Lori Ploutz-Snyder
Dean of the School of Kinesiology
Professor of Movement Science
University of Michigan
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(734) 764-5210, lorips@umich.edu

Accomplished leader with extensive experience in higher education, government, and space research organizations. Proven ability to adapt and excel in diverse settings, demonstrated by successful leadership at higher education institutions, NASA, and university consortiums. Documented success with pioneering research, developing strategic plans, leading organizations through growth, outstanding hiring decisions, and securing significant funding. Committed to teaching, mentoring, and service with a focus on enhancing opportunities for all.

PROFESSIONAL EXPERIENCE SUMMARY

Leadership
Demonstrated versatile and entrepreneurial leadership style with a proven ability to adapt quickly and ensure success across a variety of institutions with differing needs and expectations, including:

- **Federal government**: National Aerospace and Space Administration (NASA)
- **University consortiums supporting NASA**: Universities Space Research Association (USRA) and National Space and Biomedical Research Institute (NSBRI)
- **Higher education**: Experience in both private (Syracuse University) and public (University of Michigan) institutions.

Research

- Led diverse international and transdisciplinary research teams, successfully translating results into operational use on the International Space Station.
- Developed a strategic 10-year cost and schedule plan to identify countermeasure solutions for human health risks associated with the Mars mission.
- Directed the development and implementation of NASA's exercise program (SPRINT) for the International Space Station.
- Conducted both individual and collaborative team-based research, serving as the lead investigator for approximately $26M in research funding, cumulating in over 125 publications.

Teaching

- Developed and implemented comprehensive coursework for learners at all levels of higher education, from first-year undergraduates to advanced medical fellows.

Service

- Dedicated 30 years to meaningful service, with a strong focus on improving the quality of education for all.

Academic, Scholarly, and Leadership Experience

Dean and Professor of Movement Science
University of Michigan – School of Kinesiology
July 2016 – Present

Strategic Leadership: Guided the School through a 9-year period of strategic growth, enhancing academic excellence, student success, operational efficiency, administrative infrastructure, and cost-effectiveness.

- Led a transformative $120M building renovation.
- Doubled the operating budget from $16M to $34M.
- Increased the number of students by 50% from 1000 to 1500.
- Expanded the faculty from 49 to 78 members.
- Developed five new graduate and undergraduate degree programs
- Significantly increased fundraising, growing the endowment from $13M to $31M.
- Boosted research expenditures from $6M to $11M annually.

Culture, Equity and Community: Received an outstanding achievement award for faculty mentoring, support and inclusion.

Financial and Strategic Planning: Developed the School's sophisticated budget and predictive models for strategic planning. Led the design and execution of a $28M capital campaign strategy, the largest in the School's history.

Team Leader, Musculoskeletal Alterations
Baylor College of Medicine
National Space Biomedical Research Institute
June 2013 – July 2016

- Led a team of over 75 research projects and investigators addressing human health risks in long-term spaceflight, particularly related to skeletal muscle and bone.
- Enhanced research impact and coordination by facilitating presentations, data sharing, and rapid communication among team members.

Lead Scientist, Exercise Physiology & Countermeasures
NASA Johnson Space Center & Universities Space Research Association
December 2008 – July 2016

- Developed a 10-year strategic cost and schedule plan for research required to support human expeditions to Mars
- Led the development, research, and operational transition for SPRINT, an innovative exercise prescription designed to mitigate deconditioning in long-duration spaceflight crew members. SPRINT effectively improved their cardiorespiratory, muscular, and bone health, which is still in operational use today.
- Established fitness-for-duty standards for various physical fitness criteria for US astronauts
- Received NASA group achievement awards for three projects:

    - SPRINT ultrasound: Developed ground-based, remote guided ultrasound hardware and protocols to evaluate muscle size during spaceflight.
    - Sex and gender report: Analyzed research literature to identify sex differences in response to long-duration flights.
    - Functional tasks: Developed occupational work task tests to assess crew readiness for mission duties before and after spaceflight.
- Awarded NASA Elite Team award from the Software, Robotics, and Simulation Division for developing a lower body loading belt in two months.
- Collaborated closely with international counterparts from all space-faring nations, including Canada, Europe, Russia, and Japan.

Adjunct Full Professor, Division of Endocrinology
University of Texas Medical Branch
July 2010 – July 2017

- Developed and delivered educational programming for the Aerospace Medicine Fellowship program, focusing on the health risks of long-duration spaceflight and exercise countermeasures as mitigation.
- Served on PhD student dissertation committees.

Adjunct Full Professor, Department of Health and Human Performance
University of Houston
June 2009 – July 2017

- Mentored and advised PhD students conducting dissertation research with NASA.
- Guest lectured in various classes.

Exercise Physiology Lead, National Aeronautics and Space Administration
Johnson Space Center & University Space Research Association
September 2008 – December 2008

- Led the development of identifying human health risks associated with long-duration Mars expeditions.
- Reorganized NASA's exercise countermeasures team and research priorities.

Chair, Department of Exercise Science
Syracuse University
May 2004 – May 2008

- Developed PhD program in collaboration with the Science Education department.
- Doubled the size of the faculty and secured commitments, resources and locations for new laboratories.

Professor, Department of Exercise Science
Syracuse University
January 2008 – September 2008

Associate Professor, Department of Exercise Science
Syracuse University
July 2001 – December 2007

Adjunct Assistant Professor, Department of Neuroscience and Physiology
State University of New York Upstate Medical University
April 1996 – May 2004

Assistant Professor, Department of Exercise Science
Syracuse University
January 1996 – July 2001

OTHER POSITIONS

Assistant Professor, Department of Biological Sciences
Ohio University
September 1995 – December 1995

Instructor, Department of Biological Sciences
Ohio University
September 1994 – June 1995

Project and Curriculum Assistant
National Aeronautics and Space Administration Space Life Science Training Program
The Bionetics Corporation, Kennedy Space Center
January 1990 – August 1990

Teaching Assistant, School of Kinesiology
Simon Fraser University
September 1989 – January 1990

Teaching Assistant, College of Osteopathic Medicine
Department of Zoological and Biomedical Sciences
Ohio University
September 1990 – June 1991
September 1986 – June 1988

Physiology Tutor, College of Osteopathic Medicine
Ohio University
September 1988 – June 1989

RESEARCH POSITIONS

NASA Lead Scientist
Exercise Physiology and Countermeasures
National Aeronautics and Space Administration (NASA)
January 2012 – July 2016

Project Scientist
Johnson Space Center & University Space Research Association
National Aeronautics and Space Administration (NASA)
January 2009 – January 2012

Exercise Physiology Lab Lead
Johnson Space Center & University Space Research Association
National Aeronautics and Space Administration (NASA)
September 2008 – December 2008

Research Associate Professor
Department of Physical Medicine and Rehabilitation
Syracuse University
August 2001 – September 2008

Senior Research Associate
Maxwell Center for Policy Research
Syracuse University
January 1998 – September 2008

Director
Musculoskeletal Research Laboratory
Syracuse University
August 1997 – September 2008

Visiting Scholar
Department of Physiology
Michigan State University
July 1995 – July 1996

Research Associate
Department of Physiology
Michigan State University
April 1994 – July 1995

National Aeronautics and Space Administration Graduate Student Researchers Program
Ohio University & National Aeronautics and Space Administration (NASA)
September 1991 – April 1994

National Aeronautics and Space Administration Space Life Sciences Training Program
National Aeronautics and Space Administration (NASA)
January 1990 – August 1990

LEADERSHIP & PROFESSIONAL TRAINING

University of Michigan

- Strategies and Tactics for Recruiting to Improve Diversity and Excellence, Advance Program - 2018, 2021, 2024
- Creating Climates Resistant to Sexual Harassment: A Toolkit for Leaders – February 2020
- Provost's Dean Training – 2016 to 2017
- Leadership Development: Diversity, Equity and Inclusion– June 2018
- Nano-MBA, Ross School of Business – May 2017
- A Thousand Cuts: Responding to Climate Concerns, University of Michigan – February 2017
- Freedom Of Information Act (FOIA), Chief FOIA officer - 2016
- Using Financial Resources Effectively, Vice Provost Budgetary Affairs - 2016
- Development, Vice President for Development - 2016
- Working Effectively with Faculty, Vice Provost Academic & Faculty Affairs - 2016

