in the world

after Ronaldo and Messi, but he happens to play in the same position as Messi or in the same position as another Barcelona forward, Neymar.

Playing the three of them in the same forward line means either Messi or Suarez is shunted wide, and that will not make either player happy. Selling Alexis Sánchez to make this deal viable is another questionable move that Barcelona has made.

The Serie A is also littered with several questionable transfers, but the ones that stand out are Fernando Torres to AC Milan and Napoli signing Michu. Torres has been very evidently past his prime for several years now, and signing him is an indication that Milan is too.

Michu was the last player Napoli needed. The team has great attacking talent, and signing another player there

did not make sense in the first place. Add that to the sale of vital midfield general Valon Behrami, not signing any strong defensive midfielder, no defensive depth, and the continual decision to play Marek Hamšík in an unfavorable position, and you get a transfer window that was nothing short of a disaster.

Shocks of the summer

The first transfer on this list has to be Manchester United signing forward Radamel Falcao. The rumors began early in the morning on the deadline day, and by night it was confirmed.

The swiftness and secrecy with which this move was made was admirable, and much maligned chief executive Ed Woodward deserves plaudits for the way he managed to get one of the best forwards in the world to reinforce probably the best strike force in the world.

Real Madrid letting go of Álvaro Morata and signing Javier Hernández Balcázar (Chicharito) also came as a surprise. This move may still work out for Madrid, as Chicharito provides great cover for Karim Benzema, is very effective as a super-sub, and also has the pace and mobility that Morata could not offer.

Liverpool signing Mario Balotelli was a move questioned since the first rumor and still remains a surprise. Arsenal signing Danny Welbeck for the same price is as much of a surprise.

Welbeck may suit the Arsenal philosophy and playing style, but he was certainly not the player the team needed. Welbeck has a hopelessly poor minutes-to-goal of games-to-goal ratio, which is what Arsène Wenger should have been looking for.

There were some brilliant moves and some bad ones, but this has been one of the most exciting transfer windows. Let's hope this is just a prelude to what promises to be a nerve-wracking season for fans and clubs alike.

NFL teams contend for title

CONTENDERS, from A10

receiver. Frank Gore might be getting old, but he was productive last year, and rookie running back Carlos Hyde is talented and should ease some of the workload on Gore. The 49ers will continue to have the best left side of the offensive line in left tackle Joe Staley and left guard Mike Iupati, and this team should spin the scoreboard to go with its solid defense.

New Orleans Saints

The New Orleans Saints bring back an incredible offense from last season. Rookie wide receiver Brandin Cooks might actually make this unit better. Drew Brees already had tight end Jimmy Graham and wide receivers Kenny Stills and Marques Colston to throw to, and now defenses will have more of a headache.

Running back Darren Sproles is gone, but he was inconsistent last year, and running back Pierre Thomas has been better at the same role

for years.

Their defense has been okay for a long time, and last season their pass defense was great. Free agent addition, safety Jairus Byrd certainly helps with that, and this could be the second- or third-best pass defense in the league, despite some questions about their second corner spot.

The one true weakness of this team is the run defense, but the lack of focus on halfbacks this offseason shows that the running game will continue to decrease in importance this season, so this weakness will matter less.

Seattle Seahawks

Finally, the Seattle Seahawks are the best Super Bowl repeating candidates in a long time. They brought back the same team that laid waste to the NFL with several key changes.

They lost some depth in the front seven after nearly the whole second unit got big money elsewhere. This showed when they had some

trouble stopping Eddie Lacy in the beginning of the game Thursday night. However, their front unit is still incredible and their secondary, the Legion of Boom, might be the best in league history. The offense has improved along the offensive line — their only weakness last year — and running back Percy Harvin is back. Harvin might be one of the 10 best players in the league, and his ability to run, receive and return kickoffs was on display as the Seahawks crushed the Pack.

The main weakness of this team is not even a weakness. For some reason, the 'hawks have Earl Thomas returning punts. There is no reason to risk Thomas for three yards every now and then.

That's not even a real weakness, but it's the best reason to think they can't repeat. There's no use even listing all of the excellent contributors to this team, because there's no point in just relaying the whole roster. Only the single-elimination format of football is a true threat to this team.

SPORTS COMMENTARY

Steelers have high hopes

STEELERS, from A10

big plays for the opposition than turnovers, reversing the formula that led the Steelers to their three Super Bowl appearances (and two wins) between 2005 and 2010.

On the offensive side of the ball, Pittsburgh hopes to have a new identity closer to the championship Steelers of old, and less like the gun-slinging spread offensive heavily used in recent years. The departures of top receivers in recent years — Mike Williams to the Miami Dolphins last year and Emmanuel Sanders to the Denver Broncos this off-season — has left the once explosive wide receiver core with question marks beyond stand-out Antonio Brown, whose success played a large role in the decision to let Sanders walk. Markus Wheaton barely saw the field in his rookie season, as he dealt with lingering knee injuries, recording only six receptions, and veteran Lance Moore was brought in

on the cheap after the New Orleans Saints decided to move in a younger direction.

While this lack of depth at receiver may sound like a recipe for disaster, it should lead to a return to the ground-and-pound style used by the Steelers during many of their championship seasons. A rebuilt and healthy offensive line is laying the ground work for the best tandem of Pittsburgh running backs in recent memory. With center Maurkice Pouncey and guard David DeCastro both healthy for the first time since DeCastro joined the team, the line appears to have turned a major weakness into a source of strength.

To capitalize on the line, the Steelers drafted Le'Veon Bell last year and brought in LeGarrette Blount after he revitalized his career in New England last season. Bell has shown flashes of breakaway speed and great vision, but was hampered by injuries for much of last year, while

Blount gives the Steelers the large battering ram they have been missing since Jerome Bettis retired after the 2005 Super Bowl win. This increased running game will hopefully keep some of the pressure off of perpetually beaten quarterback Ben Roethlisberger, who has been attacked both on and off the field due to the recent gun-slinger mentality he has been forced to adopt.

Overall, Steelers fans have plenty to be excited for this season, with the team emerging from its rebuilding cocoon a younger team more closely resembling the championship teams of old. With the division rival Cincinnati Bengals and Baltimore Ravens both facing major question marks after interesting off-seasons, the extension of belabored quarterback Andy Dalton and the minor suspension and resulting fall out for running back Ray Rice, respectively, the AFC North is up for the taking.

Upcoming Events

Men's Golf

Hal Hansen Invitational
at Clarion Oaks Golf Club
Clarion, Pa.
Sept. 9, 9 a.m.

Women's Tennis

Carnegie Mellon
at Grove City
Sept. 9, 5 p.m.

Women's Tennis

Seton Hill
at Carnegie Mellon
Sept. 9, 6 p.m.

Women's Golf

Grove City Invitational
at Grove City Country Club
Grove City, Pa.
Sept. 10, TBA

Women's Volleyball

St. Vincent
at Carnegie Mellon
Sept. 10, 7 p.m.

Men's Soccer

Carnegie Mellon
at Geneva
Sept. 10, 7 p.m.

Women's Cross Country

Slippery Rock University
at Cooper's Lake Campground
Sept. 12, 5 p.m.

Men's Cross Country

Slippery Rock University
at Cooper's Lake Campground
Slippery Rock, Pa.
Sept. 12, 5:45 p.m.

Women's Tennis

Carnegie Mellon Invitational
at Carnegie Mellon
Sept. 12, 1 p.m.

Men's Tennis

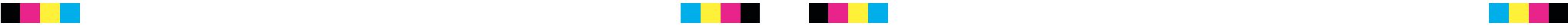
Carnegie Mellon Invitational
at Carnegie Mellon
Sept. 12, 1 p.m.

Women's Soccer

Wash. & Jeff.
at Carnegie Mellon
Sept. 12, 7 p.m.

Women's Volleyball

Thomas More
at Bethany, W.Va.
Sept. 13, 4 p.m.



Sports

Women’s soccer team scores again

ZEKE ROSENBERG
Staffwriter

The Carnegie Mellon Women’s Soccer team took the field to begin this year with a 2–0 shutout win over the Salisbury University Seagulls on Saturday.

The game was the first in the 2014 Doubletree Tartan Cup. After a scoreless first half, Carnegie Mellon scored two goals in the second half to seal their third straight victory.

A very strong performance from Carnegie Mellon prevented Salisbury from generating more than one chance, which resulted in a save by sophomore goalkeeper, Katie Liston.

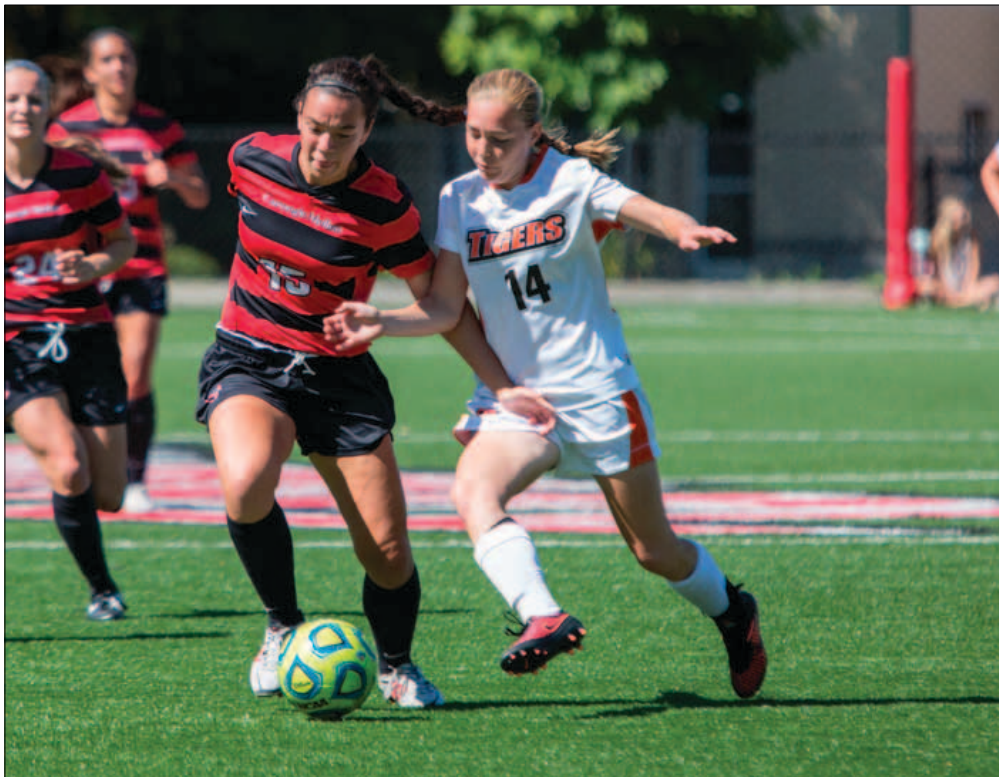
Goals from junior midfielder Carson Quiros and first-year midfielder Haili Adams were key for the win.

The first half was relatively slow paced with Carnegie Mellon dominating the flow of play. Only three shots were put on goal in the first half, but the 0–0 score line was not reflective of the level of play.

When Quiros broke through for Carnegie Mellon less than 10 minutes into the second half, it was all downhill from there for the Seagulls. When junior forward Alli McGugan perfectly set up Adams for Carnegie Mellon’s second goal of the match, there appeared no way back for Salisbury, and the match ended at 2–0.

