Project Introduction

With the increasing demands placed on extravehicular activity (EVA) for the International Space Station assembly and maintenance, along with planned lunar and Martian missions, the need for increased human productivity and capability becomes ever more critical. This is most readily achieved by reduction in space suit weight and volume, and increased hardware reliability, durability, and operating lifetime. Considerable progress has been made with each successive generation of space suit design; from the Apollo A7L suit, to the current Shuttle Extravehicular Mobile Unit (EMU) suit, and the developmental I-Suit and Mark III suits. However, one area of space suit design which has continued to lag is the fluid pump used to drive the water cooling loop of the Primary Life Support System (PLSS). Conventional electric motor-driven fluid pumps are heavy, bulky, inefficient, and prone to wear. A new pump type is needed. Lynntech proposes to further reduce the size, weight and power consumption of its long-life, low-power, compact, lightweight, efficient electrochemically-driven pumps, which will allow their use in the next generation space suit.

Primary U.S. Work Locations and Key Partners
## Organizations Performing Work

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<td>Lead Organization</td>
<td>NASA Center Houston, TX</td>
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<td>Lynntech, Inc.</td>
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## Primary U.S. Work Locations

- Texas

## Project Management

**Program Director:** Jennifer L Gustetic

**Program Manager:** Carlos Torrez

**Principal Investigator:** Roger Van Boeyen

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https://techport.nasa.gov/view/6893