

E90 Topic Selection Memo
David Luong and Mark Piper
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Our aim is to create a directional hearing device that allows the user to express preference in a specified direction. The primary application of such a device is to isolate desired sound in large and/or noisy environments. Previously, Emily Eddy '03 accomplished this task purely with analog circuitry. James Golden '05 attempted to transfer the design to a digital domain, but without success. We want to effectively design and build a working digital hearing system with special focus on being robust, user-friendly, and commercializable.

From this, David hopes to learn more about acoustic theory in hearing and using control theory to facilitate the hardware design and construction of the project. Mark hopes to learn more about control theory application, signal processing techniques, and software writing from the perspective of an engineer.

Our advisors will be both Carr Everbach and Erik Cheever.