National Aeronautics and Space Administration (NASA)

- NASA Science Management Training – September 2013
- Working with Space Station International Partners – October 2012
- Effectiveness for Team Leadership and Communication – July 2012
- Project Management – March 2012
- Media Training – October 2011
- Leadership Principles for Today's Professional – April 2011
- Dynamics of Daily Negotiation – January 2011
- Communication Skills for the Technical Professional – January 2011
- Challenges Facing the Technical Leader – January 2011

EDUCATION

Postdoctoral Fellow	Department of Physiology – advisor Dr. Ronald Meyer Michigan State University, 1994 – 1996
Ph.D.	Department of Biological Sciences – advisor Dr. Gary Dudley Ohio University, June 1994
M.S.	Department of Zoological & Biomedical Sciences – advisor Dr. Fredrick Hagerman Ohio University, August 1989
B.S.	Honors Tutorial College (Zoology) Ohio University, August 1989

FUNDED GRANTS

National Aeronautics and Space Administration. *Integrated Resistance and Aerobic Training Study*. LL Ploutz-Snyder, PI. 10/1/2016-9/30/2019. $154,559.

National Aeronautics and Space Administration. *Exploring the relationship between in-flight training load data and musculoskeletal health outcomes*. LL Ploutz-Snyder, PI. NASA NNX16AO73G. 7/26/2016-7/25/2019. $56,757.

National Aeronautics and Space Administration. *Gravitational Dose and Multi-system Physiologic Response.* LL PLOUTZ-SNYDER, PI. 6/1/2016-5/31/2017, $398,233.

National Aeronautics and Space Administration. *Development of a Muscle Adaptation in Space-Flight Simulator (MASS).* LL PLOUTZ-SNYDER, Collaborator. 6/1/2016-3/31/2019, $750,000.

National Aeronautics and Space Administration. *Sweat Rates during Continuous and Interval Aerobic Exercise: Implications for NASA Multipurpose Crew Vehicle (MPCV) Missions.* LL PLOUTZ-SNYDER, Co-PI. 10/1/2015-9/30/2016, $100,000.

National Aeronautics and Space Administration. *Exploring the Relationship between In-flight Training Load Data and Musculoskeletal Health Outcomes.* LL PLOUTZ-SNYDER, PI. 10/1/2014- 9/30/2015, $100,000.

National Aeronautics and Space Administration. *Influence of Exercise Modality on Cerebral-Ocular Hemodynamics and Pressures.* LL PLOUTZ-SNYDER, Co-I. 10/1/2014-9/30/2015, $100,000.

National Space Biomedical Research Institute. *Developing Personalized Countermeasures for Sensorimotor Adaptability: A Bedrest Study*. LL PLOUTZ-SNYDER, Co-I. 6/1/2014-5/31/2017, $1,200,000.

National Aeronautics and Space Administration, EPSCoR solicitation NNH13ZHA001C. *Mechanical Unloading and Irradiation-induced Musculoskeletal Loss and Dysfunction: Molecular Mechanisms and Therapeutic Nanoparticles*. PI M Jaridi, West Virginia University Research Corporation, LL PLOUTZ-SNYDER, Consultant. $750,000.

National Space Biomedical Research Institute solicitation NNJ12ZSA002N: *Cyber Partners: Harnessing Group Dynamics to Boost Motivation for More Efficient Exercise*. PI D Feltz, Michigan State University, LL PLOUTZ-SNYDER, Co-I. 6/2013-5/2016. $1,190,655.

National Space Biomedical Research Institute. *Integrated Resistance and Aerobic Exercise Training with Small Compact Exercise Equipment*, submitted in response to NRA NNJ11ZSA002N. LL PLOUTZ-SNYDER, PI. 10/2012-9/2016, $1,600,000.

National Space Biomedical Research Institute*. Musculoskeletal Alterations Team*, submitted in response to NSBRIRFA-12-01. LL PLOUTZ-SNYDER, Team Leader. 6/2012-5/2016, $240,000.

European Space Agency. *Biomechanical Quantification of Bone and Muscle Loading to Improve the Quality of 0g Countermeasure Prescriptions for Resistive Exercise*. LL PLOUTZ-SNYDER, Co-I, pending final selection, score 91/100.

National Aeronautics and Space Administration. *Biomechanical Analysis of Treadmill Locomotion on ISS*, co-I, PI. J DeWitt. $50,641 May 2009.

National Aeronautics and Space Administration. *Integrated Resistance and Aerobic Training Study (SPRINT)* . Principal Investigator. 10/09-9/16, $3,942,983.

National Aeronautics and Space Administration. *Essential Amino Acid-Carbohydrate Intake Prior to Low Load Resistance Training with Blood Flow Restriction as a Countermeasure to Unweighting.* $82,000, 2008-20011, P.I. LL PLOUTZ-SNYDER. Training grant for Ph.D. student K Hackney.

National Aeronautics and Space Administration. *Efficacy of resistance exercise coupled with blood flow restriction as a countermeasure to unilateral lower limb suspension.* $82,000, 2006-2009, P.I. LL PLOUTZ-SNYDER. Training grant for Ph.D. student SB Cook.

Department of Defense - SBIR subcontract with Intelligent Automation, Inc. *UWB Muscle Water Sensor Phase 2*. Contract #W81XWH-04-C-0011 $750,000, 3/06-10/08, Subcontract to LL Ploutz-Snyder $150,000.

Department of Defense - SBIR subcontract with Intelligent Automation, Inc. Muscle Water Sensor. 2/04-06/04, $23,000. PI - LL Ploutz-Snyder

US Department of Education – National Institute on Disability and Rehabilitation Research - Field Initiated Research Program. *Muscle strength and functional performance in individuals with Down Syndrome*. $448,621, 7/1/03-6/30/06. Co-investigator.

National Aeronautics and Space Administration. *Neuromuscular function and countermeasures to pronlonged unweighting*. $72,000, 2003, P.I. LL PLOUTZ-SNYDER. Training grant for Ph.D. student BC Clark

SUNY Upstate Medical University, *Research Support for Faculty*, $43,512. P.I. PLOUTZ-SNYDER.

Life Fitness Academy. Equipment grant in support of exercise training for older adults. $22,000, 2003, P.I. LL PLOUTZ-SNYDER.

Michael Pollock Memorial Grant, Life Fitness Academy, *Traditional vs. functional strength training in older individuals with pre-clinical disability*, $5,000, 2001, P.I. L.L. PLOUTZ-SNYDER.

Hartford Walking Systems, *Comparison of assisted and non-assisted walking*, $10,000, 2001, P.I. L.L. PLOUTZ-SNYDER

National Institute on Aging. *Pilot study for the relationship of muscle strength to function*. 1/98 to 12/98. $17896.78. P.I. L.L. PLOUTZ-SNYDER.

Quaker Oats Corporation (Gatorade). *Animation of MRI Images of Gastric Emptying*, 1/12/97. $5500. P.I. L.L. PLOUTZ-SNYDER.

Quaker Oats Corporation (Gatorade). *Measurement of Gastric Emptying Using Magnetic Resonance Imaging.* 7/95-6-96. $20,000. P.I. L.L. PLOUTZ-SNYDER.

National Aeronautics and Space Administration Graduate Student Researchers Program. *Skeletal Muscle Activation Patterns Following Periods of Prolonged Use and Disuse*. 10/92 to 10/94. $62,000. P.I. L.L. PLOUTZ-SNYDER.

