

# NASA SBIR/STTR Technologies

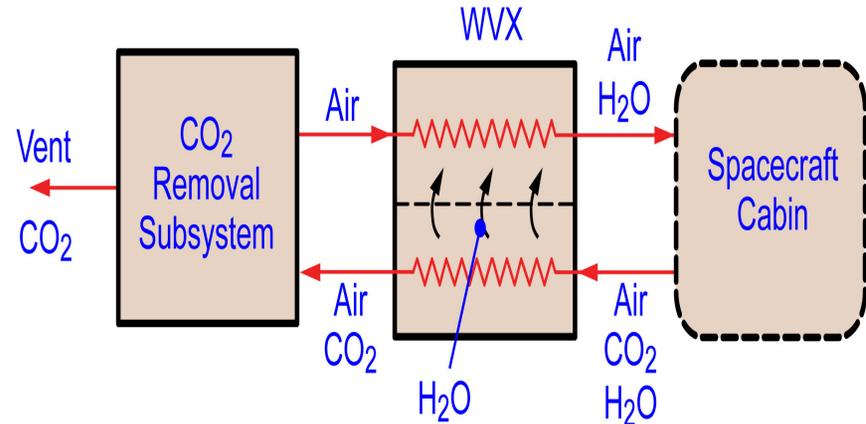
X3.04-9372 - Water Recovery for Regenerative Life Support Systems



PI: Michael Izenon  
Creare, Inc. - Hanover, NH

## Identification and Significance of Innovation

- Innovative Microchannel Membrane Water Vapor Exchanger (MM WVX)
- Operates with regenerable CO<sub>2</sub> removal system
- Prevents water absorption and venting
- Saves 25 lbm water per day for a six-person crew transit vehicle



Estimated TRL at beginning and end of contract: ( Begin: 3 End: 4 )

## Technical Objectives and Work Plan

### Technical Objectives

- Compact and lightweight
- High water recovery efficiency
- Low pressure drop
- Long service life with chemically stable membrane

### Work Plan

- Test and assess candidate membranes
- Assemble and test proof-of-concept WVX
- Formulate and validate analysis models
- Design full-size prototype

## NASA Applications

- Water conservation for life support systems
- Long-duration exploration missions
- Spacecraft life support systems
- Portable life support systems for EVA suits

## Non-NASA Applications

- Water management/recycling for fuel cell power systems
- Submarine life support systems

## Firm Contacts

Michael Izenon  
Creare, Inc.  
P.O. Box 71  
Hanover, 037553116  
PHONE: (603) 643-3800  
FAX: (603) 643-4657

**NON-PROPRIETARY DATA**