



Welcome to this month's edition of NExTNet News. In addition to pertinent announcements, RFAs, and news stories, follow the exciting research advances of NExTNet members and their investigative teams with links to recent findings.

NExTNet News is prepared monthly by Jenny Martz, NExTNet Coordinator. For future editions, please send relevant stories, articles, scientific publications, or announcements to [nextnet@uab.edu](mailto:nextnet@uab.edu).

## September 2017

### Announcements

- **Position Openings**
  - [Assistant Professor – Musculoskeletal Biology](#) - The Department of Cell, Developmental, and Integrative Biology (CDIB) at the University of Alabama at Birmingham School of Medicine seeks highly-qualified applicants for two tenure track Assistant Professor positions. Candidates with research programs focused on cellular and molecular mechanisms regulating musculoskeletal (skeletal muscle/bone/cartilage/tendon/ligament) development, growth, pathophysiology, repair, or regeneration will be considered.
  - Post-doctoral Trainee at the University of Alabama at Birmingham – Full details can be found at: <https://www.uab.edu/postdocs/post-doc-openings/postdocs-in-biomedical-sciences/376-g173101> or email [twbuford@uabmc.edu](mailto:twbuford@uabmc.edu)
  - [TREAT Entrepreneur Fellowship program](#) This is a paid Fellowship lasting from 6 to 12 months. TREAT's commercialization methodology focuses heavily on risk avoidance strategies that are universal to any lean startup. The application **deadline is October 20th**.
- **Request for clinical trials info and teleconference presenters**
  - As part of NExTNet's effort to facilitate multi-site clinical trials we provide opportunities for member institutions to present their research, interests, and capabilities to help identify collaborative possibilities. The bi-monthly teleconference is one such opportunity. If you would be interested in having your institution highlighted during one of these calls please email [nextnet@uab.edu](mailto:nextnet@uab.edu) for more information.
  - Investigators with current multi-site clinical trials are also invited to submit their trials for listing on the NExTNet website (<http://www.uab.edu/medicine/nextnet/clinical-trials>)
- **Teleconference Schedule**
  - The next teleconference is scheduled to take place on Tuesday, October 10, 2017 at 10am CST.

### Upcoming Meetings and Conferences

- [Level 1: Neuromodulation for Rehabilitation Introductory Workshop](#) October 15-20, 2017 Charleston, SC
- [American Congress of Rehabilitation Medicine](#) October 23-28, 2017 Atlanta, GA

- [6<sup>th</sup> Annual International Symposium on Regenerative Rehabilitation](#) November 1-3, 2017, Pittsburgh, PA
- [Clinical Research for Regenerative Rehabilitation and Rehabilitation Strategies in Preclinical Models: An Overview of the Fundamentals](#) November 3, 2017, Pittsburgh, PA
- [Physiology and Pathophysiology Consequences of Sickle Cell Disease](#) November 6-8, 2017, Washington, DC
- [American Society for NeuroRehabilitation](#) November 9-10, 2017 Baltimore, MD
- [4<sup>th</sup> Federal Interagency Conference on TBI](#) June 11-15, 2018

## New Findings from NExtNet Investigators

### Aging

- [A relative L-arginine deficiency contributes to endothelial dysfunction across the stages of the menopausal transition.](#)

### Cancer

- [Erratum: Inflammation of mammary adipose tissue occurs in overweight and obese patients exhibiting early-stage breast cancer.](#)
- [Obesity and Endometrial Cancer: A Lack of Knowledge but Opportunity for Intervention.](#)
- [Dose-response effects of aerobic exercise on body composition among colon cancer survivors: a randomised controlled trial.](#)
- [Strategic recruitment of an ethnically diverse cohort of overweight survivors of breast cancer with lymphedema.](#)

### Cardiovascular

- [Challenges with Percent Predicted Maximum VO<sub>2</sub> in Patients with Heart Failure.](#)
- [Early Identification of Patients with Acute Decompensated Heart Failure.](#)
- [Recent Advances: Mechanisms and Subclinical Consequences of Aortic Stiffness.](#)

### Cell and Molecular Biology

- [Exercise training-induced modification of the gut microbiota persists after microbiota colonization and attenuates the response to chemically-induced colitis in gnotobiotic mice.](#)
- [Near-infrared spectroscopy of superficial and deep rectus femoris reveals markedly different exercise response to superficial vastus lateralis.](#)
- [Promoting Drp1-mediated mitochondrial fission in midlife prolongs healthy lifespan of Drosophila melanogaster.](#)
- [Triheptanoin versus trioctanoin for long-chain fatty acid oxidation disorders: a double blinded, randomized controlled trial.](#)

### Exercise – Diet/Disease/Drug/Device/Environmental Interactions

- [NCB5OR Deficiency in the Cerebellum and Midbrain Leads to Dehydration and Alterations in Thirst Response, Fasted Feeding Behavior, and Voluntary Exercise in Mice.](#)
- [The Effects of Intravenous Low Dose Dopamine Infusion on Glucose Regulation during Prolonged Aerobic Exercise.](#)
- [The Healthy Hearts and Kidneys \(HHK\) study: Design of a 2x2 RCT of technology-supported self-monitoring and social cognitive theory-based counseling to engage overweight people with diabetes and chronic kidney disease in multiple lifestyle changes.](#)
- [Design and development of a mobile exercise application for home care aides and older adult medicaid home and community-based clients.](#)
- [Role of Inactivity in Chronic Diseases: Evolutionary Insight and Pathophysiological Mechanisms.](#)

