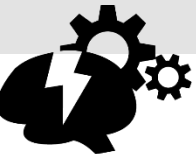


# CSNE Hackathon 2017

February 10<sup>th</sup> – February 13<sup>th</sup>, 2017

1414 NE 42<sup>nd</sup> St, Seattle, WA 98105



CSNEHACKATHON

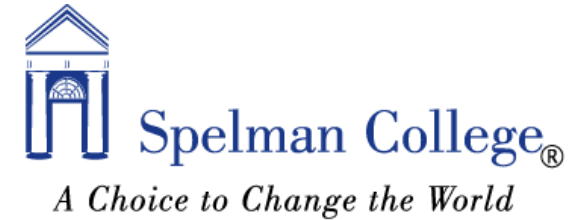
# What is the CSNE?

- The **C**enter for **S**ensorimotor **N**eural **E**ngineering is an NSF engineering research center focused on understanding how the brain adapts and processes information and designing implantable devices or interfaces that interact seamlessly with the nervous system for those with sensorimotor disabilities



# Hackathon Vision

- Bring together students to develop novel technology to **address sensorimotor neural engineering problems** or to be used for educational purposes
- Undergraduate and graduate students from CSNE affiliated institutions are eligible to participate

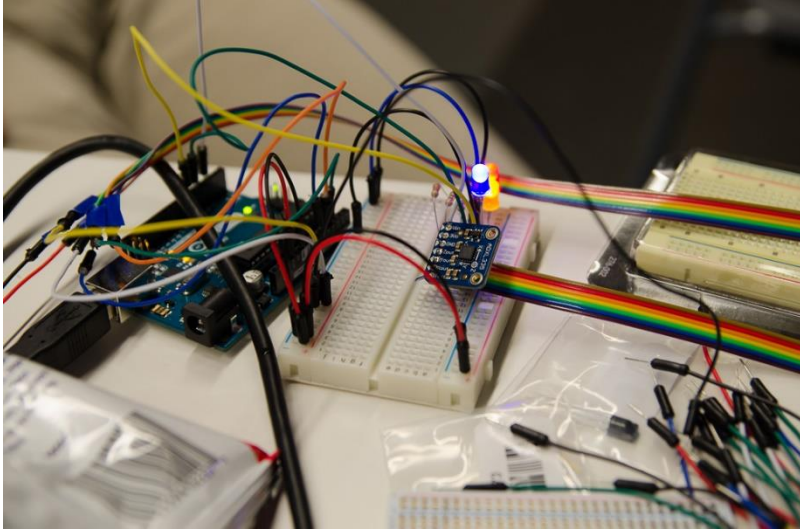
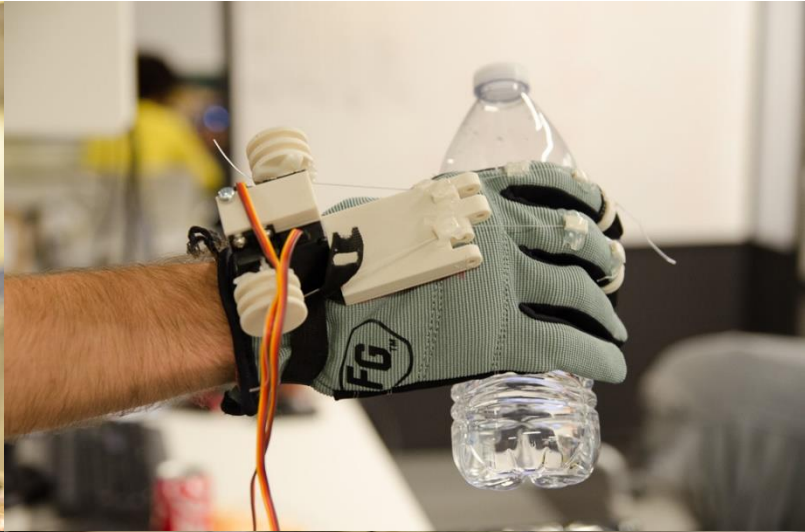