Carnegie Mellon won a second game by the same score again Sunday morning against the Rochester Institute of Technology Tigers. Carnegie Mellon was playing strong attacking football from the beginning, with Adams scoring her second goal in as many games in the fourth minute, as she put in her own rebound.

Senior forward Sevina Reid scored another midway through the first half, and that began another 2–0 shutout. Carnegie Mellon was not as impressive in the second half as Rochester had a few chances



Top: Sophomore forward Megan Bartoshuk avoids defenders as she attempts to score. **Bottom:** First-year forward Sienna Stritter takes control of the ball.

es to score, but they converted none of them and Carnegie Mellon held a second straight team goalless. After dominating

the Tartan Cup, the women’s soccer team is looking forward to facing off against the Washington and Jefferson

Presidents in a typical season-long game. The match is Friday at 7 p.m.

NFL predictions: Super Bowl winner

ZEKE ROSENBERG
Staffwriter

The tiny 16-game sample and parity of the NFL make for some fun randomness during the season, but each season there is only a handful of true contenders. Based on the level of talent on these four teams, I believe one of them will be holding the Vince Lombardi Trophy by the season’s end.

Denver Broncos

The Denver Broncos were a very good team last season. Despite some of the feeling that they beat up on an easy AFC and cruised to the Super Bowl, they probably fielded the best offense in the history of the league. Even in a high-scoring league, they still managed to lead the field by a comfortable margin. The only players of note they lost from that offense were receiver Eric Decker and running back Knowshon Moreno. Decker was a product of quarterback Peyton Manning’s unbelievable season, rather than a cause. Receiver Emmanuel Sanders has been productive for years in the Steelers offense and should replace Decker just fine. Considering the rest of his career, Moreno was also only productive due to Manning, and running back Montee Ball should fill the gap there after an adequately solid season last year.

The defense, on the other hand, was atrocious last year. The front seven missed linebacker Von Miller during his suspension at the beginning of the year and injury at the end of it. This team had some solid players, but no one truly good. Linebacker Danny Trevathan is out for the season, but the Broncos more than made up for him in the off-season. Defensive end DeMarcus Ware is a hall-of-fame-level pass rusher and, should be productive for the

Broncos even at the end of his career. Cornerback Aqib Talib was very good for the Patriots last year, and will probably continue to be so. The Broncos already spun the scoreboard, and with a true NFL-level defense this year, other teams should watch out.

San Francisco 49ers

The San Francisco 49ers are tough to make a Super Bowl case for. They lost their two best pass rushers in linebackers NaVorro Bowman and Aldon Smith with no replacements for at least half the season.

Some people think safety Donte Whitner is good (for some reason), and he left. The offense was not very good last year, and running back Frank Gore is not getting any younger. However, while the weakened pass rush will hurt, the 49ers got a huge boost in the secondary, replacing big hitter Whitner with a much better football player, safety T.J. Ward. The 49ers always had depth at linebacker, and while they are currently thin, Patrick Willis is enough to make the unit productive by himself. This defense was mediocre last season too, finishing 13th in defensive DVOA, according to Football Outsiders. They might be a little better than that this year, because they were docked mostly for strength of schedule rather than lack of production.

The offense, however, will be fairly dominant. Quarterback Colin Kaepernick will continue to improve as both a passer and a runner, as his arm strength and athleticism make him a force to be reckoned with.

A whole season of wide receiver Michael Crabtree will be a huge help, and Stevie Johnson was a very smart signing as a third wide

See **CONTENTERS**, A9

SPORTS BRIEFS

Football

The Tartans traveled to Case Western Reserve University on Saturday to kick off their 2014 football season. The game marked the first time the rivals had met as new affiliate members of the Presidents Athletic Conference (PAC).

Case Western crushed any good feelings Carnegie Mellon had coming into the game, as they dominated both sides of the ball in route to a 30–0 victory. The stat line tells the true extent of the beatdown, with the Spartans accounting for over 300 more offensive yards than the Tartans.

The Spartans were particularly effective on third downs, converting 54 percent of their attempts while holding Carnegie Mellon to only a 31 percent success rate. First-year quarterback Bryan Jangro was a disappointment in his first meaningful start for the Tartans, completing 19 of 34 passes for only 149 yards with no touchdowns.

Jangro was also the source of the only Carnegie Mellon turnover with a fumble at the start of the fourth quarter. The Tartans have a bye week to regroup and will face off against Washington & Jefferson College on Sept. 20.

Men’s Soccer

The Carnegie Mellon men’s soccer team traveled to Hiram, Ohio over the weekend to participate in the Hiram Tournament.

On Friday, the Tartans faced off against Capital for the right to play in the championship game the next day.

After letting in an early goal, Carnegie Mellon rebounded with goals at the end of the first half and halfway through the second half by junior forward and midfielder Dimitrije Slavkovic and senior midfielder Scott Gerfen, respectively.

Slavkovic tipped in a rebound off the post stemming from senior Mark Nicholas’s shot on goal. Gerfen scored in a similar fashion after senior Jakob Rohwer’s shot was deflected away by the Capital goalkeeper.

On Saturday, the Tartans played the host Hiram College in the championship match. This time, Carnegie Mellon struck first with junior midfielder Connor Webb’s 26th-minute deflection off of Rohwer’s free kick.

The Tartans put the game out of reach with Slavkovic’s second goal of the tournament, this time coming from a long outlet pass by sophomore Tristan Lockwood to beat the defense.

Hiram tried a comeback with a 69th-minute goal, but was unable to overcome the original two-goal deficit. The Tartans next play at Geneva College on Wednesday.

Men’s Tennis

The Tartans men’s tennis team opened up its season on a high note with a 7–2 victory over Allegheny College in the Nancy J. Heath Tournament.

The team was scheduled to start its season earlier in the day against Grove City College, but that match was canceled. Carnegie Mellon fell in

a hole early, trailing 2–1 after doubles play with only senior Will Duncan and first year Edward Ang winning their match.

These would be the last points the Tartans surrendered as they went 6–0 in singles play and cruised to the easy victory. Sophomores Kunal Wadwani, Kenny Zheng, and Kiril Kirkov all won in straight sets along with Duncan.

The Tartans will next compete in their home invitational starting Friday through Sunday.

Women’s Golf

In their first event as an NCAA member, the Carnegie Mellon women’s golf team competed at the Westminster Invite on Saturday. Playing at New Castle Country Club, the Tartans placed second with a team score of 367, led by first-year Robin Tan’s 84, who had the second-best individual round of the tournament.

Fellow first-year Summer Kitahara hit an 86 over the 18 holes, which was good enough to place her third overall.

First-years Emma Hoskins and Frances Hughes made up the rest of the inaugural squad, carding a 91 and a 106, respectively.

The Tartans tee off next on Tuesday at the Grove City Invitational.

SPORTS COMMENTARY

Steelers’ season kicks off



Courtesy of Wikimedia Commons

CARL GLAZER
Senior Staffwriter

Yesterday, the Pittsburgh Steelers took on the Johnny Footballs, also known as the Cleveland Browns, to open their 2014 campaign. After back-to-back disappointing 8–8 finishes, the Steelers have hopefully finished the growing pains stemming from their recent major roster turnovers. Previously known as a veteran defense with an aging offensive line, Pittsburgh has completely rebuilt its front seven on defense and focused on offensive talent in the draft,

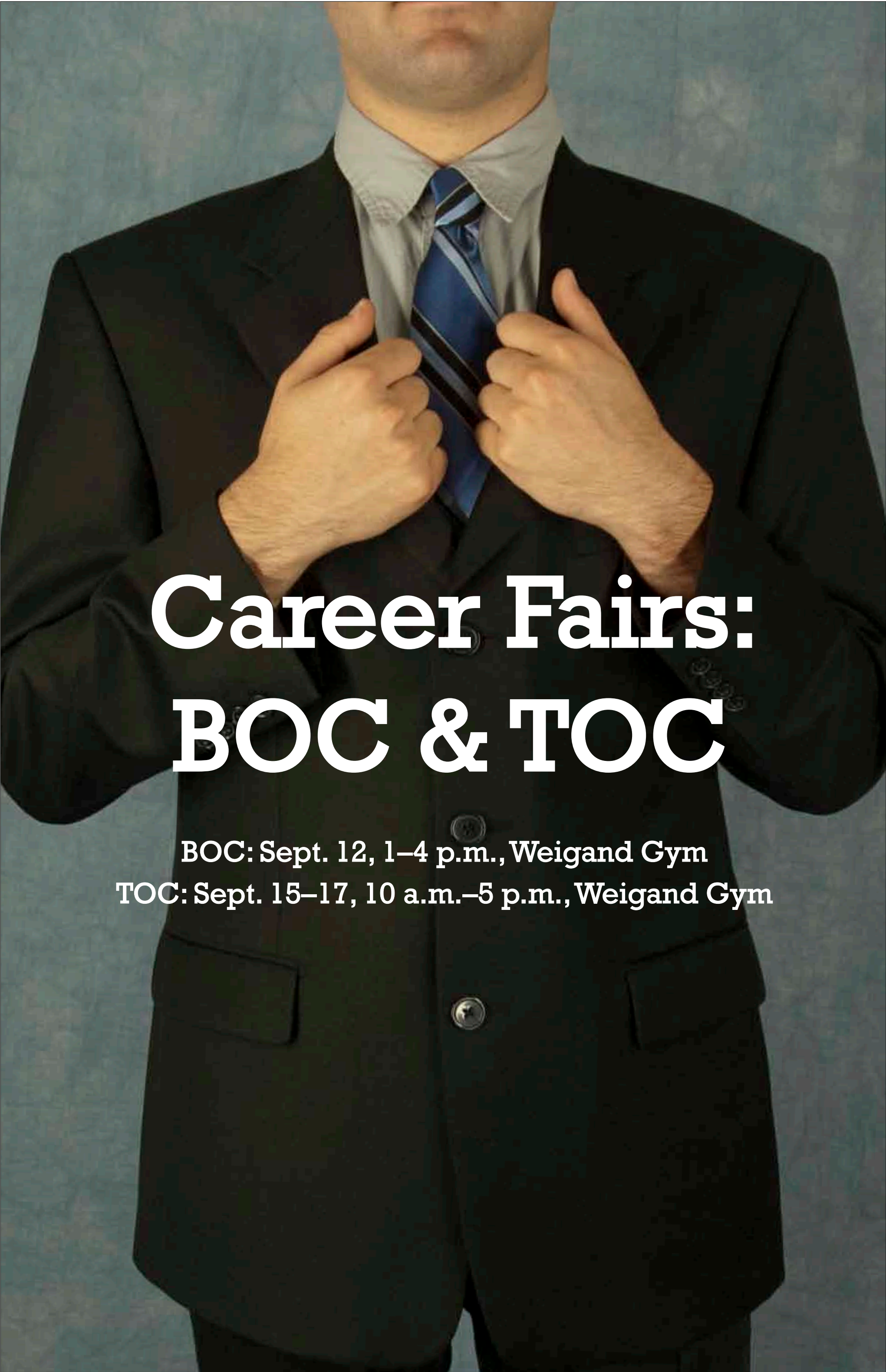
resulting in a young, energetic team hoping to reverse old fortunes.

The biggest youth movement has come in the linebacking core with back-to-back first round picks Jarvis Jones and Ryan Shazier leading the rebuilt unit. Shazier has exceeded all expectations in training camp and is already garnering defensive rookie-of-the-year buzz before taking a single meaningful snap. Jones showed flashes of his pass rush potential last year as he grew into the starting role, but is looking to avoid the sophomore slump

and step up his pressure.

