**Summary of Conference Presentations**

**Wireless Neural Recorder - Senior Design Team**

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**Poster name:** Energy-Efficient High-Throughput Wireless Transmission of Multi-Channel Neural Signals

**Conference Presentations (Submitted and Presented)**

* **Rice Electrical and Computer Engineering Affiliates Day Poster Presentation**
  + **Description:** The ECE Affiliates Program provides extraordinary opportunities to establish and renew connections to engineering professionals, technical experts, and business associates. ECE Affiliates day provides participants the opportunity to network and learn with department and faculty researchers, addressing new directions in engineering research. It also serves to highlight and showcase the ongoing research in Rice’s ECE department.
  + **Date & Time:** Wednesday, April 6, 2016: 12:30 - 2:30
  + **Location:** Duncan Hall, Rice University
  + **Presenters:** Entire Team: Yuan Gao, Xin Huang, Tingkai Liu, Stephen Xia
  + **Oral Presenters:** Entire Team
  + **Summary:** We presented an earlier iteration of our final poster, which had some text and graphics that were a bit pixelated but still visible. This was mostly a poster session with a small demo on our table with just our electrode probes, development boards and small PCB design cut outs. We did not present a full working demo where we transmit a signal, receive it, and display it. The majority of the session was focused on poster as that was what gathered the most attention. There were less than 10 adults that stopped by our table but a decent amount of students who were interested in our poster. The adults that did stop by, were familiar with Electrical Engineering concepts and how our miniature yet highly efficient design was a hard engineering & neuroscience challenge. While we didn’t receive any feedback on our poster or presentation skills, I believe we presented our poster and design well as visitors left impressed with very few questions on our project besides a few technical and next steps questions. We learned that we were more prepared to talk about our project than we had originally thought as we did not practice much before. But since we had worked on the project from the ground up, it came naturally.
  + **Awards:** 
    - 1st place - Best Senior Design Project
    - 2nd place - Best Demo
* **Sid Richardson & Lovett College Poster Expo**
  + **Description:** Residential College poster session to ready college participants for RURS or showcase.
  + **Date & Time:** Monday, April 11, 2016: 3:30 - 5:30
  + **Location:** Lovett College Commons, Rice University
  + **Presenter:** Xin Huang
  + **Oral Presenter:** Xin Huang
  + **Summary:** Xin presented the same poster as we had for ECE affiliates day and brought along a neural electrode and small PCB stack. There were 3 official judges but a handful of other adults and students walking about asking questions about the project and poster. The atmosphere was much more relaxed than ECE affiliates as not everyone there was an engineer nor in the healthcare industry. There was a bit more explaining to do on what the project could enable for healthcare and how it was an engineering challenge. However people here were also very impressed by the size of the PCB and how it enables wireless transmission of neural signals. There was feedback given back to Xin about the poster and presentation style and the remarks were mostly highly rated.
  + **Award:**
    - 3rd Place - Best Poster Presentation
* **Rice Undergraduate Research Symposium (RURS)**
  + **Description:**  RURS is the premiere event for undergraduates across all disciplines to present their research projects and compete for recognition from academic schools and research centers at Rice
  + **Date & Time:**Wednesday, April 13, 2016: 3:00 - 5:30
  + **Location:** Tudor Fieldhouse, Rice University
  + **Presenter:** Xin Huang
  + **Oral Presenter:** Xin Huang
  + **Summary:** Xin presented the latest poster, which was also used for showcase. There was a good handful of engineering teams presenting but social sciences posters far outnumbered the engineering posters. This presentation went well too as the judges were clearly identifiable and introduced themselves. They were chosen from a mix of industry and professors and had no problem understanding the project pitch or poster. Everyone who stopped by the poster session was very impressed with the pitch and poster even though there was a lack of a physical prototype to show as this was only a poster session and not a poster + demo session. Given the awards that we received, it is evident that we were a crowd and judge favorite and the poster was a success even though no formal feedback sheet was provided back to Xin.
  + **Awards:**
    - 1st place - Best Neuroscience Project Presentation
    - People’s Choice Award
* **Engineering Design Showcase**
  + **Date & Time:**Thursday, April 14, 2016: 3:30 - 6:30
  + **Location:** Tudor Fieldhouse, Rice University
  + **Presenters:** Entire Team: Yuan Gao, Xin Huang, Tingkai Liu, Stephen Xia
  + **Oral Presenters:** Entire Team
  + **Summary:** The entire team pitched the poster, showed a installation video of the neural electrons, and had a full end-to-end demo with analog signals being digitized and sent wirelessly to a computer to be reshown. Unfortunately, there was not enough room in between teams which made it hard to showcase the demo and poster at the same time. The layout was a little difficult to allow an entire team to stand by the poster effectively. The judges were also a bit random and rushed to attend as they were eager to get to other posters. We did not get much feedback or questions from adults but students were very interested in our poster and demo. While we were disappointed that we did not win more awards at showcase, we were glad that our demo worked and showcased the many healthcare professionals what our project can do. Unfortunately there was no formal feedback provided back to us to understand how we could have improved.

**Conference Presentation (Submitted & Did not advance)**

* **Emerging Medical Innovation Valuation Competition**
  + **Description:** The DMD Emerging Medical Innovation Valuation Competition is a way for researchers and inventors to get immediate feedback about their projects from leaders in medical technology research, engineering & development. This competition is for inventors (including students, faculty, staff, and corporations) with ideas for new innovations in need of investor support to reach the next stage of development. <http://www.dmd.umn.edu/2016/valuationcomp.html>
  + **Date & Time:** Tuesday, April 12, 2016: 4:00-5:30
  + **Location:** Meridian Ballrooms 2/3, The Commons Hotel, University of Minnesota
  + **Summary:** We submitted a 10 slide presentation detailing our project focusing on how our wireless transmitter design can help revolutionize the neuroscience industry. We stated our mission statement, our design and work so far, and our target market. Unfortunately, we were not selected to advanced and did not received any feedback on why we were not chosen except that it was a highly competitive process.