# Event Structure

- **Fifteen students** will form teams of three to apply principles from sensorimotor neural engineering to create novel technology on an accelerated time scale
- Teams have **36 hours** to utilize the equipment (hardware and software) provided
- Teams will present their project prototypes to a panel of judges and the broader CSNE community on the final day



# First Annual CSNE Hackathon (2014)



# Equipment Available for Use Last Year

- Arduino Motor shield
- OWI Toy Robotic Arm
- Oculus Rift DK 1
- Oculus Rift DK 2 (5x)
- Phantom Omni
- LifeCam
- Vicon Motion Capture system
- Kinect 1 for windows
- Kinect 2 for windows
- g.Mobil lab+
- Biometrics Data Capture
- Leap Motion
- Creative Gesture Camera
- 5DT Data Glove
- NI USB-6009 / Labview
- iRobot Roomba
- NeuroSky Mindwave
- Emotiv Epoc



# Why Sponsor?

- All donations are tax deductible
- Company and product exposure to participants and press
- Build relations with the CSNE and students
- Real-time feedback on products



# When and Where?

- Friday February 10<sup>th</sup> – Monday February 13<sup>th</sup>, 2017
- 1414 NE 42<sup>nd</sup> St, Suite 204, Seattle, WA 98105





# Media Coverage

## iHand wins first CSNE hackathon

Monday, October 13, 2014

Mary Guiden



Five teams of students from the Massachusetts Institute of Technology, San Diego State University and the University of Washington spent the weekend at CSNE headquarters in Seattle.

What brought them together? The CSNE's first hackathon, organized by graduate student Tyler Libey,

Department of Bioengineering. A handful of additional graduate students helped organize the event and served as consultants throughout the week. The hackathon kicked off at 5 p.m. Friday, October 10 and ended at 9 p.m. on Sunday, October 12. Presentations took place today, October 13.

The winning team, iHand, created an educational device that demonstrates how a person can use eye muscles, or blinking, to pick up a plastic bottle. iHand uses EMG, or electromyography, to record electrical activity produced by muscles. In presenting their device, team members provided parallels to CSNE research, even including neuroethics, since the movement to pick up the bottle or drop it is initiated by another person.

Andres Canales, graduate student in the Bioelectronics Group at MIT, said it felt great to complete the project, iHand. "All the goals we set, we were able to achieve them," he said. "Winning is a plus."

Teams were judged on the device or system's alignment with the CSNE mission and vision, project innovation and technological merit and presentation quality. Judges were asked to also keep in mind that the teams included students with various backgrounds in science

<http://www.csne-erc.org/engage-able/post/ihand-wins-first-csne-hackathon>



### BioE PhD students lead, participate in CSNE Hackathon

UW's CSNE (Center for Sensorimotor Neural Engineering) hosted a weekend-long hackathon October 10-12. 15 Students from UW, MIT and San Diego State University were split into five teams of three students – one from each school – to build a device or system that aligned with the CSNE's core missions of uniting the human brain with technology, improving the quality of life for people suffering from sensorimotor neural disabilities and engaging the next generation of scientists and engineers.

UW Bioengineering Ph.D. student Tyler Libey was the event's lead organizer and several other BioE Ph.D. students participated directly in the project teams, including Laurie Zhang, Ian Dryg and Nile Wilson.

After introductions and team-building exercises on Friday night, participants had 36 hours (from 9am Saturday until 9pm Sunday) to create something with the materials/equipment available. Every team got the same box of basic items including wires, resistors, Arduinos, duct tape and glue, but each team was allowed to use unique, more advanced items such as Oculus Rift, Microsoft Kinect, Bluetooth EMG system and Emotiv Epoch.