Another big switch is the replacement of 34-year-old safety Ryan Clark with former Carolina Panther Mike Mitchell, who is entering his prime in his sixth season. Several of the Steelers’ issues came from the safety position last year, as both Clark and Troy Polamalu appeared to have lost a step, but attacked with the same aggressiveness they had in prior years. This risk-taking approach by both the players and defensive coordinator Dick LeBeau resulted in more

See **STEELERS**, A9



Career Fairs: BOC & TOC

BOC: Sept. 12, 1–4 p.m., Weigand Gym
TOC: Sept. 15–17, 10 a.m.–5 p.m., Weigand Gym

An inside look at the organization behind the TOC

NIVEDITA CHOPRA
Asst. Copy Manager

Did you know that the Technical Opportunities Conference (TOC) is almost completely organized and managed by Carnegie Mellon students?

The Tartan took an inside look into the efforts that go into putting together this popular career fair, which is crucial in helping students network with various companies, and ultimately finding the right job.

Planning for the TOC begins in the spring semester. “It starts off with the previous year’s committee selecting two

directors,” said Arushi Chawla, one of the directors of the TOC committee and a senior economics and electrical and computer engineering double major.

Erin Persson, a junior civil and environmental engineering and engineering and public policy double major, is the second director.

“After that, we send out an application to all Society of Women Engineers (SWE) members, since SWE and the College of Engineering collaborate on putting together the TOC,” Chawla said.

After a rigorous interview process, about ten committee members are selected and

assigned to one of four teams — corporate relations, public relations, human resources, and operations.

These teams work on different timelines based on their function. The corporate relations team begins reaching out to companies at the end of the spring semester.

They work throughout the summer to discuss logistics with each company’s recruiting team, in order to get all interested companies registered by an early August deadline.

Once the fall semester begins, the remaining teams take over. Public relations is responsible for publicizing the event, which involves putting

up posters, talking to media, and generating awareness about the TOC.

“It’s kind of like explaining what the TOC is and recommending that freshmen attend for the experience,” said Patricia Pan, a member of the TOC public relations team, and a sophomore chemical engineering and biomedical engineering double major.

The human resources team within the TOC committee is responsible for recruiting and managing students volunteers who help out during the event.

Before the TOC opens to students, these volunteers help the company recruiters with parking, registration, and

setup for their booths.

Volunteers also help with any issues that may arise during the day and tear down at the end of the day.

During the event itself, the operations team is responsible for ensuring that everything runs smoothly.

Before the TOC, the team ensures that all the logistics are in place, including parking, catering, bag check-in, and other things.

The team also handles issues that arise during the event, like non-functional equipment at booths, and delayed arrivals of packages mailed to Carnegie Mellon by the companies, among others.

Pulling off an event of this magnitude involves a great deal of careful planning, and long hours put in by the TOC committee.

With the event spanning three days (Monday, Tuesday, and Wednesday) this year, rather than the usual two days, their work has increased a great deal, due to the need to spread awareness about this schedule change, and to coordinate an extra day of the career fair.

However, their well-established teams and procedures are sure to be effective in tackling these challenges, and providing students with a successful career fair next week.



At career fairs, it’s not too early to search for dream job

NIVEDITA CHOPRA
Asst. Copy Manager

If you walk into the University Center over the next two weeks in your usual campus clothing, you may feel out of place amongst an exceptionally well-dressed crowd, the likes of which are rarely seen on campus outside of the Tepper School of Business. It’s that time of year again: various companies are coming to campus for the Business Opportunities Conference (BOC) and Technical Opportunities Conference (TOC). The BOC will take place on Sept. 12 from 1–4 p.m. in Wiegand Gym while the TOC will take place from Sept. 15–17 between the hours of 10 a.m. and 5 p.m. each day in the gym.

If you’re an underclassman, chances are that you’re not going to the career fairs. Perhaps, you intended to go, but are now having second thoughts, given the number of jobs that go to upperclassmen.

On the other hand, you may be going, but mainly for the swag — free stuff, for the uninitiated. Here are some better reasons to go to the upcoming fairs as an underclassman.

Nothing to lose

Take a moment to sit back and think about your dream job. I bet there will be at least one company at the BOC and TOC where you can get that job, or do something related that’s equally exciting.

This semester’s fairs are two of a select number of events at which you’ll have absolutely nothing to lose by talking to recruiters. Your

passion may even impress them enough to land you that dream summer job! You’ll never know if you don’t take the plunge.

Preparation for next fairs

If you’re firmly convinced that there’s no way that the company of your choice will hire a first-year or sophomore, here’s a more practical reason to go to the career fairs.

Going to the fairs this year is good preparation for your following years at Carnegie Mellon.

Attending this semester will allow you to feel what it’s like, so that you know what to expect as an upperclassman. Simply walk up to the company that you’re eyeing for a job in the future, and chat with the recruiter.

Ask about the company’s required qualifications and interview process, so that you know what they’re looking for and can be better prepared for the following year, when you’re in the running for a job there.

Small booths hold much opportunity

While you’re at it, check out some of the smaller booths that none of the upperclassmen are going to. Chatting with the recruiters there is less stressful — sometimes even fun — and can definitely boost your confidence.

And remember, they’re hiring too. So if they offer any opportunities you’re interested in, go for it! The odds of getting that job are substantially higher and the company probably pays more than traditional summer employers.

So, hunt out your nicest formal clothes and be prepared to join the crowd of well-dressed students at the upcoming career fairs. Draft a quick résumé — or update an existing one you have — and print out a few dozen copies. Make a name tag, be sure to dress nicely, and get ready to go!

Editor’s note: This article was run in a previous issue. It has been edited to fit in the space available.



Career fairs prompt students to wonder: start-up or big firm?

ROHAN VARMA
Asst. SciTech Editor

With the Technical Opportunities Conference just around the corner, Weigand Gym will soon be filled with recruiters and students from various technical majors.

As college students applying for internships and jobs, we often focus on the immediate problem: secure an offer letter. What we don’t usually plan for is the good, yet stressful, problem that sometimes follows: multiple companies want you to be a part of their team, but which one do you pick? While there are many factors that go into choosing what place you will eventually call your home as an intern or full-time employee, the main problem that I faced this summer was simple: whether to choose a small startup or a mid- to large-sized company.

This dichotomy is relevant whether you receive multiple offer letters, or are simply picking which companies you would like to apply to in the first place. After conferring with peers who had experiences with both types of companies, I ended up working at an early-stage startup this summer. Based on my own internship experience, as well as the experiences of many other Carnegie Mellon students, here are some of the nexus questions you should think about when making your own decision.

Impact

While most internships are invaluable because of the experience and knowledge you gain from working with a team, you might be looking for a place to leave your mark.

As part of a smaller company, the type of impact you can have is unique. As only a first-year working at Clipmine, a startup that is changing the way that we watch videos, I worked on important projects and made decisions on the product that would actually effect end users and the company’s trajectory. This

experience was not one that I was expecting, but was extremely excited to be a part of.

Maya Rau-Murthy, a sophomore computer science and robotics double major who interned at a startup called Cloud Raxak, which is developing security protocols for the cloud, said:

“You end up having a very large impact and responsibility in the startup because there are only a couple of people working on the project. You realize that your work is actually integral in their success and that responsibility is a really exciting feeling.”

Mukund Tibrewala, also a sophomore computer science and robotics double major, interned at a 20-person startup called Transcriptic, Inc which is increasing the computation and parallelization in scientific research. Recounting his experiences, he said:

“It was really cool because I was given projects that would have been assigned to full-time employees otherwise. In addition to being exciting and substantial projects in their own right, they made me feel like I was meaningfully contributing to Transcriptic. In fact, for the final of my three projects, the engineer I was working with told me he’d been wanting to do it himself for an entire year, but never found the time.”

However, being a part of a large company does not mean you won’t be able to meaningfully contribute. Rokhini Prabhu, a senior computer science and mathematical sciences double major at Carnegie Mellon University, has interned at both Apple and Google over the last two years and was able to provide insight into what it’s like making an impact in a large company. When asked to respond to the notion that it may be harder to make an impact in a large company, she said:

“I think it depends on the work you do. I have most definitely done meaningful work at big companies even during my internships. I’d like to think of it as high risk, high gains.

Being heard might be harder in a big company compared to a startup. But when you are heard by the right people, you would have likely sparked off something big.”

“For example, if your work catches the eye of a director or [senior vice president] at a big company, then you will surely find that several teams ... are now suddenly scrambling together to work with you and make it a reality.”

Structure

One key difference between a startup and a large company is a large company’s structure, such as protocols, practices, and policies that you would find at a big company, but not necessarily at a small startup.

While these structures might hold a negative connotation, they are actually an attribute of large companies that could make your internship more enjoyable.

Prabhu said: “Over several years, these companies have iterated and built internal infrastructure that is aimed toward improving the lives of their engineers. So you don’t

have to just spend, say, 20 minutes sitting for your code to compile, because they have already found a way to parallelize their build system and make it blazingly fast. I have found in my experience that there is a lot of value and thought given toward doing things the right way and not just hacking at something to make it work — so as to satisfy the investors.”

However, the freedom that comes with a startup also has its benefits. At companies like LinkedIn, there are many long protocols that are in place and steps that have to be taken before you are able to submit code to production; these can take many days, or even weeks. In contrast, I was able to push code to production on my first day on the job, while still going through code review processes and rigorously testing it.

Anqi Cong is a junior business administration major and a computer science minor at Carnegie Mellon who has experienced life at both a large company, Unum, and a small company, Insightpool. While comparing the work



Enunice Oh/Staff Artist

Perks

This is the section where

Lists of companies to visit

Before attending fairs, visit the Career and Professional Development Center’s career fair webpages to view the companies coming to campus. Research those companies and make a list of the ones that seem to be good fits for your interests. For the companies you’re head over heels for, consider spicing up your résumé and making unique copies, rather than a general résumé, to focus on the qualities you know those companies are looking for. Hand your general résumé out to the companies you’re less interested in, but would still be happy to work for. By researching companies beforehand, you’re sure to make a better impression with recruiters. Knowing a company’s work and how you can specifically help the company will definitely make you stand out from the rest of the pack.

A portfolio for résumés

Have a handful of résumés, but don’t know what to do with them? Take a trip to the University Bookstore to pick up a portfolio. These firm folders for your papers will round out your professional look.

Not only do they look sleek, but they also ensure that you won’t have any résumé snafus, such as dropping all your papers or accidentally handing a recruiter a résumé crafted for another company. These handy folders will allow you to organize your résumés, and possibly a list of references and samples of your work if your field typically requires those elements.

Portfolios are easy to tuck under your arm and walk with, so you won’t even know it’s there.

A water bottle and food

Career fairs can become packed and hectic. To give yourself some relief in your multiple layers of clothing, bring a water bottle. Take a drink if you’re feeling hot or overwhelmed for refreshing relief.

Staying hydrated will ensure that you are focused before you visit the companies that potentially hold your dream jobs. Before the fair, also make sure to eat. Sometimes, you may find yourself waiting in unexpectedly long lines, which could cut into time allotted for lunch after the fair. Even if the fair isn’t crowded, it’s always better to be overprepared rather than unprepared.

The right attitude

Remember that you’re at the career fair to land a job or internship. Act that way. Approach all recruiters as if you want nothing more than to work for their company. Greet them enthusiastically and shake their hand firmly.

