

Abstract Submitted  
for the 4CF17 Meeting of  
The American Physical Society

**VASIMR Fabrication Team at Utah Valley University** ELI ATKIN, MICHAEL BURT, MASON ACREE, SAM OTERO, PHIL MATHESON, RAYMOND PERKINS, Utah Valley University — The Utah Valley University (UVU) Physics Department has formed an undergraduate research team to create a functioning VArIable Specific Impulse Magnetoplasma Rocket (VASIMR). We anticipate the equipment and expertise gained to further plasma physics research at UVU, and to also provide learning platforms in computation, theory and experimental techniques for our undergraduate students. Our plasma generation and containment system is made up of a quartz tube leading from a gas inlet to the expansion chamber. Waveguides will be constructed to focus the microwaves generated by a magnetron to produce an argon plasma in the tube. Four fabricated electromagnets surrounding the quartz tube will provide the VASIMR heating chamber. Our expansion chamber consists of a steel bell jar, obtained from an outside source. Parts have been machined by team members to fit the bell jar to our purposes. Other components include a turbo vacuum pump, roughing pump, gauges, and plexiglass viewport. Initial sensors for this project will include Langmuir probes, interferometers, and pressure monitors, with additional sensors added in the future.

Philip Matheson  
Utah Valley Univ

Date submitted: 20 Sep 2017

Electronic form version 1.4