BRAIN Initiative has Tech connections

Earlier this month, President Obama proposed the Brain Research through Advancing Innovative Neurotechnologies Initiative (BRAIN Initiative), which is a nationwide call for research leading to the mapping of all neurons in the human brain. This is no easy task – the human brain is possibly the most complex and sophisticated machine we know. Aside from the obvious applications in medicine and neuroscience, the success of the BRAIN initiative will yield a revolution in computing and artificial intelligence; this project has the potential to link one of the hardest problems in biology to one of the hardest problems in computer science.

Research at Caltech will no doubt play a lead role in the BRAIN initiative. In fact, Caltech’s own David J. Anderson, Seymour Benzer Professor in Biology, is on the advisory board for the initiative. At a high level, Professor Anderson investigates how emotional behavior is encoded in the brain.

More specifically, his group studies the neurons that make up neuronal circuits and how these circuits function. Recently, Anderson collaborated with Caltech’s Professor Pietro Perona, Allen E. Puckett Professor of Electrical Engineering, to use computer vision algorithms to study fear, aggression, and anxiety in flies. More information about the study can be found in Anderson’s TEDxCaltech talk (ted.com).

Now the software and research developed at Caltech have been used around the world to study and map an even wider set of emotions.

Similarly, Professor Ralph Adolphs, who also presented at TEDxCaltech, focuses on neurological processes caused by social interaction. Particularly, Adolphs group studies the changes in human behavior and function in neuronal circuits during and following social cognition.

The research is applicable to discerning changes in cognition as a result of brain damage or neuropsychiatric diseases. Recently, Adolphs has explored the information filters the brain uses during social interactions and the corresponding neuronal circuit’s function. Adolphs also collaborates with several Caltech faculty members, including Antonio Rangel and Colin Camerer.

President Obama likened the BRAIN initiative to the successful Human Genome Project and Apollo Space program. 100 million dollars have been pledged to kick-start the project via NIH, NSF, and DARPA.

Current estimates show that the project will require 300 million dollars in funding per year to maintain steady progress. Compared to the European Human Brain Project and China’s Brainnetome, the US needs to speed-up and intensify research in neuronal mapping. However, a large portion of American neuro-research is related to the development of new tools and resources — the BRAIN initiative is an attempt to fill the gaps.

News briefs from around the globe

Helping readers burst out of the Caltech bubble

Need to know < 100 words about the world this week – topics sorted from good to bad by The Tech Eds

Boston Marathon shoes 120 pairs of marathoners’ shoes photographed for Boston magazine

Boy inducted into Mensa 5-year old Gus Dorman joins Mensa (high IQ society) with IQ of 147

U.S. economy grows 2.5% increase due to strongest consumer spending in two years

New U.S. bill revealed 100-dollar bill’s new design revealed for fourth change in history

Officers shot in Italy 2 military officers wounded as new Italian government is sworn in

Bird flu spreads 1st case of H7N9 bird flu outside China reported in Taiwan

Large building collapses 362 people died in the collapse of an 8-story building in Bangladesh
Food with Mannion!
Do you like eating food?
How about free food at nice restaurants?
Ever want to tell the world exactly what you think of said food?
The Tech will be beginning a new column to chronicle the foodie experiences of new writers every other week...The Catch: They’ll be going head-to-head with Tom Mannion who will be reviewing the same restaurant. If you have ever thought you were more of a gourmand than our resident master chef, now’s your chance to prove it!
Email us for a spot on the list at tech@caltech.edu

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Minutes for April 22th, 2013. Taken by Allika Walvekar

Officers present: Diego Caporale, Pushpa Neppala, Mario Zubia, Michelle Tang, Allika Walvekar, Puikai Cheng, Connor Coley

Guests: Catherine Jamshidi, Zach Rivkin, Malvika Verma, Connor Rosen

Call to Order: 10:50pm

President’s Report (Diego):

Leadership Conference took place on April 27th and despite the lack of participation, it went well. Next year we will need to make sure that there aren’t many conflicts the day of. Please join us in congratulating the new BoD: Zach Rivkin, Malvika Verma, Connor Coley, Connie Hseuh, Monica Enlow, and Michelle Tang. The official transition between the new and old BoD will happen at the 7th week of term at a transition dinner.

Officer’s Reports:

V.P. of Academic Affairs (ARC Chair: Pushpa):
The ARC is currently going through the nominations for ASCIT Teaching awards which will be held on Thursday May 23rd. Fall 2013 will feature a JPL pizza class so freshmen can receive exposure to types of JPL SURFs.