Show them what qualifies you for a position at their company through an already prepared speech, but be sure to be flexible in what you’ve prepared if the recruiter has other plans for your conversation. Be ready to answer some tough questions, and don’t break a sweat if you’re not able to adequately answer one. Answer it to the best of your ability and get ready for the next question. Ask the recruiter some questions yourself to show your interest and ensure that a position at the business is something you truly want to pursue. Thank the recruiter at the end of your conversation and follow up with an email after.

larger companies steal the show. Working at a startup, there weren’t many perks outside of how rewarding the work itself felt.

However, this is not the case at a big company.

Tian Jin, a sophomore computer science major at Carnegie Mellon, interned at Facebook over the summer as part of the Facebook U program. She said, “Facebook would have talks and events, and there were a lot of trips into San Francisco that they arranged. Hillary Clinton also came to speak at the Menlo Park campus, and I feel like these talks and trips wouldn’t really be offered at a startup.”

Additionally, large companies usually have a selection of free restaurants to eat at alongside all the free food at the micro-kitchens located throughout their campuses. This is not to say that I didn’t raid my company’s kitchen every week, but the options were no competition to the Googles and Facebooks of the world.

Other than just food and cool events, large companies also have great amenities for their employees. Cong said, “big companies have the resources. You have the gym on campus, the cafeteria, free ice cream, your own cubicle, company-issued laptop, dual monitors, and pay like crazy. But in exchange, bureaucracy.”

All in all, there is not a definitive, one-size-fits-all answer to the dilemma of choosing between a startup and larger company.

To choose, look at your options and see what aligns with your interests and goals. All this being said, whether you go with a five-person company working in an incubator, or a 2,000 person company where you are surrounded by free food, your internship will likely be as good as you make it.

Editor’s note: While the TOC typically attracts computer science, engineering, and science majors, according to its website, the conference is open to students of all majors.

FRIDAY, SEPTEMBER 12

Business Opportunities Conference 1–4 p.m. in Wiegand Gym

Alcoa	F1, F2	Erie Insurance	H5	MUFG	D3
AQR Capital Management	B1	EY	E5	NetSuite	H3
BNY Mellon	G5	General Mills	C1, C2	The PNC Financial Services Group	A2, A3
The Boeing Company	D1, D2	IBM Corporation	J1, J2, J3	Pricewaterhouse Coopers	B5
Burger King Corporation	C4	ICAP	C3	Procter & Gamble	E3, E4
Chrysler Group, LLC	G3, G4	Infosys Limited	F4	SDLC Partners	E1
Constellation	H2	INSIGHT2PROFIT	A1	Unilever	B3, B4
Dean & Company	G2	KPMG LLP	B2	UPMC	H4
Deloitte Consulting	J5	M&T Bank	D5		
Epic	A4	McMaster-Carr Supply Company	J4		

Editor's Note: Subject to change through Sept. 10. Designations following companies are booth locations.

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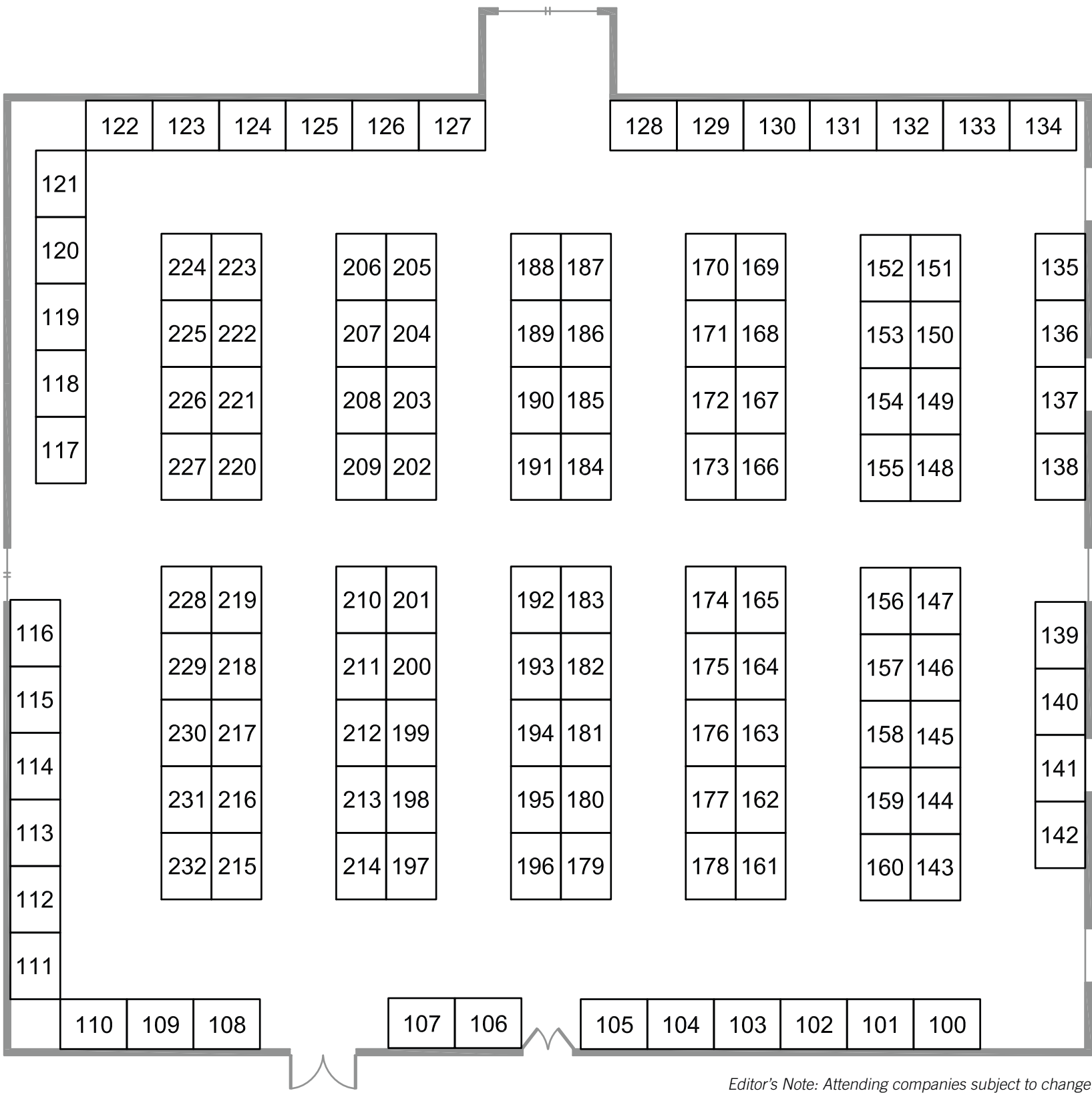
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MONDAY, SEPTEMBER 15

Technical Opportunities Conference

10 a.m.–5 p.m. in Wiegand Gym



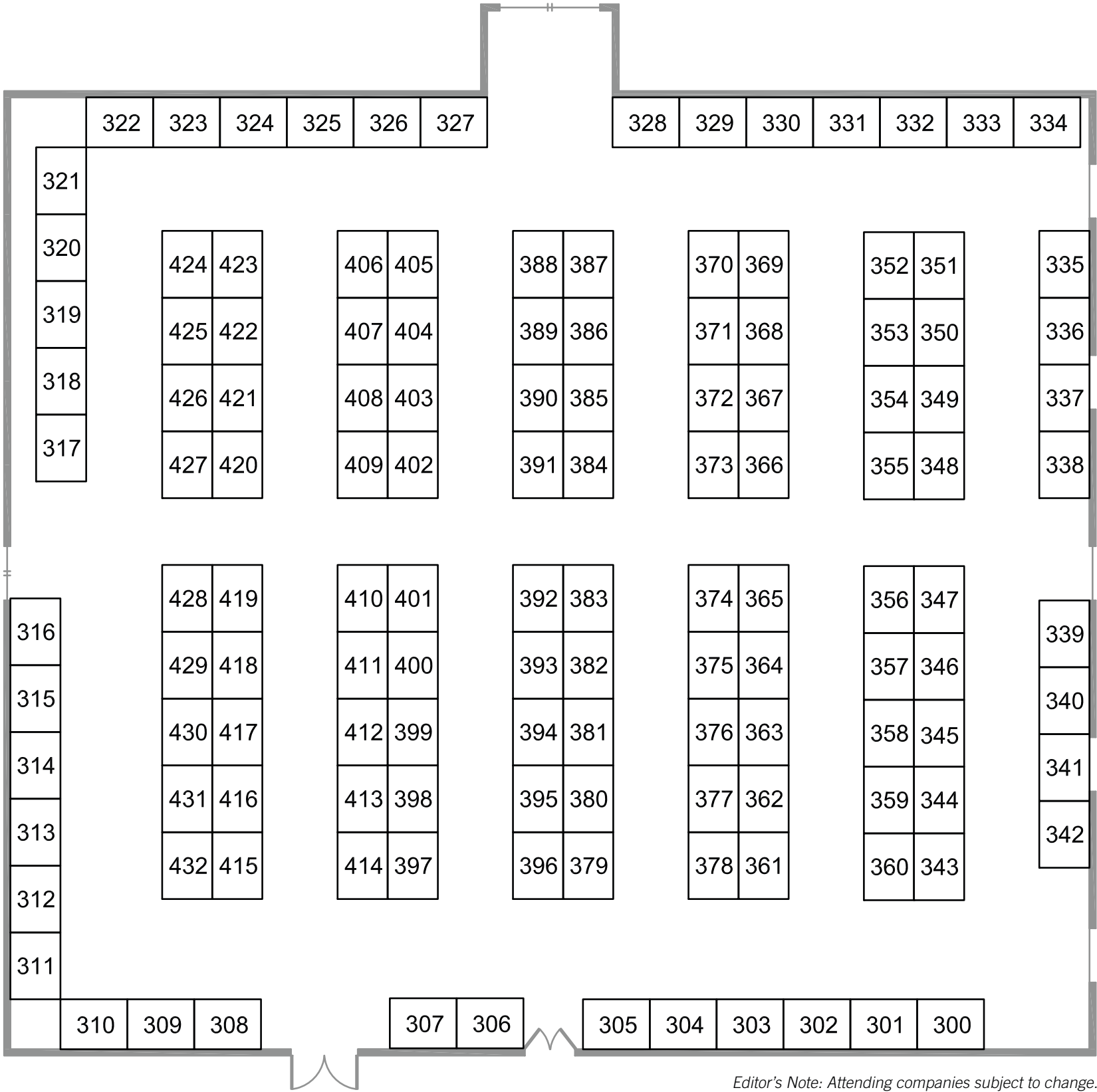
Editor's Note: Attending companies subject to change.

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TUESDAY, SEPTEMBER 16

Technical Opportunities Conference 10 a.m.–5 p.m. in Wiegand Gym



Editor's Note: Attending companies subject to change.

