



Reaching our Potential: Using an LED Model to Help Teach Physiology

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Background

- Difficult for students to conceptualize complex physiological processes.
- Developing a physical model to aid in learning physiology.
- We evaluated the impact of the model analyzing student feedback.
- We started with the Neuromuscular Junction (NMJ).

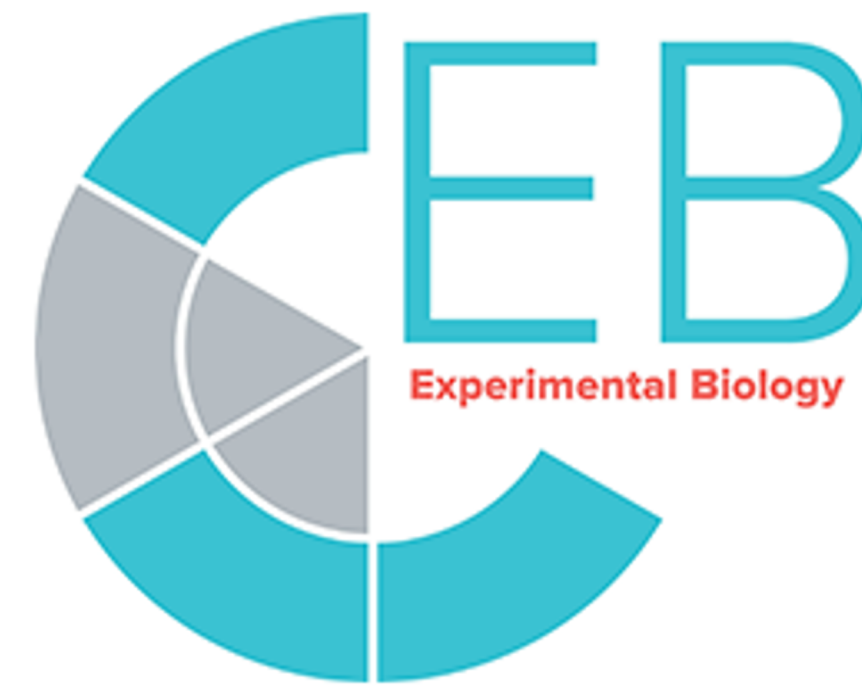


Figure 2. This experience has allowed us to share our work at larger conferences such as Experimental Biology.