National Aeronautics and Space Administration. *Comparison of Exercise Training Regimens For Long-Term Spaceflights*. 1/93 to 12/93. $45,000. Co-investigator. L.L. PLOUTZ-SNYDER

Ohio University Research Committee. *Hyperoxic Training*. 1989. $5150. CoP.I. L.L. PLOUTZ.

John Houk Research Award, *Metabolic and Cardiovascular Adaptations to Hyperoxic Training*,. 1989. $500. P.I. L.L. PLOUTZ.

GRANTS SUBMITTED BUT NOT CURRENTLY FUNDED

NASA NNJ15ZSA001N-NSBRI. SPACEXC: Simulated Partners for Collaborative EXergame Cycle. Co-I LL PLOUTZ-SNYDER, $551,704.

NASA NNJ15ZSA001N-FLAGSHIP. *The Use of Multi-Omics to Characterize Disuse- and Exercise-Induced Adaptability*. Co-I LL PLOUTZ-SNYDER, $500,000.

NASA NNJ15ZSA001N-FLAGSHIP. *Development of a Muscle Adaptation in Space-flight Simulator (MASS).* Collaborator LL PLOUTZ-SNYDER, $500,000.

NASA Directed Study. *Identification of Fitness Standards for Exploration Mission Tasks*. Co-I LL PLOUTZ-SNYDER, $896,948.

NASA Omnibus NRA. *An Innovative Approach to Prescribing Treadmill Exercise Intensity and Optimizing Bone Loading*. PI M Downs, $100,000, Co-I LL PLOUTZ-SNYDER, invited to step 2.

NASA Omnibus NRA. *Gait Retraining to Improve Efficacy of Treadmill Exercise to Protect Lower Extremity Bone Mineral Density*. PI J De Witt, $100,000, Co-I LL PLOUTZ-SNYDER, invited to step 2.

NASA Omnibus NRA. *Influence of Gravity Replacement Load upon Running Biomechanics in Microgravity*. PI J De Witt, $100,000, Co-I LL PLOUTZ-SNYDER, invited to step 2.

NASA Omnibus NRA. *Mechanisms Contributing to Alterations in Calf Muscle Mass and Strength: Implications for an Integrated Countermeasure*. PI J Scott, $100,000, Co-I LL PLOUTZ-SNYDER, invited to step 2.

NASA Omnibus NRA. *Optimal Loading Profiles for Small Compact Exercise Devices*. PI LL Ploutz-Snyder, $100,000, invited to step 2.

NASA Omnibus NRA. *Sweat Rates During Continuous and Interval Aerobic Exercise: Implications for NASA Multipurpose Crew Vehicle (MPCV) Missions*. PI J Ryder, $100,000, Co-I LL PLOUTZ-SNYDER, invited to step 2.

National Space Biomedical Research Institute solicitation NNJ13ZSA002N: *Exercise Therapy to Mitigate Cervico-Thoracic Deconditioning during Spaceflight*. PI LL PLOUTZ-SNYDER, $1,200,000. Score 88/100, no research funded on this topic.

National Space Biomedical Research Institute solicitation NNJ12ZSA002N: *Exergaming for Astronaut Musculoskeletal and Cardiovascular Maintenance*. PI D DiPasquale, Harvard, Consultant LL PLOUTZ-SNYDER.

NASA Omnibus NRA. *Novel Assessment of Dynamic Muscle Function Using Ultrasound*. PI J Scott, USRA, $100,000, Co- I LL PLOUTZ-SNYDER.

NASA Omnibus NRA. *Development of a Sensorimotor Countermeasure to Enhance the Efficacy of Inflight Exercise, Reduce the Potential for Post-flight Orthostatic Intolerance and Limit Space Flight Induced changes in the major postural muscles.* PI M Reschke, Co-I LL PLOUTZ-SNYDER. 8/1/12-7/31/13. $99,744, invited to step 2, not funded.

NASA NRA. *Comprehensive Morphological and Functional Muscle Assessment for Long-duration Spaceflight.* PI LL PLOUTZ-SNYDER. 10/1/2011-9/30/2014. $908,957. Score 83/100.

National Space Biomedical Research Institute. *Effects of Radiation on the Effectiveness of Exercise Countermeasures to Protect Skeletal Muscle Function during Hindlimb Unloading.* PI Jeffrey Ryder Co-I LL PLOUTZ-SNYDER. 10/1/2011-9/30/2014. $1,007,831. Score 69/100.

National Space Biomedical Research Institute. *Multiscale Modeling to determine In-vivo Muscular Force and Bone Strain for the Assessment of Exercise Countermeasures to Mitigate Muscle and Bone Loss.* PI Melissa Scott-Pandorf, Co-I LL PLOUTZ-SNYDER. 10/1/2011-9/30/2014.

National Dairy Council Step 1&2 - *Does Milk Enhance The Effectiveness of Exercise for the Maintenance of Muscle Function during Extended Periods of Unloading?* PI LL PLOUTZ-SNYDER. 1/1/2011-12/31/2013. $176,000. Invited to step 2, not funded.

NASA NRA – NNJ09ZSA002N, *Maintenance of Cardiovascular, Muscle and Bone Health with a Combined Exercise and Nutrition Program*. PI LL PLOUTZ-SNYDER. 1/1/2011-12/31/2013. $977,069. Score 69/100.

NASA NRA – NNJ09ZSA002N, *Developing Submaximal Exercise Protocols to Predict Readiness for Lunar Mission Specific EVA Tasks in Astronauts*. PI Richard Simpson, Co-I LL PLOUTZ-SNYDER.

NASA NRA – NNJ09ZSA002N. *Development of Performance Measure of Readiness to Perform for EVA Tasks.* PI Ram Bishu, Univ of Nebraska, Co-I LL PLOUTZ-SNYDER. Not Scored.

NASA NRA – NNJ09ZSA002N. *Omega-2 Fatty Acids: A Nutritional Countermeasure for Spaceflight-induced Bone and Muscle Loss*. PI Scott Smith, NASA, Collaborator LL PLOUTZ-SNYDER. Score 68/100.

National Aeronautics and Space Administration. *KineSys: Novel Exercise Device for use in Space-based Applications.* Co-investigator LL PLOUTZ-SNDYDER, with Mayhew and Bachrach, $350,000. Submitted September 2007.

Office of Naval Medical Research. *Non-invasive Monitoring of Dissolved Nitrogen and Hydration for Prevention of Decompression Sickness.* $675,000 total, $232,000 to Syracuse University as subcontract to LL PLOUTZ-SNYDER, submitted July 2007.

National Space Biomedical Research Institute. *Low Load Resistance Training coupled with Blood Flow Occlusion as a Countermeasure to Prolonged Disuse*. PI LL PLOUTZ-SNYDER. $659,432, 2007.

National Institute of Health R01. *Exercise Effects on Ectopic Fat Accumulation in Young and Older Obese Subjects*. Co-I LL PLOUTZ-SNYDER. $1,321,870, 2007.

National Institute of Health, R21. *An Intelligent Passive Active Motor Recovery Strategy for Stroke Rehabilitation*. Co-I LL PLOUTZ-SNYDER. $380,921, 2006.

National Institute of Health R03. *Effects of Task Constrains on Postural Stability in Aging*. Co-I LL PLOUTZ-SNYDER. $150,000, 2006.

National Institute of Health. *Tracking Muscle Fluid Constituents using Spectrographic Electromagnetic Probing*. Submitted by TransTech Inc. PI R Gamache, Consultant LL PLOUTZ-SNYDER. $500,000, 9/31/05-8/31/07.

General Mills Corporation Youth Nutrition and Fitness Grants. *Liberty Kids: Healthy Bodies, Healthy Minds*. Co-Investigator – in review LL PLOUTZ-SNYDER. $10,000, 05/05-09/06.

National Aeronautics and Space Administration. *Neuromuscular Adaptation to Disuse*. PI LL PLOUTZ-SNYDER. $459,851, 6/04-5/07, submitted 7/03.