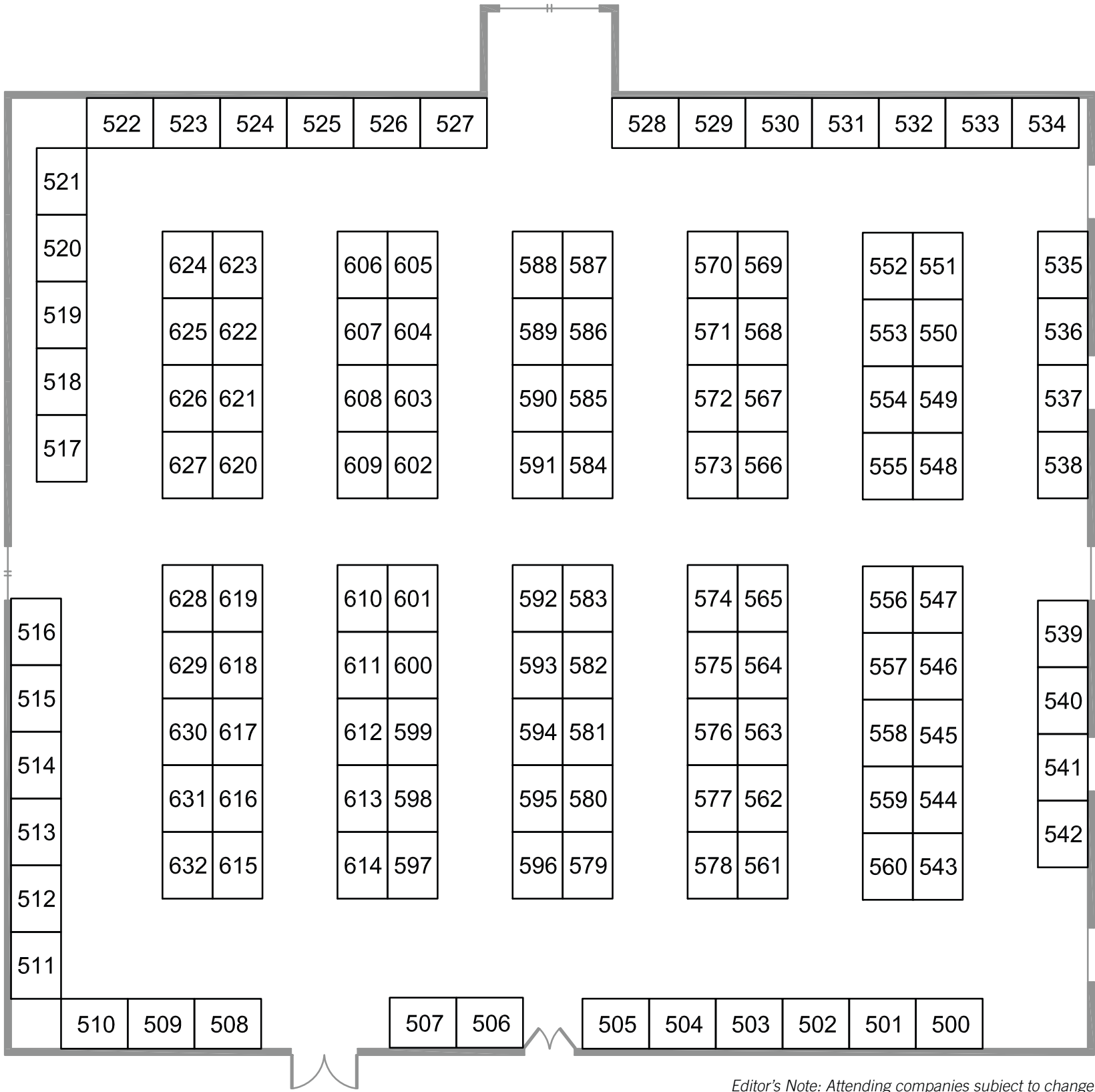
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WEDNESDAY, SEPTEMBER 17

Technical Opportunities Conference

10 a.m.–5 p.m. in Wiegand Gym



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...diversions

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Death From Above 1979 returns

Physical World expands on dance-punk duo's unique sound

Dance-punk duo Death from Above 1979 released their long-awaited sophomore effort, *The Physical World*, for free streaming on iTunes last Tuesday — a full week before its Sept. 9 release — and it's the perfect soundtrack for punching holes in your wall, a night of sweaty debauchery, cutting lanes while speeding down a highway during a torrential downpour, or all three together. In short: it's exactly what fans want and expect from Death from Above (DFA) 1979.

10 years ago, DFA 1979 released their debut album *You're a Woman, I'm a Machine* and promptly kicked the entire music world right in the gonads. The record explodes into your eardrums with Jesse Keeler's blistering-yet-groovy and heavily distorted bass riffs and Sebastien Grainger's crashing drums and howling voice. The duo gave a million teenage bands inspiration to start making noise in the basement and had the whole industry wondering what would come next.

But then, in 2006, Keeler posted on the band's website that DFA 1979 was no more, and the two musicians explored other projects — Keeler is one half of electronic duo MSTRKRFT, and Grainger released a solo album, amongst other collaborations.

Now, after a surprise announcement over the summer that came tied with the release of the first single, "Trainwreck 1979," *Physical World* is finally here, and it appears that those 10 years didn't go to waste.

Grainger sings on "Right On, Frankenstein" that nothing's new and it's just the same old song with a different tune, but on *Physical World* DFA 1979 pushes their tried-and-true sound into new territory,

and the result is an album that has the same sexy, dirty grit fans initially fell in love with but is more musically complex.

The riffs are more diverse and intricate this time around; the rhythms twist and turn; the tempos change on a dime — everything that was lacking in *You're A Woman, I'm A Machine* is here on *Physical World*.

The album opens with the grooving "Cheap Talk" before diving straight into the ferocious "Right On, Frankenstein," a roller-coaster ride that ends in a spiraling bass coda.

"Virgins" is a filthy stomp across innocence, with snarling lines like, "there's nothing sacred to me/I lost it in the backseat."

"White Is Red," about a feuding and murderous couple, explores narrative storytelling in the lyrics, and is another example of new territories toward which the duo have pushed themselves.

The album begins to lose steam near the finish line — "Gemini" feels a bit like a rehash of previous album elements, and is one of the few instances of DFA 1979 falling back into their old bad habits on *Physical World*.

Concerning the reason for the new album, Grainger told music magazine NME that "No matter what Jesse and I do, on whatever scale of success it's sat on, there's always some kind of reference to Death from Above ... So we're putting out a Death from Above record and if the press is like, 'It's not what we expected,' or however they react to it, it's like 'Well, you've been f***ing asking for it.'"

It certainly isn't what I expected, because the general rule of thumb for a new album after a 10-year hiatus is that it's an embarrassing attempt to recapture a creative spark that likely died a long time ago. Instead, DFA 1979 returned in full form with new ideas to expand their sound. Instead of sounding like an aged copy of *You're A Woman, I'm A Machine*, *Physical World* sounds like it's 2006 and they never even left.

Joey Peiser | Pillbox Editor

Sebastien Grainger's howling voice and crashing drums provide the backbone of Death from Above 1979's unique sound.

Advice for awkward people

About swiping right coming back to haunt you

Dear Evan,

I've been chatting with a guy I matched with on Tinder for the past couple of weeks, and it becomes clearer with every real conversation that I can't stand him — but I can't get up the nerve to unmatch and block him. Then he asked me out on a dinner date, and out of stupidity, I said yes — I haven't been on a date in over a year, and this has been my only chance. However, I want to make sure this is the last date we'll ever have, too. What should I do?

**Regrettably yours,
Without an Inch of Mettle,
Pluck**

Dear WIMP,

You need to make the date the oddest, or the most horrifying, experience of this guy's life. You obviously don't have to do both of these, but here are some fine suggestions on how to make this an awful date:

Wear bright colors — red on orange on yellow is preferable.

As soon as you sit down at your table: "Oh, god, did I just sit on something? Did you hear that squeak?" When he says no, look relieved and say, "Great. Do you know where the bathroom is? I've been holding in this huge dump."

When you get back, interrupt his attempt at normal conversation with, "I like to tell this to people on the first date, just in case we move in together or get married: I have a history of constantly changing paraphilias, kicking in my sleep, and chronic explosive diarrhea. So I wouldn't go use the bathroom while we're here."

Ask the waiter (call him *garçon*) if you can order a plate of uncooked bean sprouts. If he says no, insult him (if you have the guts) and order a meat-only dish.

If your date is still there when it's time for the check, say you have to use the bathroom again — but just leave the restaurant. Make sure you drove yourself there.

If you find the experience of ruining this date immensely rewarding, I suggest you follow *fuckyeahconnetinders.tumblr.com*, where Tartan alumna Connie Chan "approaches 99 percent of matches with the intent of trolling."

**Or just get off Tinder and meet people the old-fashioned way,
Evan Kahn**

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



Photo courtesy of Chris Trewin via Flickr

Maroon 5 remains relevant and danceable

Group’s latest, *V*, features guest collaborations, funky grooves, and sexual metaphors

Two years after the release of *Overexposed*, Maroon 5 debuted their fifth album, *V*, on Tuesday. Since the band’s first album, *Songs About Jane*, came out in 2002, the band has adopted an increasingly poppy sound, and *V* certainly follows that trend.

Here’s the verdict on this album in a nutshell: if you like pop music, you will like *V*. If you like Maroon 5, you will like *V*. If you like to dance, you will like *V*. If you like heartfelt lyrics, you will like *V*. If you are a fan of the band’s first CD and have been giving them flack ever since their second album for “selling out,” you will probably not like *V*.

Before the review of this CD, let’s get a few things out in the open. Full disclosure, I am a huge fan of Maroon 5, so is this review biased? Maybe. Consider it an expert opinion.

That being said, yes, it’s true that *Songs About Jane* was a great album. Yes, it’s true that the albums since *Songs About Jane* do not sound like that one did. But if they all sounded the same, Maroon 5 would be considered a one-trick pony and, quite frankly, it would be boring.

There is something to be said for a band that has been popular for 12 years, and still averages 3.75 hit singles on each album (actual calculation) and can diversify their sound enough to keep their music interesting and relevant. Say what you will about Maroon 5 betraying their true roots. If four out of their five albums do not sound like *Songs About Jane*, then maybe the original album wasn’t actually their “true sound.” Whatever you think about the band and how it has evolved, I recommend listening to *V* with an open mind.

With that said, let’s move onto the review.

Maroon 5 has always been able to promise upbeat, funky melodies that stick in your head for days and this album does not disappoint. “Sugar,” “Feelings,” and “It Was Always You” carry on this tradition, as well as singles you’ve probably already heard on the radio over the summer: “Maps,” and “Animals.” A techno/pop vibe reminiscent of disco music makes fresh the signature high-pitched threads throughout the songs that lead singer Adam Levine is famous for. These songs will have you at least tapping your foot, if not dancing around your dorm room.

V also carries on the Maroon 5 tradition of heartfelt lyrics about love and all of its ups and downs. “Animals” and “Sugar” are upbeat songs celebrating a relationship

that is going well, whereas “Unkiss Me” and “Leaving California” lament the end of a love affair. One of Maroon 5’s greatest qualities is writing relatable songs. No matter your current mood, if you have ever experienced romantic feelings for another human being, chances are you can relate to at least one of the songs on *V*.

Though it adheres to many of Maroon 5’s traditions, *V* does deviate in the writing process. The band collaborated with many other artists on the development and production of these songs, including such familiar names as Ryan Tedder, Gwen Stefani, Sia, and Nate Ruess, though Stefani is the only one whose voice is heard on the album. The input of this array of artists helped contribute to the eclectic sound of *V*. Those familiar with these artists will recognize their influence. For example, Nate Ruess of Fun. collaborated with the band in the writing of “Leaving California,” and the song does sound like the lovechild of Maroon 5 and Fun.