Pushpa is working with Betsy Mitchell and Cassandra to set up a survey about PE classes.

The Professor of the Month reception happened on April 25th for Gil Rafael, and it was very successful and well attended.

ESE is no longer an option for the next year, but there will still be ESE profs under GPS.

V.P. of Non-Academic Affairs (IHC Chair: Connor):

Sign ups for RevComm Chair, Interhouse Athman, Food Chair, Stewardship Chair were open last week until Monday at 5pm.

Interviews will occur soon.

Affiliated room picks are happening over the next few weeks for all the houses.

Applications for Skurves to live in Ricketts is now closed. If you would like to appeal the decision of eligibility, please contact bweir@caltech.edu to set up a meeting with Dr. Anneila Sargent, Vice President for Student Affairs.

Director of Operations (Mario):

If you are a club that would like to be represented at future Club Fairs, then please submit the paperwork found at clubs.caltech.edu, so that you can be included.

Treasurer (Puikai):

Puikai secured additional funding for ASCIT Funding from the Alumni Association.

Puikai also met with incoming treasurer, Monica, to pass on records so that you can be included.

President’s Report (Diego):

Working on a Mental Health UCC page on Donut.

If anyone has any questions or concerns about a section of the minutes please email the appropriate officer. We are happy to answer any questions.

Meeting Adjourned: 11:15
Techerland: Prefrosh and the ‘Tech Door Code

NINA BUDAeva
Staff Writer

Every Spring the tight community of Caltech undergoes a noticeable perturbation. The bubble of Techerland is put at risk of being pinched and possibly ruptured by a wave of young ambassadors from the outside world.

In April, hundreds of Prefrosh flock to campus for Prefrosh Weekend. They bring with them the aroma of high school hallways, scanntron sheets, and high-ranked sports teams. The bright orange lanyards make them easy to spot, but the seasoned Techer can distinguish a Prefrosh even without this giveaway.

The Prefrosh, who rarely hide their excitement about being on the campus, divide into several categories. One extreme category mercilessly throws nerdy jokes around and likes to wear nerdy t-shirts and quote textbooks, which they likely do not fully understand. These Prefrosh can already know that they want to come here, or they are choosing between the standard package of Caltech, MIT, Harvard, etc.

Another extreme category seems bent on breaking the general campus wariness of outside visitors. Members of this category can be found nonchalantly sauntering around campus, intensely focused on being “cool.” They say they’re not sure if they want to go here or another school, where they might be able to play in Division I sports and have a broader “college experience.”

I’ve noticed a good number of current ‘Techers get anxious about trying to prove to the ones coming fresh from the outside world that we are no less “normal” than what they see at their high schools or at other schools that they are visiting. I find this mind-boggling. Why should we try to mask our winning scientific quality just to put on the façade of a “normal college”? We are not a normal college, by definition!

The discerning Prefrosh visiting during Prefrosh Weekend can get a very good idea of what Caltech is like, hidden underneath the slip-n-slides and endless supply of donuts. Just like seasoned ‘Techers can spot Prefrosh, the very discerning Prefrosh can tell whom the campus has spent a significant amount of time outside of the famous Caltech bubble. One telltale sign that someone has spent time outside is their behavior around doors. ‘Techers have a very well developed Door Code. A very good place to observe Techer behavior around doors is outside of Chandler at noon. Sit at one of the umbrella tables for 15 minutes and you will see the difference between Door Code followers and non-followers.

The argument against “old fashioned” behavior seems to be popular with many people these days. This is indeed upsetting. Even if the idea of a male helping a female through a door is a vestige of older days, helping a less able person of any gender or age, should never go out of style. Several times, I’ve held the door open for a mother trying to get several kids and a stroller into Chandler. Clearly she did not have enough hands to do this alone, yet each time the mother was surprised and very grateful that I helped.

In Techerland without adhering to the Techer Door Code. A very good place to observe Techer behavior around doors is outside of Chandler at noon. Sit at one of the umbrella tables for 15 minutes and you will see the difference between Door Code followers and non-followers. The argument against “old fashioned” behavior seems to be popular with many people these days. This is indeed upsetting.

Some current ‘Techers are occupied with attracting more “normal” Prefrosh and yet they adhere to the Techer Door Code. If the Prefrosh themselves are the future Door Coders, they will be quick to spot who on campus is putting on a show and who is not.

However, if they at not of that category, then they will be quick to spot who on campus is putting on a show and who is not.