US Department of Education – National Institute on Disability and Rehabilitation Research – RERC Program. *Center on Functional Performance and Physical Rehabilitation*. Co-I LL PLOUTZ-SNYDER. $4,492,996, 12/1/2002-11/30/2007, submitted 8/02.

National Institute of Health. *An Interdisciplinary Program for Caregiver Well-being*. Co-I LL PLOUTZ-SNYDER. $2,453,667, 1/1/03-12/31/07, submitted 2/02.

Doris Duke Charitable Foundation. *Stroke Rehabilitation – Muscle Spasticity*. PI LL PLOUTZ-SNYDER. $200,000, submitted 11/27/01.

National Institute of Health. *Abdominal Fat Loss with Diet and Exercise in Type 2 Diabetic Women*. Co-I LL PLOUTZ-SNYDER. $1,000,000, submitted 6/1/01.

National Institute on Aging. *Influence of Skeletal Muscle on Physical Function*. PI LL PLOUTZ-SNYDER. $391,564, 1999.

National Institute on Aging. *Muscle Strength and Functioning at Older Ages*. PI LL PLOUTZ-SNYDER. $75,500, 1999.

National Institute on Aging. *Center for Demography and Economics of Aging (Maxwell*). PI Doug Wolf, Senior Faculty Associate LL PLOUTZ-SNYDER. $2,000,000. ~$70,000 specifically for the Musculoskeletal Research Laboratory/salaries/equipment/ etc., 1998.

North American Spine Society. *Using muscle functional magnetic resonance imaging to evaluate the effects of spinal manipulative therapy and resistance training on the activation patterns of the lumbar extensor muscles during exercise in chronic low back pain patients*. PI LL PLOUTZ SNYDER. $23,285, 1997.

National Aeronautics and Space Administration. *Resistance Exercise Countermeasure to Unweighting Induced Muscle Atrophy and Dysfunction*. PI LL PLOUTZ-SNYDER. $525,659, first submission and requested revision in 1996.

National Institute of Aging. *Decreased Skeletal Muscle Function in Aging Humans*. PI LL PLOUTZ-SNYDER. $67,651, 1996.

American Federation of Aging Research. *Skeletal Muscle Function in Aging Humans.* PI LL PLOUTZ-SNYDER. $40,000, 1996.

Women's Sports Foundation. *Fluid Rehydration and Swimming*. PI PLOUTZ-SNYDER. $5,000, 1996.

STUDENT GRANTS FUNDED

Syracuse University: Graduate School Travel Grant. *Effects of Exercise Intensity and Vascular Occlusion Pressure and Duration on Skeletal Muscle Function*. $400. Student: Summer Cook. 2007.

Syracuse University: Graduate School Travel Grant. *The Effect of Resistance Training in Individuals with Down syndrome*. $400. Student: Patrick Cowley. 2007.

Syracuse University: Graduate School Travel Grant. *Reliability and Validity of Handheld Dynamometer to Assess Knee and Ankle Strength in an Older Adult Population.* $400. Student: Seung Jung. 2007.

Syracuse University: Graduate School Travel Grant. *Influence of Motor Imagery on Disuse-induced Strength Loss and Central Activation Function*. $400. Student: Summer Cook. 2006

Syracuse University: Graduate School Travel Grant. *Kinesthetic Motor Imagery Acutely Increases Spinal Excitability.* $400. Student: Patrick Cowley. 2006

Syracuse University: SOE Creative Research Grant. *Efficacy of Resistance Exercise Coupled with Blood Flow Restriction as a Countermeasure to Prolonged Unweighting*. $1000. Student: Summer Cook. 2006.

Syracuse University: SOE Creative Research Grant. *Neuromuscular Characteristics of Individuals with Down syndrome*. $610. Student: Patrick Cowley. 2006.

American College of Sports Medicine. *Resistance Exercise and Ischemia in Simulated Spaceflight*. $5000. Student: Summer Cook. 2006.

National Aeronautics and Space Administration Space Physiology Research Grant through the American College of Sports Medicine Foundation. *Countermeasures to Disuse-induced Neuromuscular Dysfunction*. $5,000. 2005-2006.

SUNY Upstate Medical University. *Sensory Threshold Electrical Stimulation: Effects on Muscle MRI and mf-MRI*. $12,500. Student: Lynne Logan. February 2005

TASCNetwork. *Sensory Threshold Electrical Stimulation: Effects on Muscle MRI and mf-MRI*. Equipment grant of $15,000. 2005.

American Physical Therapy Association. *Sensory Threshold Electrical Stimulation: Effects on Muscle MRI and mf-MRI*. $1,000. Student: Lynne Logan. February 2005.

National Aeronautics and Space Administration Space Physiology Research Grant through the American College of Sports Medicine Foundation. *Neuromuscular Adaptations to Simulated-microgravity*. $2,500. 2004-2005.

American College of Sports Medicine & Robert Wood Johnson Foundation. *Traditional vs. Functional Strength Training in Older Subjects*. $10,000. Student: Todd Manini.

Syracuse University: SOE Creative Research Grant. *Functional versus Resistance Training: Improvement of Physical Function in Functionally Limited Older Adults.* $1000. Student: Todd Manini.

Sidney Young Research Award. *Relationship of Self-Reported and Observed Performance in Daily Tasks among Older Adults.* $215.00. Student: Summer Baldwin.

Syracuse University: SOE Creative Research Grant. *Relationship of Self-Reported and Observed Performance in Daily Tasks among Older Adults.* $201.21. Student: Summer Baldwin.

Mid-Atlantic Region Chapter of the American College of Sports Medicine Student Research Grant Award. *Gender Differences in Skeletal Muscle Fatigability* $500. Student: Brian Clark. November 2002.

Syracuse University: SOE Creative Research Grant. *Gender Differences in Human Skeletal Muscle Fatigability*. $1,000. Student: Brian Clark. July 2002.

Syracuse University: Sidney W. Young Graduate Student Research Award. *Gender Differences in Skeletal Muscle Fatigability.* $375. Student: Brian Clark. February 2002.

Syracuse University: Graduate School Travel Grant. *Effect of Muscle Fatigue on the Electromyogram Characteristics of the Lumbar Para-spinal and Hip Extensor Muscles*. $400. Student: Brian Clark. January 2002.

Syracuse University: Graduate School Travel Grant. *An EMG and Force Comparison for Walking with Crutches and an Ergonomically Designed Walker.* $400. Student: Todd Manini. January 2002.

National Aeronautics and Space Administration. *Integrated Resistance and Aerobic Training Study (SPRINT)*. LL PLOUTZ-SNYDER, PI. 10/09-9/16, $3,942,983.

National Aeronautics and Space Administration. *Biomechanical Analysis of Treadmill Locomotion on ISS*, LL PLOUTZ-SNYDER, co-I, PI J DeWitt. May 2009, $50,641.

National Aeronautics and Space Administration. *Essential Amino Acid-Carbohydrate Intake Prior to Low Load Resistance Training with Blood Flow Restriction as a Countermeasure to Unweighting.* LL PLOUTZ-SNYDER, PI. Training grant for Ph.D. student K Hackney. 2008-2011, $82,000.

National Aeronautics and Space Administration. *Efficacy of Resistance Exercise Coupled with Blood Flow Restriction as a Countermeasure to Unilateral Lower Limb Suspension.* LL PLOUTZ-SNYDER, PI. Training grant for Ph.D. student SB Cook. 2006-2009, $82,000.

Department of Defense - SBIR subcontract with Intelligent Automation, Inc. *UWB Muscle Water Sensor Phase 2*. Contract #W81XWH-04-C-0011 $750,000, 3/06-10/08, Subcontract to LL PLOUTZ-SNYDER. $150,000.

Department of Defense - SBIR subcontract with Intelligent Automation, Inc. Muscle Water Sensor. LL PLOUTZ-SNNYDER, PI. 2/04-06/04, $23,000.