Even with other artists helping out on *V*, Levine still put his touch on every song. Say what you will about him or the band in general; the lead singer/guitarist helped write every single song on each of their albums, and *V* is no exception.

If you don’t listen to the entire album all the way through, here are the highlights of *V* listed in chronological order as they appear on the tracklist:

“Animals”

This song has a great beat, steamy lyrics, and classic Maroon 5 sexual metaphors. Blast it when you’re working out to get you motivated or play it when you’re with your significant other to set the mood. Either way, if you have any affinity for fun, upbeat songs, this one is a must listen.

“Leaving California”

In a much different tone than “Animals,” this song tells a story about a love lost. Soulful vocals, smooth melodies, and a sweet message make this song a go-to for anyone going through a breakup, or someone who just enjoys listening to sincerely written love songs. It is no “She Will Be Loved,” but it has similar emotions behind it.

“Feelings”

Starting out with funky guitar picks and a long, howling vocal brings listeners back a few decades and immediately gets toes tapping. Adam begs an elusive lover to leave her

boyfriend and be with him, and you almost want her to stay so that he keeps singing. Anybody looking for a good dance beat, this is your song.

“Shoot Love”

This song is only on the deluxe version of the CD, but definitely worth a listen. A moving beat and restless drums add to the anxious tone of the song, in which Adam begs a woman for mercy. Complete with the high-pitched trills typical of Maroon 5 songs and a tone that makes the listener feel as if they are listening to an action movie, this is a unique and interesting song that showcases the band’s storytelling abilities. Don’t let the extra cost of the deluxe edition deter you from this.

Overall, *V* does not disappoint. It has all the characteristics of a classic Maroon 5 CD, but with a fun, retro twist on the melodies. The collaborations paid off in a diverse mix of songs that somehow all fit into a coherent whole. Forget about your preconceived feelings toward Maroon 5 for a minute and listen to this CD with an open mind. Fans of the album will be happy to know that the band also announced tour dates, and Maroon 5 will be coming to Pittsburgh at the CONSOL Energy Center on March 13.

Jenna Bodnar | Assistant Pillbox Editor



Photo courtesy of Andy via Flickr

Adam Levine, lead singer of Maroon 5, is probably more well known for his looks, but truly has a voice to kill for.



Another September, another round of new shows

Murder, Batman, and hangovers rule television this Fall in these upcoming series

There may not be much time left before classes pick up and you find yourself burying your nose in books, even on the weekends. While you may already be looking forward to fall television series returning for their latest seasons, there are a number of new gems premiering this fall for you to escape into when you find yourself looking for a much needed break.

Gotham

"Before there was Batman, there was Gotham," according to FOX's newest television series, set to premiere on Monday, Sept. 22. This origin story about the masked crusader's home city will be told through the eyes of detective James Gordon (Ben McKenzie, known for his starring role in *The O.C.*). The detective will star alongside another detective, Harvey Bullock (Donald Lobe) and a young Bruce Wayne (David Mazouz), who will witness the death of his parents at the start of the series, sending Gotham into a spiraling plummet of crime. The show will tell the origins of the DC Comics Batman villains, like the Penguin and Joker, to reveal how Gotham became the corrupt city it is known to be today. For lovers of cop thrillers with a mix of supervillain madness, this show is one you won't want to miss.

How To Get Away with Murder

Airing three days after *Gotham* on Thursday, Sept. 25, ABC's *How To Get Away with Murder* will take viewers on what promises to be a ride full of "sex," "lies," and "murder." Viola Davis starts as Middleton Law School's Annalise Keating, a strong-willed professor who teaches Criminal Law 100, or as she calls it, *How To Get Away with Murder*. Through a series of assignments and cases, Keating will teach her students how to discredit witnesses, identify suspects, and bury the evidence that can be used against them. The show promises to be one full of scandals in a world where the stars try to uphold the law in a professional setting through law-breaking tactics, like sleeping with witnesses for information. Who knows, the show's starring students may even find themselves implicated as suspects in a murder.

Bad Judge

Unlike *How To Get Away with Murder*, NBC's *Bad Judge*, airing on Thursday, Oct. 2, will take on the law in a completely different way. Judge Rebecca Wright (Kate Walsh) promises to battle hangovers in the court room while confidently doling out justice. "Please be seated. Do it quietly. I've got a headache, and somebody get me some Gatorade," Wright complains before sleeping with a witness and whispering to her bailiff in court that she's thankful a pregnancy test isn't positive during the show's official trailer. The series will also tout a story about Wright's relationship with a young boy named Robby Shoemaker (Theodore Barnes), whose parents she sentences to prison. Their relationship will develop throughout the show, and Wright will become a mentor to the young boy, possibly allowing him to live with her. For viewers looking for a raunchy, yet friendly show, look no further. This new comedy looks like it will deliver some fantastic one-liners and a story to pull at your heartstrings.

Braden Kelner | Editor-in-Chief

Ben McKenzie, known for playing the troubled-while-gorgeous Ryan Atwood on the FOX drama *The O.C.*, will be portraying a young Jim Gordon on the upcoming FOX series, *Gotham*.



Photo courtesy of ABC Television Group via Flickr

Viola Davis, who was nominated for an Academy Award for her role in *Doubt*, will star as Annalise Keating, a Criminal Law professor amidst a world of scandal and intrigue in the upcoming ABC series, *How To Get Away with Murder*.

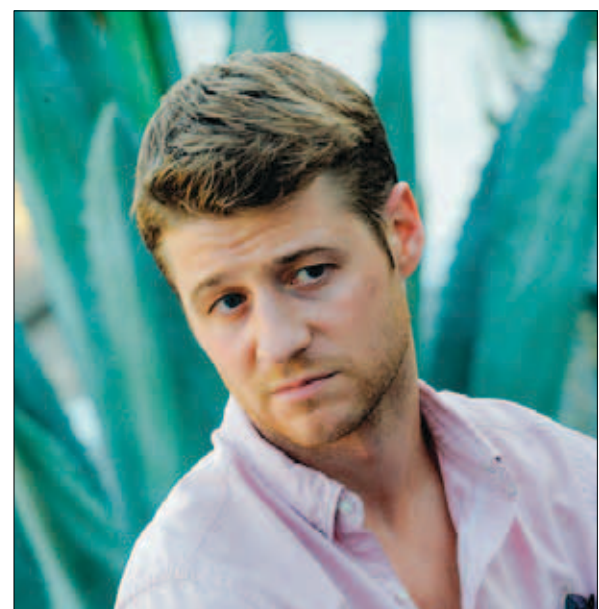


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Boyhood captures ephemeral moments of youth

Ambitious project transcends film to deliver a touching and universal portrait of adolescence

And the best movie of the year goes to...

We've all heard about *Boyhood*, written and directed by Richard Linklater (*Dazed and Confused*, the *Before* trilogy) which begins with 6-year-old boy Mason (Ellar Coltrane) and follows him through his tween and teen years, up until he hits 18. And, yes, Linklater uses the same boy, not to mention the same cast, for 12 long years.

The general consensus is that those 12 years automatically classify it as a masterpiece. Anyone who has heard of *Boyhood* usually exclaims the same things:

"It took 12 years to make this film!" "They used the same cast for 12 years, the same boy from when he was six to 18! Can you believe it?" "It was incredible! It made me so nostalgic for my childhood because I'll never get it back."

All of those things are true. And, yes, *Boyhood* was an amazing film. It'll most likely dominate this year's awards season. The scope and ambition of this project is beyond comprehension and the stakes, in retrospect, are impossibly high. What if some people die in the allotted 12 years time? Who is going to finance a film for that long? What if Ellar Coltrane turns out to be a bad actor?

Fortunately, Linklater triumphed — and what an amazing

triumph *Boyhood* turned out to be. Linklater's dangerous decision to work with the same cast for 12 years allowed him to portray youth so accurately that the film feels like a true journey through a person's life. Patricia Arquette, who plays Olivia, deserves at least three Oscars for her role as Mason's struggling-yet-steadfast mother. The performances of the entire cast transcend acting and boil down to sharing essences of actual people with the audience.

The amazing part of *Boyhood* is that it is not just a movie. It transcends the film medium because there are no plot twists, no villains, nor are there any "extraordinary" events that result in typical cinematic climax. But that's what makes it special. By giving attention to universal experiences that individuals would not ordinarily deem movie-worthy — such as going bowling with your father or waiting in line for the newest *Harry Potter* book — Linklater provides moments of realization that every one of life's moments is precious. Many of the moments in the film are genuine experiences that we have personally gone through, but usually store away as mundane or insignificant —yet those moments are essential to our own coming-of-age adventures oh-so-many years ago.

It's easy to label *Boyhood* as nostalgic, leaving us desperately hoping to relive those moments again and again. And yes, the story and the characters are so authentic that we connect our memories with those of

the film. However, the most important experience from *Boyhood* stems from Mason and his family letting go without even a second thought.

Naturally, there is no traditional plot in this movie — just story. Mason doesn't dwell on the hardships of his youth, nor does he grasp onto any glorious memories. He simply moves on. There is no significant benefit that we, the audience, get from clinging to the memories of our youth. Time and change are inevitable, elusive engines of life, so our childhood stays behind while we must grow up and move on. But that does not mean we are forced to toss away our sensibility as we get older.

Why did Linklater choose to document 12 years of someone's childhood? Why not make *Adulthood*? Or *Midlife Crisis*? Or *Old Age*? If it's just for the sake of nostalgia, then what's the point of spending 12 years on a film?

We can still nourish the sense of wonder and curiosity that made our youth so special. It's optimal to fully welcome every waking moment of our lives and to awaken the next day as a wiser, more courageous person than yesterday.

Andie Park | Staffwriter

movies in mconomy

McConomy Auditorium, University Center

Andie Park | Staffwriter

Godzilla

Friday, Sept. 12
8

Sixty years after the iconic original, in a time when lackluster reboots and sequels plague theaters, there is one that finally got it right. *Godzilla* is a powerful spectacle packed not only with glorious monsters, but with substantial human drama that pushes the story forward. The movie stays true to the creature's origins; at a nuclear plant in Japan, supervisor Joe Brody (dramatic demigod Bryan Cranston) is devastated by a nuclear disaster that destroys not only his plant but his family. Years later, he becomes obsessed by the possibility that the disaster is a cover up for something much bigger. His now grown son, Lieutenant Ford Brody (the oh-so-swoon-worthy Aaron Taylor-Johnson), reluctantly tries to get his seemingly crazy father off his wagon when they find out there actually is something beyond a nuclear conspiracy. *Godzilla* procures one of the scariest monsters in recent movie history in a tale about unstoppable forces of nature, resulting in an exhilarating moviegoing experience.

Maleficent

Saturday, Sept. 13
7

We all know the tale of Princess Aurora, also known by her street name Sleeping Beauty, who pricked her finger and was cursed to an eternal slumber, waiting for true love's kiss to break the spell. She was cursed by the evil Maleficent, but how much do we know about the sorceress behind the spell? In a modern retelling of the original 1959 Disney film *Sleeping Beauty*, *Maleficent* flips the protagonist into one of the most iconic villains of all (Maleficent, if you couldn't tell from the title) and tells the story through her dazzling green eyes. Angelina Jolie is the perfect fit as the alluring and magnetic Maleficent, with her marvelously angular cheekbones, sinister voice and enigmatically evil personality. By providing a substantial back story for its titular anti-heroine, *Maleficent* is an interesting case study of how we view villains, particularly female ones, and what constitutes a strong character who just happens to be female. If you're not into the Disney vibe, don't worry. *Maleficent* packs the punch with delicious performances and an untold fairytale that is refreshingly wonderful.

