



Cost Effective, Standalone Hydropower for Low Head Non-Powered Dams

\$200,000 STTR Phase I with U.S. Department of Energy Water Power Technologies Office (DE-SC00267009)

Timetable: selected for award May 2022

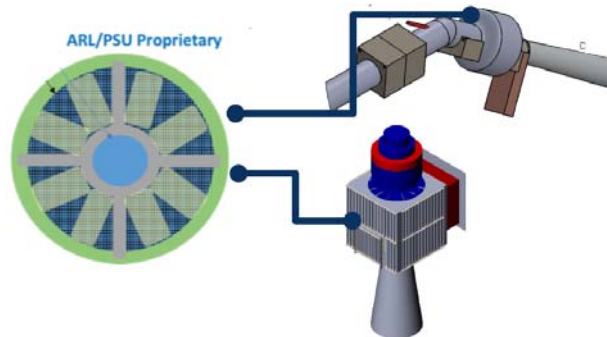
Principal Investigator: Nick Jaffa, Ph.D.

Summary: LPS proposes to develop an economical, fish-friendly standalone hydropower turbine system for a wide range of low head sites with or without existing infrastructure.

Team members:

- LPS
- Penn State Applied Research Laboratory
- Clear Energy Hydro

Project Key Idea: Integrate novel fish friendly turbine into standalone siphon and pressure box turbine systems



Technology: Rim drive turbine with integrated bypass and additively manufactured honeycomb guide vanes

Technical Challenges

- Cost challenge at low head sites
- Costs and timeframes of ecological impacts
- Gaining agency acceptance of new technology

Technical Approach

- Start with proven, low cost standalone systems
- Integrate ARL fish friendly turbine
- Multi-year, risk reduction testing program