We are looking for undergraduate students to be mentors for a middle school summer camp on campus from August 5-9th. This year, our activities include working with Lego Mindstorm Robot kits.

Interested? Shoot an email to caltech@innoworks.org!
Oblivion is a fun, but familiar, sci-fi ride

CAMERON ALLEN Contributing Writer

Oblivion is a new science fiction film thick with twists and turns and beautiful special effects. Not wishing to delve into spoiler territory, I am going to stick to information that one could glean from the trailer. Aliens came to Earth and forced the humans to use nuclear weapons, which ended the war, but left Earth ravaged. Those who have not been killed by nuclear sickness migrate to Titan, an inhabitable moon of Saturn. It requires a lot of energy to propel space stations and ships across the solar system, so a few are tasked with staying on Earth and making sure the energy plants run smoothly. Enter Jack Harper (Tom Cruise), a mechanic who repairs drones that monitor and maintain these plants.

Harper has dreams about a woman he has never met, but feels as though they are linked somehow. This may be explained by the fact that his memory was wiped for no adequate reason, but he is not sure. His curiosity and determination take him on a journey to discover exactly what is really happening on Earth. Eventually, the woman does turn up in his real life (again, this was in the trailer). If this sounds familiar, it is because it is basically the plot of Total Recall, a 20-year-old film based on a 50-year-old short story. The differences are only cosmetic. Instead of being on Mars, they are on Earth. Harper is a mechanic rather than a construction worker, and instead of a fellow day laborer buddy aggressively telling him not to look for answers, there is a nagging companion. The mysteries of the unknown dream woman are the same. I could go on. But I will come back to this later.

Tom Cruise is an experienced actor, so we all know what he is capable of and what to expect. He reads his lines and plays the role well enough, but it is not difficult to tell that another actor plays his part. Cruise does not really get inside his character, like he has done for Maverick, or Jerry Maguire, or even John Anderton in Minority Report. He is getting pretty old, but even at 50, he shows he can still be a terrific action hero through his performance. What? Joseph Kosinski’s only other directorial project was TRON: Legacy. Well, I guess that makes sense then.

The main draw of Oblivion is the twists, to the point where the entire story is basically structured around them. Having one every 15 or 20 minutes makes the story absolutely bonkers by the end. The plot has more surprises than the classic children’s book "M. Night Shyamalan Goes to the Dentist," and reads like an itemized list of science fiction clichés and tropes. However, at least Shyamalan shows restraint and discretion, putting maybe one big twist at the end of his films. The sheer number of twists in Oblivion really devalues the shock of each one, and eventually all of the awe is gone from you. Most audiences will be able to see them coming, anyway, as none of them are original.

This is really the core problem of Oblivion. While the film is well made and looks fantastic, its content is (to put it nicely) derivative. I mentioned the similarities to Total Recall, and while that is the story it mimics the most, it pulls from many different sci-fi films from the last 50 years. There are points that smack of 2001: A Space Odyssey (but without the Kubrick vision or charm), and others that feel like Vanilla Sky, or even The Truman Show if you look hard enough. Both of you who have seen Tarkovsky’s Solaris may recognize how its surreal tone influenced the dreamlike interactions between the characters, and lack own confusion as a result. Some people have compared this film to The Matrix, a pastiche movie if there ever was one. However, The Matrix both defined its own cyberpunk style and asked truly important philosophical questions. Oblivion is not quite that deep.

I know original science fiction is still possible; recent films like Looper, Prometheus, or Moon have proved that. So why is there not one single new idea in this film? Paying homage to a work that you respect is one thing, but when I can trace almost all of the plot points and twists of a film to other specific movies and books, I have to wonder, did no one at Universal raise their hand at the board meeting and ask " Didn’t you steal this?" I like to think that after a wild late night of watching a Twilight Zone marathon, binging on the complete works of Philip K. Dick, and possibly eating expired yogurt, the screenwriter experienced a 124-minute fever dream, which, upon waking, he faithfully scribbled down on some nearby cocktail napkins.