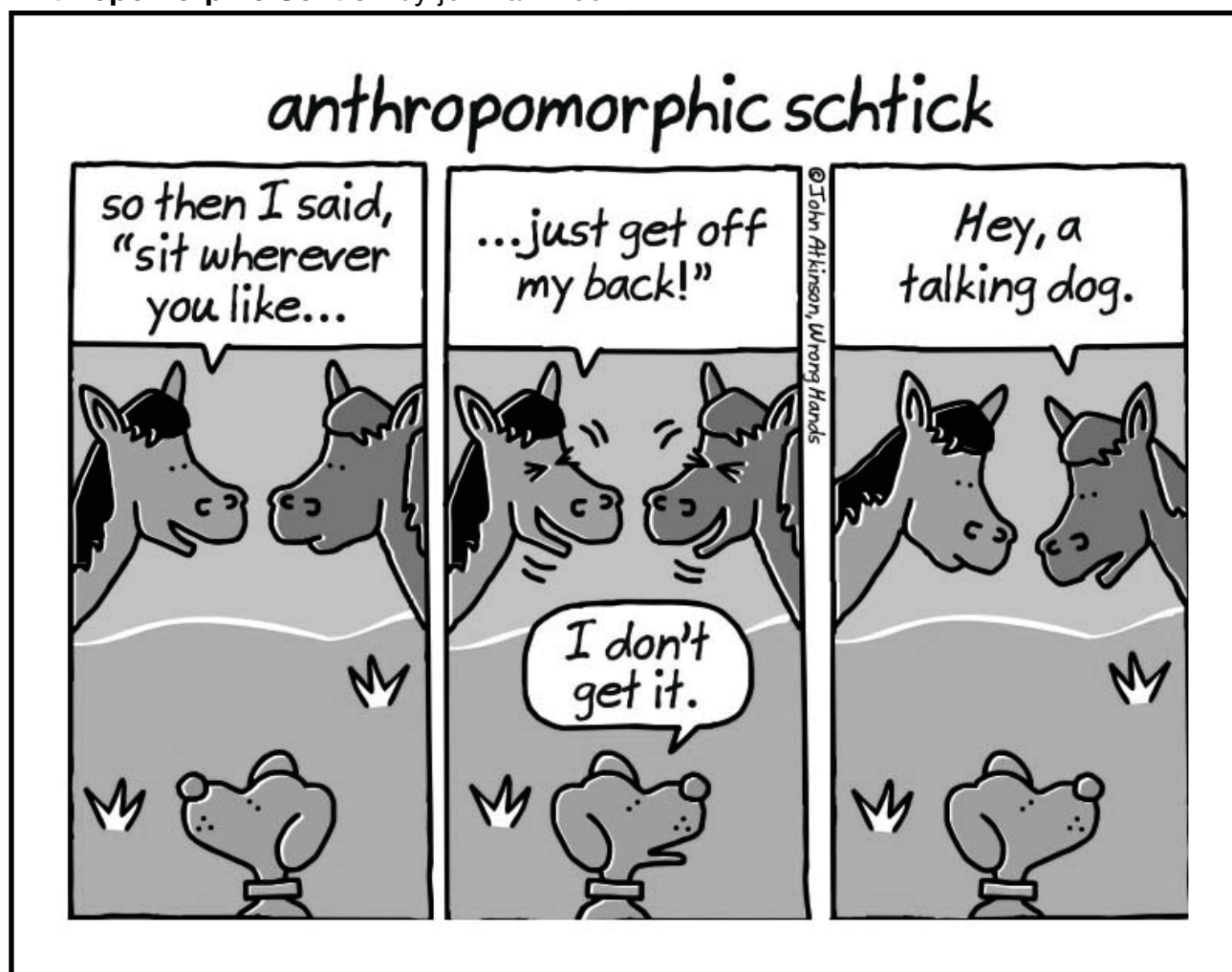




press@xkcd.com

xkcd.com

Anthropomorphic Schtick by john atkinson



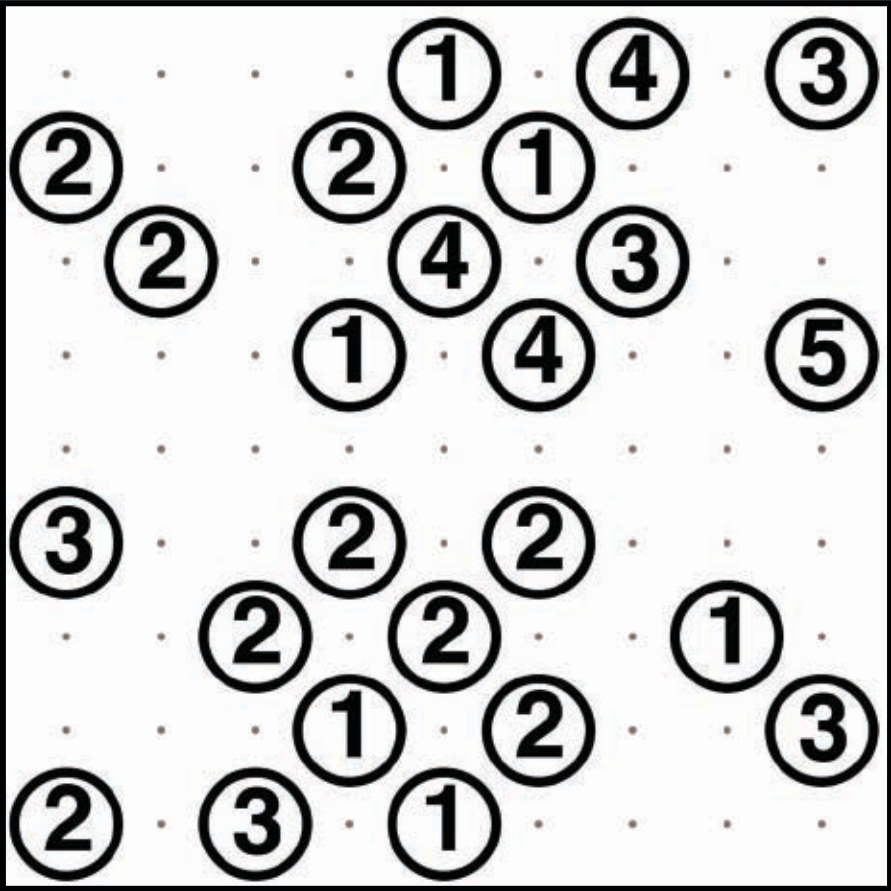
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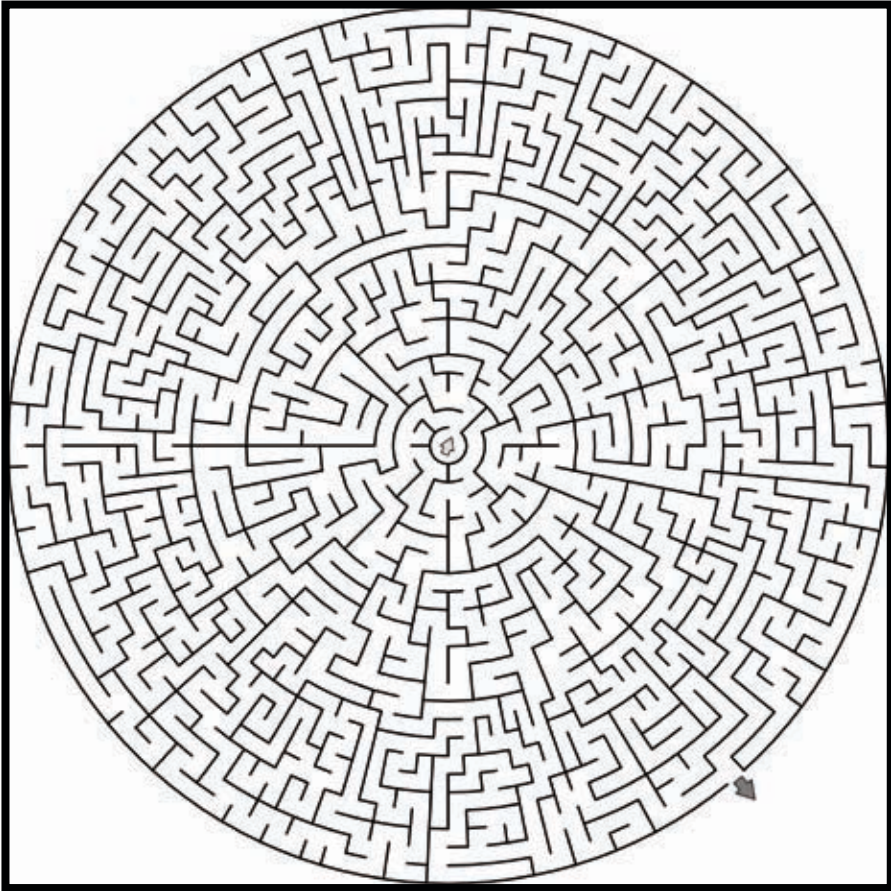
Bridges Puzzle: Tough



Bridges courtesy of www.krazydad.com

Connect the islands horizontally or vertically to form a network to reach any island from any other island. The number on each island indicates the number of outgoing bridges. Use at most two bridges between two islands.

Maze Puzzle: Challenging



Kakuro courtesy of www.krazydad.com

Start from the center arrow of the maze and find your way out to the other arrow.

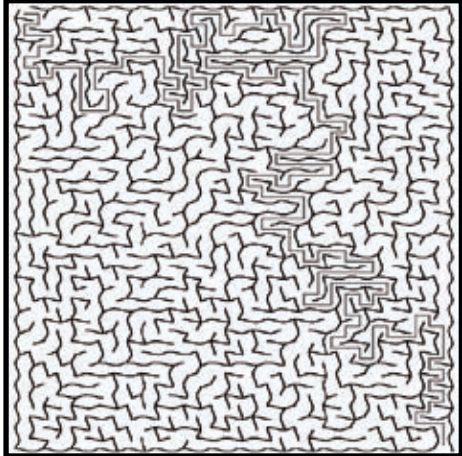
Solutions from Aug. 25

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
M	A	T	S	U		S	P	A	C	E		S	S	R					
A	A	R	O	N		H	E	I	R	S		C	H	E					
T	H	U	N	D	E	R	C	L	A	P		O	E	D					
T	S	E		E	L	I	S		B	R	O	L	L	Y					
				E	R	L	E		S	W	I	N	D	L	E				
S	A	L	T	L	A	K	E	C	I	T	Y								
L	O	T	S	A		A	A	S		X	M	A	S						
E	N	D		Y	E	A	R	N	E	D		O	N	T					
D	E	S	I		L	I	T		Y	E	N	T	A						
				P	R	E	D	O	M	I	N	A	T	E	S				
M	E	S	S	A	G	E		E	R	A	T								
A	L	P	A	C	A		M	A	A	M		R	E	G					
R	O	E		I	N	S	E	N	S	I	T	I	V	E					
S	P	A		S	C	O	R	E		S	E	V	E	R					
H	E	R		M	E	Y	E	R		M	E	A	N	T					

Crossword

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

Super Tough Difficulty



Challenging Difficulty

Horoscopes

aries

march 21–april 19

This school year is all about academics and working hard. Don't get distracted too much by social activities or you might find yourself cornered with stress.