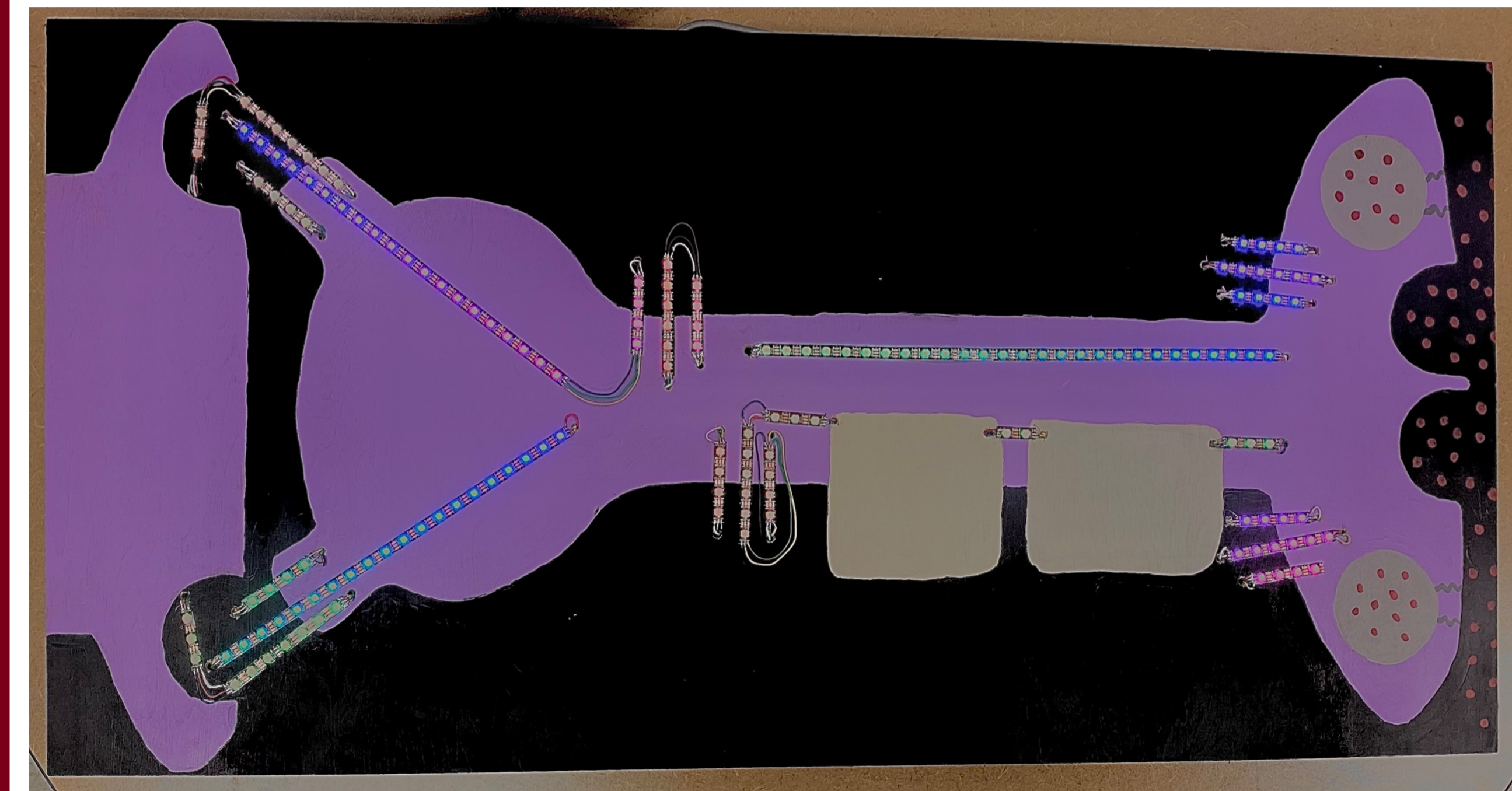


Figure 3. The completed neuron board. The bottom side of the neuron denotes myelinated action potentials, while the top is unmyelinated action potentials.

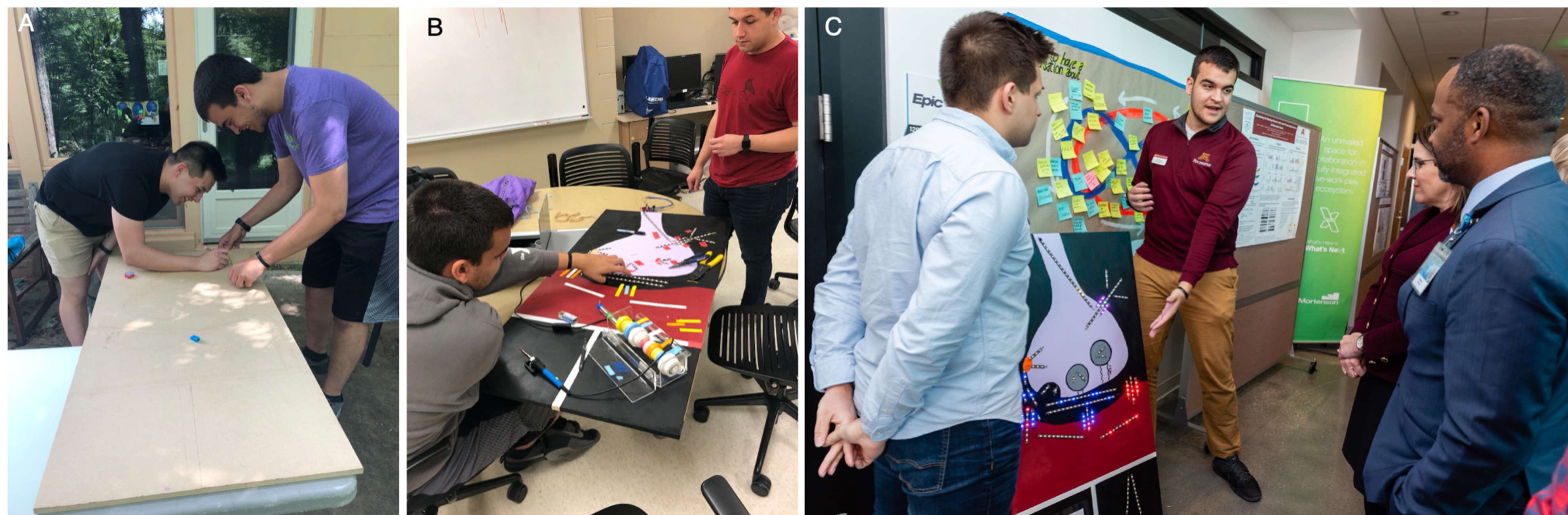


Figure 1. Designing and building the neuromuscular junction (NMJ) model by undergraduate students begins with initial planning and drawing of the background (A) and continues with placing LED lights (B). C: the completed model was used for interaction with many interested parties, including local entrepreneurs, donors, politicians, and university officials.

Future Directions

- Deploy neuron the model in classroom.
- Identify other processes which would benefit from a physical model.
- Utilize models as informal science education art installations.

Acknowledgements

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