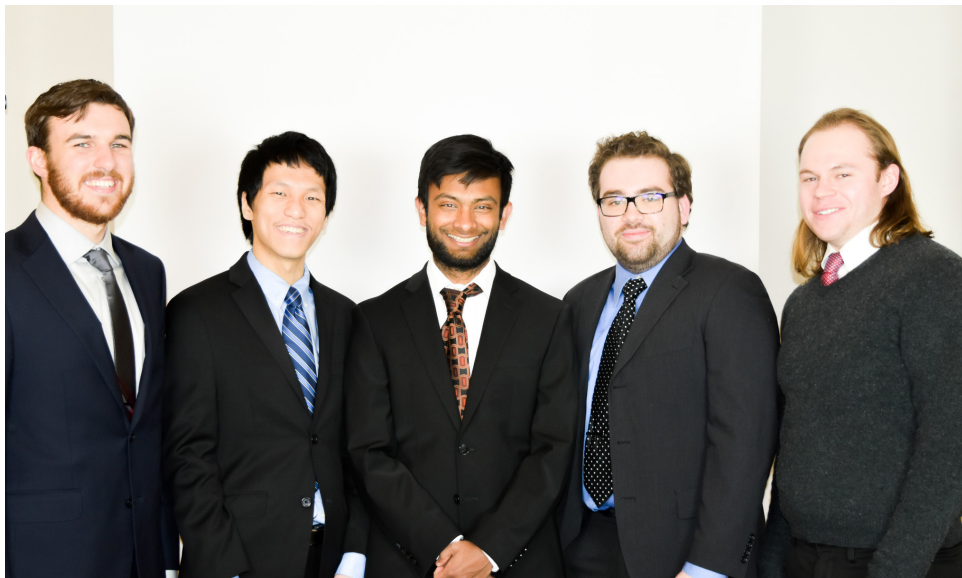




TEAM 15- RIVERSONDE

Anthony Byrne, Victor Ly, Nikunj Khetan, Adian Mikulic,
Andy Whitman

Client: MA Department of Conservation and Recreation, Charles River
Watershed Association

Humans have relied on fresh and saltwater rivers for transportation, clean drinking water, irrigation, and food since the earliest recorded history. Compared to oceans and other large bodies of water, however, rivers are significantly understudied, especially with respect to the effects of climate change. In an effort to close this research gap, we have set out to develop the RiverSonde, a low-profile underwater sensor suite that enables inexpensive remote collection of water quality data from rivers and streams. We've designed RiverSonde to be hydroelectrically-powered by a river's natural current, making it deployable in low-sunlight areas, and mesh-networking-ready, meaning a multiple-sonde network can be deployed to take remote measurements even in areas without cellular coverage. By implementing sensors and electronics that are typically only found in \$3000+ laboratory probes while still keeping RiverSonde's base cost under \$500, we hope to give budget-constrained research and regulatory agencies a powerful new tool to help preserve our rivers for generations to come.