taurus

april 20–may 20

Celebrate your little achievements. It's the little things that count. This year, reward yourself for accomplishing each step of a larger goal.

gemini

may 21–june 21

We often forget to pause and smell the roses on the side of the road. Plan some time for yoga or running in the late afternoons.

cancer

june 22–july 22

No more drama this year with the guys or girls. Last year may have been a little too much for you to handle.

leo

july 23–aug. 22

Positive thinking is an essential factor when it comes to success. Think happier thoughts and even people around you will be happier.

virgo

aug. 23–sept. 22

Let love blossom naturally. Don't be afraid this year to approach that special someone. Maybe he or she is thinking about you as well.

libra

sept. 23–oct. 22

Be prepared for awkward moments and unfortunate failures. Disappointing moments are unavoidable, but always remember to pick yourself back up. Feel the fear, but do it anyways.

scorpio

oct. 23–nov. 21

Don't forget about your friends this school year. They need you too! Try to find some extra time to spend with them and don't bury yourself with school work.

sagittarius

nov. 22–dec. 21

Calm down on the technology usage. Even though the Internet basically consume our daily lives, be sure to rest your eyes before sleeping.

capricorn

dec. 22–jan. 19

Plan ahead and make plenty of calendar reminders. This year try and be on time and on top of your schedule.

aquarius

jan. 20–feb. 18

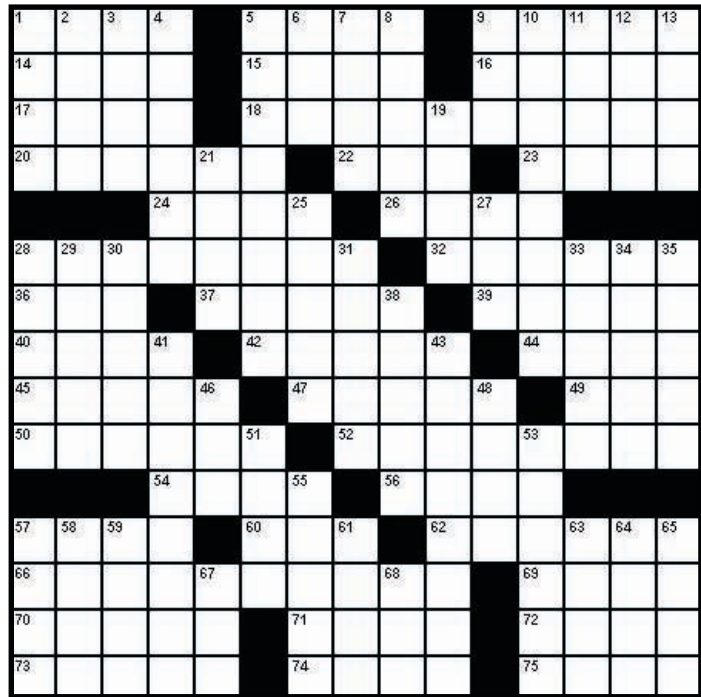
Set more realistic expectations for yourself this time around. Use your resources wisely and keep a tight schedule to keep off procrastination.

pisces

feb. 19–march 20

Get more sleep! Studies say that sleep affects your daily productivity the most, which means planning ahead so you have more time to get those eight hours of rest.

Maryyann Landlord | Comics Editor



Crossword courtesy of *BestCrosswords.com*

ACROSS

1. "Born Free" lion
5. An earth sci.
9. Singer Bonnie
14. Lounge
15. Unattractive
16. Minute Maid Park player
17. Rebuff
18. Offensive action
20. More spine-tingling
22. Penlight battery
23. Division preposition
24. Agrees tacitly
26. Former Fords
28. Raging
32. Monetary unit of Thailand
36. Polished off
37. French composer Erik
39. Contradict
40. Tobacco plug
42. Not once
44. Art ____
45. The Hilton, e.g.
47. Grain stores
49. Wee bit
50. Institution for mentally ill
52. Pulpy summer refreshment
54. Sign of injury
56. Wife of a rajah
57. Eastern nanny
60. Get it?
62. Kathmandu resident
66. Very fine pasta
69. Ladies of Sp.
70. ____ once
71. Type of market
72. Skin disorder
73. Rock
74. Actor Penn
75. Gratuity

DOWN

1. Ultimatum word
2. Solitary
3. Insult
4. Deficient in pigmentation
5. Protector
6. Silly Putty holder
7. Gymnast Korbut
8. Rotating
9. ____ Tafari (Haile Selassie)
10. Aided
11. Pack ____ (quit)
12. Horse's gait
13. Up ____ good
19. Chow
21. Ages and ages
25. Satisfies
27. Apply lightly
28. Russian retreat
29. Community spirit
30. Full of substance
31. Polite
33. Prince Valiant's wife
34. Battery type
35. Crystal-lined rock
38. Conger catcher
41. Native of Wales
43. Inhabitant of Bucharest
46. Director Jean-____ Godard
48. Unit of loudness
51. Not fem.
53. Tries to bite
55. Sailing hazards
57. Gardner and others
58. Dissolve
59. He sang about Alice
61. Vogue rival
63. Sacramento's ____ Arena
64. Slender
65. Words of understanding
67. Mineral suffix
68. Meadow



MONDAY 09.08.14

Music for the Spirit. Allegheny Center Alliance Church. 8 p.m.

Presented by the Pittsburgh Symphony Orchestra, this concert will feature the Pittsburgh Symphony Brass performing a program of works and readings exploring the spiritual nature and its influence on music. Admission is free and open to the public.

Foster the People. Stage AE. 8 p.m.

All the little kids with the pumped up kicks better run, better run, to the Foster the People show. Tickets are \$35, and can be purchased at ticketmaster.com.

TUESDAY 09.09.14

Poogie Bell. Agnes Katz Plaza. 5 p.m.

Local renowned jazz drummer Poogie Bell will be performing in Agnes Katz Plaza as part of BNY Mellon's ongoing JazzLive series. Admission is free and open to the public.

Tokyo Police Club. Altar Bar. 8 p.m.

Catch the indie alt-rockers behind hits such as "Your English is Good" and "Wait Up" at the Altar Bar, with Nevada Color playing in support. Tickets start at \$17 and can be purchased at ticketfly.com.

WEDNESDAY 09.10.14

The Used and Taking Back Sunday. Stage AE. 8 p.m.

Your middle school self would probably write a really passive aggressive, yet emotionally poetic, AIM away message about you if you were to miss out on this one. Tickets are \$28.50 and can be purchased at ticketmaster.com.

Wavves. Altar Bar. 8 p.m.

Skater slackers Wavves will be bringing a little bit of white-boy attitude as well as pop-leaning punk to Pittsburgh. Tickets start at \$16.50 and can be purchased at ticketmaster.com.

THURSDAY 09.11.14

Decolonizing the Ear: The Reverberations of Vernacular Musics in the Era of Electrical Recording. Porter 100. 4:30 p.m.

Michael Denning, professor of American Studies at Yale University, will deliver a lecture focusing on the dramatic transformations that took place in vernacular music with the birth of electrical recording and broadcasting, and how this connects to the larger history of decolonization. This event is free and open to the public.

SATURDAY 09.13.14

Pittsburgh Symphony Orchestra with Anne-Sophie Mutter. Heinz Hall. 7 p.m.

Violinist Anne-Sophie Mutter will be joining the PSO for the first official performance of the season and will be featured on the Bruch Violin Concerto. Tickets start at \$35 and can be purchased at trustarts.culturaldistrict.org.

Beatles 50th Anniversary Tribute. Benedum Center. 8 p.m.

Taking place exactly 50 years after the Beatles played the Pittsburgh Civic Arena, this tribute concert will feature artists BEATLEMANIA NOW and will give attendees a chance to relive (or experience for the first time) the 1964 concert. Tickets start at \$36.95 and can be purchased at trustarts.culturaldistrict.org.

Classifieds

Two apartments located less than a block from Walnut Street in Shadyside on Ivy Street.

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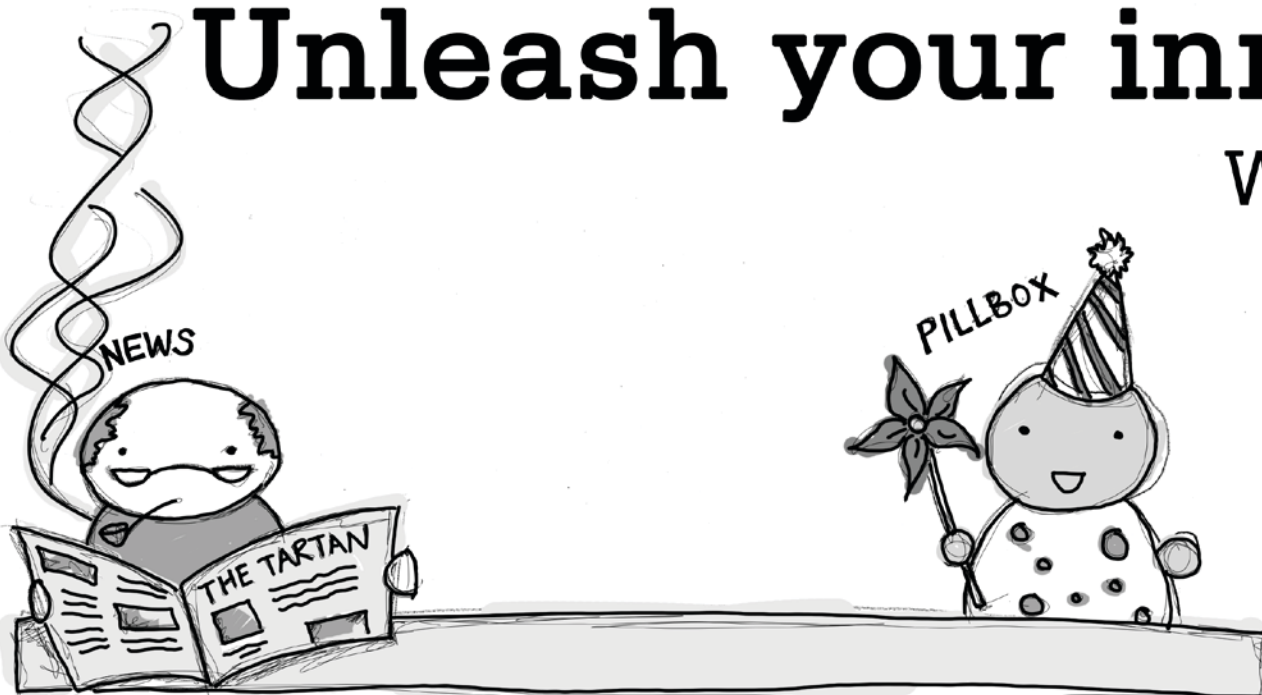
Call (412) 362-5343 or email broumont@gmail.com

SUNDAY 09.14.14

Carnegie Mellon University Philharmonic. Carnegie Music Hall. 7:30 p.m.

The evening's program will include soloist Joshua Burca on Jean Sibelius's Violin Concerto in D Minor. Tickets are \$5, but admission is free with a valid CMU ID.

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welcome back concert.



Maryann Landlord | Comics Editor

The Activities Board welcomed students back to campus on Friday, Aug. 30 with a free concert on the CFA Lawn. Indie pop bands Miniature Tigers and Nevada Color performed, and ice cream sundaes were served in between the acts.

