

## Specifications for new 1247D/102 Water Tunnel

**What is Needed: A new water tunnel to support flow physics research.**

**Requirements:** The acquired equipment shall meet the following requirements:

1. The tunnel shall have large test section, minimum of 2-foot by 3-foot.
2. The tunnel shall have excellent optical access.
3. The tunnel shall have a speed range up to a minimum of 1 foot/sec.
4. The tunnel shall have high flow quality, velocity uniformity of less than +/- 2%, a turbulence intensity of less than 1% RMS, and mean flow angularity of  $\pm 1.0^\circ$  or less in both pitch and yaw angle.
5. The tunnel test section velocity shall be calibrated to the motor speed.
6. The tunnel system shall include the pump and associated motor and controller.
7. The tunnel shall fit in an existing space, which is 40-feet by 20-feet, with working space around the tunnel.
8. Tunnel design shall not require a floor loading greater than 200 psf.
9. Tunnel design shall accommodate model changes without draining the entire tunnel.
10. The tunnel shall have a proven, robust, and demonstrated design. A list of installed locations of the same model shall be available.