Honestly, I really enjoyed watching this film, and rereading this review makes me feel as though I am being too harsh. The plot was at least engaging, and it was visually pleasing. But, there are very few moments or images that stood out, or have remained in my memory a day later. If you are jonesing for some sci-fi, you could certainly do worse. You probably will not see that compliment on the promotional posters, but I sincerely mean it. At its heart, Oblivion is a competent, inoffensive science fiction film that does not dare to be original or cerebral, preferring to mimic others instead of establishing its own identity. If you are a fan of science fiction, this should tide you over until Star Trek and Elysium come out. Since I would not consider this film to be a must-see for any particular demographic, Oblivion earns a hesitant recommendation, and a score of 7/10.
...many addicted gamers are playing so much because they are getting something vital from the game that they aren't getting in real life.
Today's Puzzle: Crossword

Across
1. Mountain top
2. Two
3. Optical device
4. Small island
5. Unharmed
6. South American ma
7. First note of a major scale
8. Ault
21. Thin-shelled object
22. Method of transport
35. Sum up
47. Stringed instrument
49. Ozt
52. Biblical boat

Down
1. State capital, __
2. Biblical boat
3. Pyramid
4. Knowledge or understanding
5. Musical notation
6. Let for money
7. Beginning
8. Healthy
9. Guide
10. Lament
11. Shelf
12. Father
14. Rolled up document
18. Not in favor
20. Quadruped
22. Head
23. Lumber
25. East
26. Cereal grass
27. Horse
28. Sport played on horseback
29. Prevarication
30. All assets and liabilities
31. State capital, __
32. Gemstone
33. Shelf
34. Rolled up document
35. Prevarication
36. Fall behind
37. Affirm
38. Arm of the Indian Ocean, Sea
39. Portents
40. Fall behind
41. Musical notation
42. Part of a church
43. Song for one
44. Whittled
45. Part of a minute, in short
46. Every one
47. Stringed instrument
48. Country, initially
49. Fertile part of a desert
50. Unaccompanied
51. Musical instrument
52. Heavenly
53. Small hill
54. Part of a plant
55. Everything
56. Country on the Pacific, Arctic, and Atlantic
57. Caribbean
58. Far down
59. Australian flightless bird
60. Prevarication
61. Employ
62. Roald Amundsen got to the __ Pole
63. High rocky hill
64. South American mountain chain
65. Within
66. Westinghouse
67. Additional
68. Prevarication
69. Visionary
70. Sever
71. Anvil
72. Prevarication

[http://www.puzzlechoice.com/]

Experimental Performance Lab presents *Tesla*

**CINDY DE MESA**
Contributing Writer

The Experimental Performance Laboratory at Caltech and The Pasadena Playhouse present *Tesla*, a radio play for the stage. Directed by acclaimed Los Angeles director Michael Archan with live sound effects by the SFX artist Tony Palermo, *Tesla* will run for five days only on the Mainstage of The Pasadena Playhouse, Saturday May 4th, 6pm.

Special guest stars include Phil Proctor (“Big Brother,” “The Smothers Brothers”), as Thomas Edison; French Stewart (“3rd Rock from the Sun,” “Truck Stop”) as Tesla; Sandra Tsing Loh (Caltech alum and NPR’s “The Loh Down”) as Katherine; Dr. Ashley Stroupe (JPL Mars Rover Mission Specialist) as Dr. Steven Collins; Dr. Matthew Renner (Caltech Human Systems Lab) as Dr. Ashley Stroupe; and Caltech/JPL community alongside professional actors from the theater and film world.

**- Brian Brophy**

A partnership with The Pasadena Playhouse and Caltech is the perfect synergy of science and art...This project...features actors from the multi-talented Caltech/JPL community alongside professional actors from the theater and film world.

**Out of Orbit** tells the story of a Mars Rover Mission Specialist at Jet Propulsion Laboratory (JPL), played by Dr. Ashley Stroupe, a “real-life" JPL Mars Rover Driver. Can a brilliant scientist relate to a learning deficiency in her daughter? Can she keep up with her life on two different planets?

Silis by Chantal Bilodeau is the third play of the series on May 18, directed by Arden Thomas. Silis stars Sandra Tsing Loh, host of NPR's The Loh Down and Caltech's The Loh Down on Science. Silis is a powerful, gripping, and poetic play about climate change and its consequences for the people and animals living in the Arctic Circle.

The Washing of Water by Marcus Renner is the final play in the series on June 1, directed by TACIT artistic director Brian Brophy.

The Washing of Water is based on over 60 interviews conducted across Alaska, La California, the Inland, and Northwest Pasadena.

The Water of Washing follows an artist activist, a homeless teenager, and a mother whose stories intersect as they fight a polluted past and search for a fresh start amid the wilds of the Hahamongna Watershed Park.