On the following Monday morning, each team presented their work to a panel of judges. The judges evaluated the teams on the device or system's alignment with the CSNE mission and vision, project innovation, technological merit and presentation quality. They ultimately selected iHand, which presented

<http://depts.washington.edu/bioe/bioe-phd-students-lead-participate-csne-hackathon/>


## CSNE holds weekend-long hackathon

Ze Zhou Jing | Posted: Tuesday, October 7, 2014 12:00 am



Fifteen coders from three institutions competed in the UW's Center for Sensorimotor Neural Engineering (CSNE) weekend-long hackathon.

[http://www.dailyuw.com/news/image\\_624a402c-57e3-50e9-9c23-fe3681cf11a0.html](http://www.dailyuw.com/news/image_624a402c-57e3-50e9-9c23-fe3681cf11a0.html)

 **Center for Sensorimotor Neural Engineering**  
October 13, 2014 · 🌐

iHand wins the first CSNE #hackathon. Congrats to David Ejanes (UW), Andres Canales (MIT) and Allen Tan (SDSU)!!! <http://csne-erc.org/engag.../ihand-wins-first-csne-hackathon>



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iHand wins first CSNE hackathon | The NSF Engineering Research Center for Sensorimotor Neural...  
Monday, October 13, 2014 Mary Guiden Five teams of students from the Massachusetts Institute of...  
CSNE-ERC.ORG

<https://www.facebook.com/CSNE.ERC/posts/546318908835402>



CSNEHACKATHON

# Media Coverage

## A knack for hacking: Students tackle neural engineering problems at the CSNE

Aleenah Ansari The Daily Nov 11, 2015 0



Oleksandra Makushenko  
Jaycee Holmes, Tim Brown and Catherine Yunis work on software that would help people who had stroke recover at CSNE Hackathon on Sunday.

[http://www.dailyuw.com/science/article\\_23efc846-88fa-11e5-ae3e-8f2ca73729a5.html](http://www.dailyuw.com/science/article_23efc846-88fa-11e5-ae3e-8f2ca73729a5.html)

## Center for Sensorimotor Neural Engineering Hackathon 2015

11/06/2015 @ 5:00 pm - 11/09/2015 @ 11:00 am | \$10000



The National Science Foundation's Center for Sensorimotor Neural Engineering (CSNE) hosts its second annual neural engineering hackathon. Fifteen undergraduate and graduate students from the University of Washington, San Diego State University, Massachusetts Institute of Technology, and Spelman College compete in this weekend long event to create a prototype of a novel solution to a sensorimotor neural engineering issue or to develop an educational tool for neural engineering outreach.

<http://www.geekwire.com/calendar-event/center-for-sensorimotor-neural-engineering-hackathon-2015/>



## UNITING THE BRAIN WITH TECHNOLOGY: PH.D. STUDENT NILE WILSON LEADS 2015 CSNE HACKATHON

UW's CSNE (Center for Sensorimotor Neural Engineering) hosted its 2015 Hackathon November 6-9. At this second annual event, fifteen students from UW, MIT, San Diego State University and Spelman College formed five teams to develop novel technologies to address sensorimotor neural engineering problems. The teams' projects aligned with the CSNE's core missions of uniting the human brain with technology, improving the quality of life for people suffering from sensorimotor neural disabilities and engaging the next generation of scientists and engineers.

<http://depts.washington.edu/bioe/2015-csne-hackathon/>

## Face the Music Wins Second CSNE Hackathon

Thursday, December 17, 2015

Eleanor Cummins

Happily sacrificing their weekend to science, fifteen students from four universities gathered in the CSNE in Seattle for the second annual Hackathon.

For 36 hours, students from the UW, Spelman College, MIT, and San Diego State University worked in teams to design a solution to a neural engineering problem or create a tool for educational outreach.



<http://csne-erc.org/engage-enable/post/face-music-wins-second-csne-hackathon>

# Contact Information

- 2016-2017 Hackathon Coordinators  
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James Wu ([jiwu@uw.edu](mailto:jiwu@uw.edu))
- Website  
<http://www.csnehackathon.org>

