The purpose of this workshop was to showcase teaching exercises that use computer software to teach important principles of hearing and balance research to undergraduate and graduate students. We had great presentations that used a variety of methods that demonstrated important concepts in our field. Below is a summary of each presentation, as well as links to obtain these materials for use in your own classroom.

Chris Stecker and Erick Gallun gave a live demo of several “patches” they created using MAX MSP that demonstrate fundamental principles of signal processing and audio filtering, which can be manipulated in real-time by students. These patches, as well as the MAX runtime engine, can be found at these links:

Patch Dropbox:

<http://tinyurl.com/Stecker-MSP>

To download MAX:  
[https://cycling74.com/products/max/](https://linkprotect.cudasvc.com/url?a=https://cycling74.com/products/max/&c=E,1,Y_AbHxBnZ79pWH26C-b_Is286cZyP-GnGzXkvzX8XwyCLG_-DhBW553pVrFp1wKF3Tp5UBVCnbb_Gqfkcj2Me9gsF4Z_uK0ZZ9vwbbTfOTBpag,,&typo=1)

Adam Bosen gave an overview of an electrophysiology modeling project that he developed as a teaching assistant for Laurel Carney. The project walks students through the steps necessary to implement a Hodgkin-Huxley neural model and other models described in recent publications. The project description can be found here:

<https://github.com/AdamBosen/ARO-Software-Workshop/blob/master/BME218%20Lab%202%20Instructions%202014.docx>

Eric Tarr provided a video overview of his signal processing and programming website, [www.hackaudio.com](http://www.hackaudio.com). This website contains source code and video tutorials on a range of audio processing and programming techniques that are designed to be useful for students at all skill levels.

Ray Meddis provided the Matlab Auditory Periphery (MAP) program, a physiological model of normal and impaired human hearing, as well as software for testing various behavioral thresholds. Parameters in the physiological model can be manipulated to demonstrate the role various components of the auditory pathway play and model impairments caused by their loss. A stable version of MAP can be found here:

<https://dl.dropboxusercontent.com/u/13144068/MAP1_14j.zip>

Alan Kan organized a discussion on teaching tools that people wanted to have available in their classrooms, and fielded suggestions for existing resources that meet those needs. The full list is available here, and we’re happy to share editing of the list with anyone interested in contributing:

<http://tinyurl.com/ARO2017Teaching>

We would like this list of educational tools to continue to grow outside of the Midwinter Meetings, so if you have any educational tools you would like to provide or recommend that we include please let us (Adam Bosen and Alan Kan) know. Thanks!