US Department of Education – National Institute on Disability and Rehabilitation Research - Field Initiated Research Program. *Muscle Strength and Functional Performance in Individuals with Down syndrome*. LL PLOUTZ-SNYDER, Co-I. 7/1/03-6/30/06, $448,621.

National Aeronautics and Space Administration. *Neuromuscular Function and Countermeasures to Prolonged Unweighting*. Training grant for Ph.D. student BC Clark. LL PLOUTZ-SNYDER, PI. 2003, $72,000.

SUNY Upstate Medical University, *Research Support for Faculty*, LL PLOUTZ-SNYDER, PI. $43,512.

Life Fitness Academy. Equipment grant in support of exercise training for older adults. LL PLOUTZ-SNYDER, PI. 2003, $22,000.

Michael Pollock Memorial Grant, Life Fitness Academy, *Traditional vs. Functional Strength Training in Older Individuals with Pre-clinical Disability*. LL PLOUTZ-SNYDER, PI. 2001, $5,000.

Hartford Walking Systems, *Comparison of Assisted and Non-assisted Walking*. LL PLOUTZ-SNYDER, PI. 2001, $10,000.

National Institute on Aging. *Pilot Study for the Relationship of Muscle Strength to Function*. LL PLOUTZ-SNYDER, PI. 1/98-12/98, $17896.78.

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PLOUTZ-SNYDER LL, Foley J, Ploutz-Snyder RJ, Kanaley JA, Sagendorf K, Meyer R. Gastric Gas and Fluid Emptying Assessed by Magnetic Resonance Imaging in Humans. *European Journal of Applied Physiology*, 79:212-220, 1999.

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Ludman CN, Cooper TG, PLOUTZ-SYNDER LL, Potchen EJ, Meyer RA. Force of Voluntary Exercise does not Affect Sensorimotor Cortex Activation as Detected by Functional MRI at 1.5 T. *NMR Biomed,* 9(5):228-32, 1996.

Conley MS, Foley JM, PLOUTZ-SNYDER LL, Meyer RA, Dudley GA. Effect of Acute Head-down Tilt on Skeletal Muscle Cross-sectional Area and Proton Transverse Relaxation Time. *Journal of Applied Physiology*, 81:1572-1577, 1996.

PLOUTZ-SNYDER LL, Tesch PA, Hather BM, Dudley GA. Vulnerability to Dysfunction and Muscle Injury after Unloading. *Archives of Physical Medicine and Rehabilitation*, 77:773-7, 1996.

PLOUTZ-SNYDER LL, Simoneau JA, Gilders RM, Staron RS, Hagerman FC. Cardiorespiratory and Metabolic Adaptations to Hyperoxic Training. *European Journal of Applied Physiology*, 73:38-48, 1996.

PLOUTZ-SNYDER LL, Convertino VA, Dudley GA. Resistance Exercise Induced Fluid Shifts: Change in Active Muscle Size and Plasma Volume. *American Journal of Physiology: Regulatory, Integrative, and Comparative Physiology,* 38:R536-R543, 1995.

PLOUTZ-SNYDER LL, Tesch PA, Crittenden D, Dudley GA. Effect of Unweighting on Muscle Mass Involvement in Exercise. *Journal of Applied Physiology,* 79(1):168-75, 1995.

Vandenborne K, Walter G, PLOUTZ-SNYDER LL, Staron R, Fry A, DeMeirleir K, Dudley G, Leigh JS. Energy Rich Phosphates in Slow and Fast Twitch Human Skeletal Muscle. *American Journal of Physiology: Cell Physiology*, 268 (37): C869-C876, 1995.

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PLOUTZ LL, Tatro DL, Dudley GA, Convertino VA. Plasma Volume and Baroreflex Responsiveness during 24 Hours Following Resistance Exercise. *Clinical Physiology,* 13:429-438, 1993.

OTHER PUBLICATIONS

English KL, Hackney KJ, Redd E, De Witt JKK, Ploutz-Snyder RJ, PLOUTZ-SNYDER LL. A Ground-based Comparison of the Muscle Atrophy Research and Exercise System (MARES) and a Standard Isokinetic Dynamometer. *National Aeronautics and Space Administration (NASA) Technical Paper*-2011-216144, 2011.

INVITED REVIEWS / BOOK CHAPTERS

PLOUTZ-SNYDER LL. Evaluating Countermeasures in Analogs. A mini-review in the special topics issue Analogs of Microgravity: Space Research without Leaving the Planet. *Journal of Applied Physiology*, submitted 2015.

PLOUTZ-SNYDER LL and Scott J. Veracity of Data: Understanding Validity and Reliability. *ACSM Research Methods*, LWW, Ed. LE Armstrong and WJ Kraemer, 2015.

Schneider VS, PLOUTZ-SNYDER LL, LeBlanc AD, Sibonga J. Musculoskeletal Adaptation to Space Flight, Section IV. Space Flight and Crew Health – Adaptation, Pathophysiology, Rehabilitation, and Countermeasures. *Space Physiology and Medicine – Evidence and Practice, Fourth Edition* written in 2014.

Graves JE, PLOUTZ-SNYDER LL, Pollock ML. Physiological Consequences of Deconditioning in Physically Active Populations, *Deconditioning-Reconditioning*, Gordon & Breach, CRC Press, Ed. J Greenleaf, 2004.

PLOUTZ-SNYDER LL. Resistance Training in Women. *Resistance Training for Health and Rehabilitation*, Human Kinetics, Eds. JE Graves, B Franklin, 2004.

Dudley GA and PLOUTZ-SNYDER LL. Deconditioning and Bedrest: Musculoskeletal Response, *ACSM Resource Manual for Guidelines for Exercise Testing and Exercise Prescription – 4th edition*. 2001.

Dudley GA and PLOUTZ-SNYDER LL. Bedrest and Deconditioning, *ACSM Resource Manual for Exercise Testing and Exercise Prescription - 3rd edition*. 1998.

TECHNICAL REPORTS

Arzeno N, Martin D, Caine T, Hackney K, PLOUTZ-SNYDER LL, Scott J. Novel Assessment of Dynamic Muscle Function Using Ultrasound. In: *Johnson Space Center Research and Technology Development Report 2014,* Human Health, Life Support and Habitation Systems, and Space Medicine, NASA Report TM-2013-217382, p. 41-42, Published by the Johnson Space Center External Relations Office,. http://www.nasa.gov/sites/default/files/files/2014_Final.pdf

INVITED PRESENTATIONS

AKA Leadership Institute. Branding and Marketing Your Programs, Department, and School. Recurring annually

Pennington Biomedical Research Center, LA. Bone & Muscle Loading for Space Flight, December 2024

College of Engineering, University of Michigan. BLiSS Symposium - VIP Panel: Women in Aerospace, April 2024

College of Engineering, University of Michigan. Mars Human Health and Performance Monitoring System (M-HHaPS), March 2024

Oklahoma Aerospace Institute for Research and Education, OK. The Human Research Program for Civilians in Spaceflight & Space Habitation (HRP-C), January 2024

The National Academy of Kinesiology. NAK: Honoring the Past, Celebrating the Present, Embracing the Future, September 2023

Pennsylvania State University Noll Seminar. Can Exercise Completely Prevent Loss of Fitness and Function During Periods of Extended Disuse?, October 2020

Pennsylvania State University, Department of Kinesiology Colloquium. Airplanes, rockets, and hospitals-creative research approaches to optimize exercise programs, October 2020

Texas A&M University, College Station, TX. Strategies for Development of Exercise Programs to Mitigate Multi-system Deconditioning during Disuse, November 2018.

Marquette University, Milwaukee, WI. A Human Mission to Mars? Physiologic Barriers to Long Duration Spaceflight, March 2017.

Department of Physical Medicine and Rehabilitation Grand Rounds, University of Michigan. Mitigation of Prolonged Bed Rest Deconditioning with Resistance and Aerobic Exercise, August 2016.