*See www.tacit.caltech.edu for more information about the New Plays Festival.*

Experimental Performance Laboratory presents *Tesla*

The staged reading of *The Washing of Water* by Marcus Renner kicks off the second year of the Experimental Performance Laboratory at Caltech’s New Plays Festival, a series of four staged readings of new science-based plays.

Out of Orbit by Jennifer Maisel is the second play in the series, on May 11, directed by Ann K Lindsey.
Caltech track and field competes at SCIAC Finals

At the last team competition of the season the Beavers competed the SCIAC Championships.

Women's Highlights

Sarah Wright finished third in the javelin throw. The senior had her best attempt on her second throw when she recorded a mark of 114’10” to outdistance herself by over eight feet from the fourth place finisher.

Paige Logan took second place in the discus throw. She went on to show those moves at Blacker Interhouse. Right: Senior Sarah Wright floats through the air just prior to releasing a massive javelin throw that would land her in 3rd place in the competition.

Men's Highlights

Eric Martin ran the 1500 meter race in 4:03.45 to finish sixth and score points for the Beavers. Roce Nenokou finished tied for seventh in the high jump by clearing the bar in 5’9 3/4” . Robin Yoon scored points in the long jump with his best jump of 20’11 3/4” to finish seventh overall. Also scoring for Caltech was Matt Voss as he got a point in the 110 and 400 meter hurdle races. William Hoza finished eighth in the pole vault as the first-year cleared 12’6”.

The event was held at Occidental College.

Senior Day brings a win for men’s tennis team

At a successful senior day for the Caltech men’s tennis team as they posted a 5-4 win over Linfield on Sunday afternoon.

It is the Beavers first team win since the 2011 season; a span of 43 matches.

In addition, it sent seniors Brian Kim and Amol Kamat out on a good note as they won their final home match.

Linfield nearly swept the doubles matches but an 8-3 victory by Rushikesh Joshi and JD Co-Reyes at the No. 3 spot gave the home team some momentum heading into singles play.

Needing to win four singles matches the Caltech squad did exactly that. The Beavers won their four singles matches in straight sets. Joshi won 6-3, 6-3 at the No. 2 spot while Luka Mernik was right behind him with a 6-2, 6-0 win at the No. 3 position.

Alex Henny produced a convincing 6-2, 6-0 win at the No. 4 singles match. Co-Reyes fought hard to tally a 7-6 (5), 6-3 win at the No. 6 position to help seal the win.

Tennis Match Results

Linfield vs Caltech
4/28/2013 at Pasadena, CA (Beaun Tennis Courts)
Caltech 5, Linfield 4

Singles competition
1. Lyons, Zachery (LIN-M) def. Devashish Joshi (CALTECHM) 6-7, 6-2, 10-5
2. Rushikesh Joshi (CALTECHM) def. Roos, Micah (LIN-M) 6-3, 6-3
3. Luka Mernik (CALTECHM) def. Trousdale, Joel (LIN-M) 6-2, 6-0
4. Alex Henny (CALTECHM) def. Hawkins, Tim (LIN-M) 6-3, 6-0
5. Kleinman, Lukas (LIN-M) def. Amol Kamat (CALTECHM) 6-2, 6-1
6. JD Co-Reyes (CALTECHM) def. Mangan, Alex (LIN-M) 7-6 (7-5), 6-3

Doubles competition
1. Lyons, Zachery/Kleinman, Lukas (LIN-M) def. Devashish Joshi/Luka Mernik (CALTECHM) 8-6
2. Roos, Micah/Hawkins, Tim (LIN-M) def. Amol Kamat/Ishan Mehta (CALTECHM) 8-4
3. Rushikesh Joshi/JD Co-Reyes (CALTECHM) def. Mangan, Alex/Trousdale, Joel (LIN-M) 8-3

Seniors Brian Kim and Amol Kamat pose next to their coach while holding cute stuffed beavers. Now would be the perfect time to insert a snarky remark about Amol, but in honor of the years he’s worked on the Tech we’ll spare him. Also, I’m pretty sure there’s nothing I can say that’d be as funny as what he could come up with.
Caltech Public Events is now hiring student ushers. $15 per hour to work concerts, performances, lectures, films and parties.

No experience needed, no hard labor, flexible schedules.

*Requirements: Caltech student, Positive attitude, Friendly personality

To apply email Adam Jacobo (ajacobo@caltech.edu) or call (626) 395-5907

For info on Caltech Public Events visit: www.caltech.edu/content/public-events

For more photos, videos, and archives of previous issues, check out the Tech website!

tech.caltech.edu