Effects of Microgravity on Musculoskeletal and Cardiovascular Physiology and the Role of Exercise Countermeasures in the Symposium Physics and Biology of a Mars Mission, sponsored by United Nations Committee on Space Research at the Radiation Research Society annual meeting, Weston, FL, September 2015.

Highlights from ISS Preliminary Results from NASA's Sprint Study: Exercise Prescription for Protection of VO_2-max and Muscle Strength. Humans in Space, Prague, Czech Republic, June 2015.

International Space Medicine Summit. Rice University, Houston, TX. Invited panelist for Use of Spaceflight Analogs in Research, June 2015.

NSBRI Symposium towards Integrated Countermeasures for Deep Space Exploration: Vestibular Function for Balance and Beyond. Exercise Countermeasures, May 2015.

Ohio University Honors Tutorial College Golos Lecture Series, Athens, OH. Human Mission to Mars: Barriers to Long Duration Spaceflight, October 2012.

European Space Agency, Noordwijk, The Netherlands. Bed Rest Strategic Planning Meeting. Exercise Countermeasures during Long Duration Bed Rest, April 2012.

Cleveland Clinic, Cleveland, OH. Current Topics in Space Medicine Lecture Series. Exercise Countermeasures on the ISS: Integrated Resistance and Aerobic Training, August 2011.

Regeneron Pharmaceuticals, Tarrytown, NY. Muscle Atrophy Research. Analogs, Evaluation and Prevention Strategies, March 2011.

National Strength and Conditioning Association, Orlando, FL. Gary A Dudley Memorial Lecture. Plasticity of Skeletal Muscle at the Extremes: Spaceflight to Elite Performance, July 2010.

American College of Sports Medicine, Baltimore, MD. Exercise countermeasures for the maintenance of fitness during long duration spaceflight. Symposium, June 2010.

Commencement speaker, School of Education, Syracuse University, Syracuse, NY, May 2010.

National Strength and Conditioning Association, Las Vegas, NV. Symposium: Efficacy of Blood Flow Restricted Exercise, July 2009.

American College of Sports Medicine, Seattle, WA. Symposium: Efficacy, Safety, and Mechanisms of Blood Flow Restricted Exercise, June 2009.

University of Houston, Houston, TX. Department of Health and Human Performance seminar series. Neuromuscular Adaptations to Reduced Use, March 2009.

Texas A&M University, College Station, TX. Space life sciences seminar series, 2 seminars, Neuromuscular Adaptations to Disuse and Prevention of Muscle Atrophy with Exercise Countermeasures, January 2009.

National Aeronautics and Space Administration. Johnson Space Center, Houston, TX. Relationship between Muscle Strength and Functional Activities, November 2007.

National Strength and Conditioning Association. Atlanta, GA. Pioneering Work in Muscle Atrophy, its Evaluation and Prevention in a Symposium in memory of Gary Dudley, July 2007.

United States Army Research Institute of Environmental Medicine, Natick, MA. Magnetic Resonance Imaging and the Evaluation of Skeletal Muscle, March 2007.

Mid-Atlantic Region of the American College of Sports Medicine, Harrisburg, PA. Reduced Blood Flow and Exercise, November 2006.

Syracuse University Gerontology Center, Maxwell School, Syracuse University – Evaluation of Everyday Activities in Older Adults, May 2005.

Mid-Atlantic Region of the American College of Sports Medicine. Scope and Limitations of Muscle Functional MRI, November 2004.

Department of Radiology, Michigan State University. Muscle Functional MRI, August 2003.

Symposium at national meeting of the Gerontological Society of America, Chicago, I. Issues in the Measurement of Disability, November 2001.

Mini-symposium at National American College of Sports Medicine conference, St. Louis, MO. Muscle Activity Localization Using MRI, May 2001 – June 2001.

Department of Exercise Science, University of Massachusetts – How can MRI be used to Assess Muscle Recruitment in Exercise, April 2001.

Syracuse University Gerontology Center, Maxwell School, Syracuse University – Muscle Function and Age, May 2000.

Center for Demography and Economics of Aging, Maxwell School, Syracuse University – Muscle Strength Thresholds Required for Everyday Function, February 1998.

Colloquia - American College of Sports Medicine, Denver, CO. Use of T2 for Identifying Muscle Activation, June 1997.

Gatorade Exercise Physiology Laboratory, The Quaker Oats Corporation – MRI Evaluation of Gastric Emptying, July 1996.

3rd Annual Central New York Exercise Science Symposium, SUNY Cortland – Use of MRI to Evaluate Muscle Activation Patterns, April 1996.

Department of Physiology, SUNY Upstate Medical University – Evaluation of Human Skeletal Muscle Function and Involvement in Exercise Following Periods of Prolonged Use and Disuse, April 1996.

SUBJECTS TAUGHT

Undergraduate
Human Physiology (lecture and laboratory), Exercise Physiology (laboratory), Gravitational Physiology (lecture and laboratory), Contemporary Canadian Health Issues (lecture), Exercise Testing and Interpretation (lecture and laboratory), Exercise Prescription in Health and Disease, Motor Learning, Pathophysiology

Graduate and Professional
Didactic course for residents in Physical Medicine and Rehabilitation, and Medical Fellows in Aerospace Medicine, Exercise Physiology (laboratory), Medical Physiology (tutor), Exercise Testing and Interpretation (lecture and laboratory), Exercise Prescription in Health and Disease, Skeletal Muscle Physiology, Pathophysiology, Current Literature In Exercise and Sport Science, Space Physiology

Courses Developed
Didactic course for residents in Physical Medicine and Rehabilitation
Didactic course for fellows in Aerospace Medicine
Gravitational Physiology (lecture and laboratory)
Pathophysiology
Skeletal Muscle Physiology
Exercise Testing and Interpretation (lecture and laboratory)
Motor Control and Learning
Exercise Prescription in Health and Disease

GRADUATE STUDENT RESEARCH ADVISING

Students are from Syracuse University unless otherwise indicated.

M.S. Thesis Chair	Andrew Kelleher
	Eric Coellen
	Jesse Lloyd
	Nina Bermudez
	Summer Baldwin
	Brian Clark
	Todd Manini
	Elizabeth Yackel-Giamis

Lynn Fennechia
Craig Holt
Jill Nappi

M.S. Thesis Committee

Seung Ho Jung
Brian Weil
Jessica Mistretta
Erin Kelly
Joe Pierce
Brian Pearson
Scott Collier
Ciji Miller
Lynn Sauro
Kristi Palmaccio
Li Yi-Hua
John Mayer
Ciji Miller
Cheri Alverado
George Mochizuki

Ph.D. Dissertation Chair

John Mayer – awarded 2001 doctoral prize at Syracuse University
Todd Manini – awarded 2005 doctoral prize at Syracuse University
Brian Clark – awarded 2006 doctoral prize at Syracuse University
Moshe Marko
Summer Cook – NASA Graduate student researcher program
Lynne Logan – Rocky Mountain State University
Kyle Hackney – NASA Graduate student researcher program
Meghan Everett – University of Houston, research advisor

Ph.D. Dissertation Committee

Fenia Giannopoulou
Tracy Baynard
Ruth Franklin
Christopher Fry – University of Texas Medical Branch
David Gundermann – University of Texas Medical Branch

Ph.D. Chair of Dissertation Defense

Laurie Witzel
Joanne Scandale
Brian Marguilles
Andrew Campbell

Undergraduate Mentoring
Bioastronautics and Life Support System (BLiSS) – University of Michigan

Christopher May & Ilyana Smith – Mars Human Health and Performance Monitoring System (M-HHaPS)
Alexander Kripfgans & Lowen Walter – NASA Rack and Stack xHab Project
Megan Foulk – Crew Mobility Modalities inside Moon/Mars Habitats

ORGANIZATIONS AND SERVICES

University of Michigan
Chair – Health Science Council – June 2022 to June 2024
Chair – School of Kinesiology Search Committee – 2024
Campus Plan 2050 Advisory Committee – June 2023 to present
U-M Strategic Visioning 2034 – June 2023 to present
Chair – APG DEI Subcommittee – June 2023 to June 2024
APG Budget Subcommittee – September 2021 to present
APG Professional Conduct Subcommittee – November 2020 to May 2021
APG DEI Subcommittee – November 2019 to June 2021
Enrollment Management Council – April 2019 to June 2020
APG Biosciences Subcommittee – February 2018 to present
Academic Program Group (APG) – 2016 to present

Associate Editor
Medicine and Science in Sports and Exercise
Journal of Strength and Conditioning Research
Nature Microgravity

Manuscript Reviewer
Physical Medicine and Rehabilitation International
American Journal of Physiology: Heart and Circulatory Physiology
Archives of Physical Medicine and Rehabilitation
Aviation Space and Environmental Medicine
Canadian Journal of Applied Physiology
Experimental Brain Research
International Journal of Sports Medicine
Journal of Applied Physiology
Medicine and Science in Sports and Exercise
Mental Retardation
Muscle and Nerve
Intellectual and Developmental Disabilities

American College of Sports Medicine
Fellow – 1998 to present
Professional Member – 1994 to present
Student Member – 1991 to 1994

National Academy of Kinesiology

Fellow – 2017 to present

American Physiological Society
Regular Member – 1997 to 2010

New York Chiropractic College
Institutional Review Board – 1998 to 2000

Syracuse University Service
Chancellors Citation for Excellence Committee – 2007 to 2008
Elected to SU Faculty Senate – 2007 to present
SU Gerontology Center Advisory Board – 2005 to present
Middle States Study Group – 1998

School of Education Service
Search Committee Chair – Undergraduate Advisor Exercise Science – 2008
Search Committee Chair – Assistant Professor & Instructors Physical Education – 2008
Search Committee Chair – Assistant Professor in Exercise Science – 2007
Search Committee Chair – Assistant Professor in Exercise Science – 2006
Dean's Council – 2004 to present
Teaching Committee (Koszalka) – 2002
Research Methods Committee – 2000 to 2002
Curriculum Committee – 1998 to 2003
Community Building Task Force – 1998
Teaching Committee (Hinchman) – 1997
Judicial Committee – 1996 to 1997
Scholarship Committee – 1996

SUNY Upstate Medical Service
Ad hoc reviewer for the IRB
Search Committee – Center for Children's Health Policy Director

PEER-REVIEWED ABSTRACTS

Keller N, McHenry N, Duncan C, Johnston A, Whittle RS, Koock E, Bhattacharya SS, De La Torre G, PLOUTZ-SNYDER LL, Sheffield-Moore M, Chamitoff G, Diaz-Artiles A. Augmenting Exercise Protocols with Interactive Virtual Reality Environments, IEEE Aerospace Conference 2022.

Keller N, McHenry N, Duncan C, Johnston A, Whittle RS, Koock E, Bhattacharya SS, De La Torre G, PLOUTZ-SNYDER LL, Sheffield-Moore M, Chamitoff G, Diaz-Artiles A. Augmenting Exercise Protocols with Interactive Virtual Reality Environments, IEEE Aerospace Conference 2021.

Keller N, Whittle RS, McHenry N, Bhattacharya S, Duncan C, Koock E, PLOUTZ-SNYDER LL, de la Torre G, Sheffield-Moore M, Chamitoff G, Diaz-Artiles A. Augmenting Exercise Protocols with

Interactive Virtual Reality Environments, Human Research Program Investigators' Workshop, Galveston, TX, Jan 27-30, 2020.

Lee SMC, Martin DS, Miller CA, Scott JM, Laurie SS, Macias BR, PLOUTZ-SNYDER LL, Stenger MB. What level of gravity is required to prevent Spaceflight-Associated Neuro-ocular Syndrome (SANS)? Human Research Program Investigators' Workshop, Galveston, TX, January 22-25, 2019.

Keller N, Whittle RS, McHenry N, Bhattacharya S, Duncan C, Koock E, PLOUTZ-SNYDER LL, De La Torre G, Sheffield-Moore M, Chamitof G, Diaz-Artiles A. Augmenting Exercise Protocols With Interactive Virtual Reality Environments. Human Research Program Investigators' Workshop, Galveston, TX, January 22-25, 2019.

Ryder J, Fullmer P, Buxton R, Crowell B, Goetchius E, Bekdash O, DeWitt J, Hwang E, Feiveson A, English K, and PLOUTZ-SNYDER LL. Identification of Muscle Fitness Standards for Exploration Mission Tasks. Human Research Program Investigators' Workshop, Galveston, TX, January 22-25, 2019.

De Witt JK, Buxton RE, Guilliams ME, Hanson AM, Peters BT, Pandorf MMS, Sibonga JD, and PLOUTZ-SNYDER LL. Relationship between In-Flight Training Load and Musculoskeletal Health Outcomes. Human Research Program Investigators' Workshop, Galveston, TX, January 22-25, 2018.

PLOUTZ-SNYDER LL, DeWitt J, Scott J, English K, Buxton R, Goetchius E, Ryder J, Guilliams M, Ploutz-Snyder R, Downs M. Optimization of In-flight Exercise Countermeasures – SPRINT. Human Research Program Investigators' Workshop, Galveston, TX, January 22-25, 2018.

Lee SMC, Martin DS, Scott JM, Laurie SS, Macias BR, Arbeille P, PLOUTZ-SNYDER LL, Stenger MB. What Level of Gravity is required to Prevent Spaceflight-Associated Neuro-Ocular Syndrome (SANS)? Human Research Program Investigators' Workshop, Galveston, TX, January 22-25, 2018.

Feltz DL, Samendinger S, Hill CR, Ede A, Kerr NL, Pivarnik JM, PLOUTZ-SNYDER LL, Winn B. Can a Cyber Partner Boost Motivation to Maintain Long-term Intense Exercise? NASA Human Research Program Investigator's Workshop, Galveston, TX, January 2017.

DeWitt J, Fincke R, PLOUTZ-SNYDER LL. MPCV Exercise Devices – Objective and Subjective Testing of 4 Candidate Devices. Human Research Program Investigators' Workshop, Galveston, TX, January 22-25, 2017.

Goetchius E, Crowell B, Ozgur O, Hamilton S, Schlund M, Otto C, Newby N, De Witt J, Ploutz-Snyder R, PLOUTZ-SNYDER LL, Haykowsky M, Scott J. Posture and Exercise-induced Changes in Ocular Pressure and Cornea Curvature. Human Research Program Investigators' Workshop, Galveston, TX, January 22-25, 2017.

Scott JM[1], Martin D[2], Matz T[3], Downs M[4], Ploutz-Snyder R[5], PLOUTZ-SNYDER LL[5]. Changes in Cardiac Morphology and Function: Implications of Spaceflight, Bed Rest, and Exercise. Human Research Program Investigators' Workshop, Galveston, TX, January 22-25, 2017.

Downs M[1], Scott J[2], DeWitt J[3], English K[4], Buxton R[1], Goetchius E[1], Crowell B[4], Ploutz-Snyder R[5], PLOUTZ-SNYDER LL[5]. Individual Variability in Aerobic Fitness and Muscle Strength Adaptations to 70 Days of Bed Rest and Exercise Training. Human Research Program Investigators' Workshop, Galveston, TX, January 22-25, 2017.

PLOUTZ-SNYDER LL[1], Scott J[2], English K[3], Buxton R[4], Goetchius E[4], Ryder J[5], Ploutz-Snyder R[1], Downs M[2]. Sprint Exercise in Bed Rest and Space Flight. Human Research Program Investigators' Workshop, Galveston, TX, January 22-25, 2017.

PLOUTZ-SNYDER LL[1], Downs M[2], Buxton R[2], GoetchiusE[2], Ryder J[3], Ploutz-Snyder R[1], Scott J[5]. Time Course of Muscle Loss with Bed Rest. Human Research Program Investigators' Workshop, Galveston, TX, January 22-25, 2017.

PLOUTZ-SNYDER LL[1], Downs M[3], Ryder J[1], Crowell B[2], Goetchius E[3], Seponski C[4], Ploutz-Snyder R[1], Scott J. Integrated Resistance and Aerobic Exercise Training with Small Compact Exercise Equipment. Human Research Program Investigators' Workshop, Galveston, TX, January 22-25, 2016.

PLOUTZ-SNYDER LL[1], Downs M[2], Ryder J[1], Crowell B[3], Goetchius E[2], Seponski C[4], Ploutz-Snyder R[1], Zwart S[1], Smith SM[5], Scott J[1]. Integrated Resistance and Aerobic Exercise Training with Small Compact Exercise Equipment – Bone. Human Research Program Investigators' Workshop, Galveston, TX, January 22-25, 2016.

Hanson AM[1], Peters BT[2], Newby N[2], PLOUTZ-SNYDER LL[3]. The XSENS Force Shoe and Exercise Load Monitorin on ISS. Human Research Program Investigators' Workshop, Galveston, TX, January 22-25, 2016.

Ploutz-Snyder, LL. Overview of Spaceflight Exercise Requirements. Human Research Program Investigators' Workshop, Galveston, TX, January 22-25, 2016.

Scott J[1], Martin D[2], Crowell B[3], Goetchius E[4], Seponski C[2], Gonzales R[3], Matz T[3], Ploutz-Snyder R[1], Stenger M[2], PLOUTZ-SNYDER LL[1]. Influence of Exercise Modality on Cerebral-Ocular Hemodynamics and Pressures. Human Research Program Investigators' Workshop, Galveston, TX, January 22-25, 2016.

Ryder J, Scott J, PLOUTZ-SNYDER LL. Sweat Rates during Continuous and Interval Aerobic Exercise: Implications for NASA Multipurpose Crew Vehicle (MPCV) Missions. Human Research Program Investigators' Workshop, Galveston, TX, January 22-25, 2016.

Lavin K, Jemiolo B, Perkins R, Ratchford S, Finch H, Dillon EL, Sheffield-Moore M, Urban R, Ryder J, PLOUTZ-SNYDER LL, Trappe S, Trappe T. Influence of 70 days of Bedrest and the Next Generation Exercise Countermeasures Program (SPRINT) on Thigh and Calf Muscle Metabolic Enzymes and Capillary Content. Integrative Biology of Exercise VII, Phoenix, Arizona, Nov 2-4, 2016.

Trappe T, Minchev K, Grosicki G, Perkins R, Finch H, Dillon EL, Sheffield-Moore M, Urban R, Ryder J, PLOUTZ-SNYDER LL, Trappe S. Influence of 70 days of Bed Rest and the next Generation Exercise

Countermeasures Program (SPRINT) on Soleus Single Muscle Fiber Size and Function. Integrative Biology of Exercise VII, Phoenix, Arizona, Nov 2-4, 2016.

Trappe S, Minchev K, Grosicki G, Perkins R, Finch H, Dillon EL, Sheffield-Moore M, Urban R, Ryder J, PLOUTZ-SNYDER LL, Trappe T. Influence of 70 days of Bed Rest and the Next Generation Exercise Countermeasures Program (SPRINT) on Vastus Lateralis Single Muscle Fiber Size and Function. Integrative Biology of Exercise VII, Phoenix, Arizona, Nov 2-4, 2016.

Smith AB, Triplett AN, Hill CR, Deere SJ, Pivarnik JM, PLOUTZ-SNYDER LL, Feltz D. Changes in Muscular Strength Over a 24-Week Cycle Ergometer Interval Program. *Med Sci Sports Exerc*. 48 (5 Suppl 1):709, May 2016.

Downs M, Buxton R, Goetchius E, De Witt J, PLOUTZ-SNYDER LL. Individual Variability in Aerobic Fitness Adaptations to 70 Days of Bed Rest and Exercise Training. *Med Sci Sports Exerc*. 48 (5 Suppl 1):672, May 2016.

English KL, Mulavara A, Bloomberg J, PLOUTZ-SNYDER LL. Calf Strength Loss during Mechanical Unloading: Does it Matter? *Med Sci Sports Exerc*. 48 (5 Suppl 1):577-8, May 2016.

PLOUTZ-SNYDER LL, Buxton RE, Ryder JW, English KE, Guined JR. Effects of Reduced Strength on Self-Selected Pacing for Long-Duration Activities. Humans in Space, Prague, Czech Republic, June 2015.

PLOUTZ-SNYDER LL, Scott J, Ryder J, Downs M, Ploutz-Snyder RJ, Dillon L, Sheffield-Moore M, Urban, R. Integrated Resistance and Aerobic Training for the Maintenance of Cardiovascular and Skeletal Muscle Function During 70 Days of Bed Rest. Humans in Space, Prague, Czech Republic, June 2015.

Ryder J, Buxton R, Guined J, English K, PLOUTZ-SNYDER LL. Use of a Novel Weighted Study to Assess Ambulatory Performance Under Reduced Strength-to-Body Weight Conditions. *American College of Sports Medicine*, San Diego, CA, May 2015.

Downs M, Goetchius E, Buxton R, Guined J, English K, Scott J, PLOUTZ-SNYDER LL. Energy Requirements during 70-days of Bed Rest with High Intensity Aerobic and Resistance Exercise. *American College of Sports Medicine,* San Diego, CA, May 2015.

English K, Buxton T, Crowell J, Goetchius E, Guined JR, Hoellen D, Nieschwitz B, Ryder JW, Seponski C, Ploutz-Snyder RJ, PLOUTZ-SNYDER LL. Correlations between Clinical and Functional Muscle Outcomes: Implications for Spaceflight. *American College of Sports Medicine,* San Diego, CA, May 2015.

Lee S, Stenger M, Laurie S, PLOUTZ-SNYDER LL, Platts S. High-intensity Resistive and Rowing Exercises do not Prevent Orthostatic Intolerance after 70 days of Bed Rest: Preliminary Results. *American College of Sports Medicine,* San Diego, CA, May 2015.

Scott JM[1], Westby C[1], Martin D[2], Stenger M[2], Ploutz-Snyder R[1], PLOUTZ-SNYDER LL[1]. Influence of Exercise Modality on Cerebral-ocular Hemodynamics and Pressures. Human Research Program Investigators' Workshop, Galveston, TX, January 13-15, 2015.
Scott JM[1], Hackney KJ[2], Downs ME[3], Martin D[4], Caine T[4], Matz T[5], Babcock L[3], Goetchius E[3], Buxton R[3], Ryder J[1], PLOUTZ-SNYDER LL. Panoramic Ultrasound Imagining for Quantification of Diuse-induced Muscle Atrophy. Human Research Program Investigators' Workshop, Galveston, TX, January 13-15, 2015.

Hanson AM[1], Peters BT[2], Newby N[2], PLOUTZ-SNYDER LL. Evaluation of the XSENS Force Shoe on ISS. Human Research Program Investigators' Workshop, Galveston, TX, January 13-15, 2015.

Downs ME[1], Lee SMC[2], PLOUTZ-SNYDER LL[3], Feiveson A. Improving the Accuracy of Predicting Maximal Oxygen Consumption (VO_2peak). Human Research Program Investigators' Workshop, Galveston, TX, January 13-15, 2015.

Scott JM[1], Martin D[2], Caine T[2], Matz T[3], PLOUTZ-SNYDER LL. Time Course of Atrophic Remodeling: Effects of Exercise on Cardiac Morphology and Function. Human Research Program Investigators' Workshop, Galveston, TX, January 13-15, 2015.

Lewandowski BE[1], Pennline JA[1], Thompson WK[1], Humphreys BT[2], Ryder JW[3], PLOUTZ-SNYDER LL[3], Mulugeta L. Development of the NASA Digital Astronaut Project Muscle Model. Human Research Program Investigators' Workshop, Galveston, TX, January 13-15, 2015.

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