### Metabolic

- [Case Studies in Physiology: Skeletal Muscle Mitochondrial Protein Synthesis and Respiration in Response to the Energetic Stress of an Ultra-Endurance Race.](#)
- [A Practical and Time-Efficient High-Intensity Interval Training Program Modifies Cardio-Metabolic Risk Factors in Adults with Risk Factors for Type II Diabetes.](#)
- [Exercise Oscillatory Ventilation: Inter-reviewer Agreement and a Novel Determination.](#)

- [Energy-matched moderate and high intensity exercise training improves nonalcoholic fatty liver disease risk independent of changes in body mass or abdominal adiposity - a randomized trial.](#)

### Neuroscience and Stroke

- [A review of the effects of physical activity and sports concussion on brain function and anatomy.](#)

### Pulmonary

- [Variability in objective and subjective measures affects baseline values in studies of patients with COPD.](#)
- [Alveolar eosinophilia in current smokers with chronic obstructive pulmonary disease in the SPIROMICS cohort.](#)

### Other

- [A restatement of the natural science evidence base concerning the health effects of low-level ionizing radiation.](#)
- [Objectively Assessed Physical Activity and Weight Loss Maintenance among Individuals Enrolled in a Lifestyle Intervention.](#)

### Additional New Findings

- [Physical Activity and Nutrition Influences In ageing \(PANINI\): consortium mission statement.](#)
- [Moderate-to-vigorous physical activity, but not sedentary time, predicts changes in cardiometabolic risk factors in 10-y-old children: the Active Smarter Kids Study.](#)
- [Effectiveness of postoperative home-exercise compared with usual care on kinesiophobia and physical activity in spondylolisthesis: A randomized controlled trial.](#)
- [Physical activity influences the immune system of breast cancer patients.](#)
- [Benefits of lifelong exercise training on left ventricular function after myocardial infarction.](#)
- [Physical activity and advanced cancer: the views of oncology and palliative care physicians in Ireland.](#)
- [Exercise for osteoporosis: how to navigate between overeagerness and defeatism.](#)
- [Exercise-Induced Changes in Glucose Metabolism Promote Physiologic Cardiac Growth.](#)
- [Effectiveness of exercise programs in ankylosing spondylitis: A meta-analysis of randomized controlled trials.](#)
- [Jump step - a community based participatory approach to physical activity & mental wellness.](#)
- [Influence of muscle mass in the assessment of lower limb strength in COPD: validation of the prediction equation.](#)
- [Acute effects of direct inhibitory pressure over the biceps brachii myotendinous junction on skeletal muscle activation and force output.](#)
- [MicroRNA-20a participates in the aerobic exercise-based prevention of coronary artery disease by targeting PTEN.](#)
- [Exercise intervention attenuates hyperhomocysteinemia-induced aortic endothelial oxidative injury by regulating SIRT1 through mitigating NADPH oxidase/LOX-1 signaling.](#)
- [The Hypothalamic Regulation of Metabolic Adaptations to Exercise.](#)
- [Exercise-Induced Catecholamines Activate the Hippo Tumor Suppressor Pathway to Reduce Risks of Breast Cancer Development.](#)
- [Does resistance exercise performed during dialysis modulate Nrf2 and NF-κB in patients with chronic kidney disease?](#)
- [Promoting physical activity in worksite settings: results of a German pilot study of the online intervention Healingo fit.](#)
- [Cold Acclimation Does Not Alter Physiological or Perceptual Responses During Subsequent Exercise in the Heat.](#)
- [Reliability of the Shuttle Walk Test With Controlled Incremental Velocity in Patients With Difficult-to-Control Asthma.](#)
- [Physical training improves visceral adipose tissue health by remodelling extracellular matrix in rats with estrogen absence: a gene expression analysis.](#)
- [Pelvic floor muscle activity during impact activities in continent and incontinent women: a systematic review.](#)
- [The connection between exercise addiction and orthorexia nervosa in German fitness sports.](#)
- [Do implicit attitudes toward physical activity and sedentary behavior prospectively predict objective physical activity among persons with obesity?](#)
- [Expanding the investigation of meaningful effects in physiology research.](#)

- [Are indexed values better for defining exercise pulmonary hypertension?](#)
- [Exercise intervention attenuates hyperhomocysteinemia-induced aortic endothelial oxidative injury by regulating SIRT1 through mitigating NADPH oxidase/LOX-1 signaling.](#)
- [Evaluating the essential role of RONS in vivo in exercised human muscle.](#)
- [The Hypothalamic Regulation of Metabolic Adaptations to Exercise.](#)
- [Managing childhood and adolescent attention-deficit/hyperactivity disorder \(ADHD\) with exercise: A systematic review.](#)
- [Dance is more than therapy: Qualitative analysis on therapeutic dancing classes for Parkinson's.](#)
- [Distance-delivered physical activity interventions for childhood cancer survivors: A systematic review and meta-analysis.](#)
- [Exercise prescription for patients with multiple sclerosis; potential benefits and practical recommendations.](#)
- [The Role of Brain Structure in Predicting Adherence to A Physical Activity Regimen.](#)
- [Resistance training status modifies inflammatory response to explosive and hypertrophic resistance exercise bouts.](#)
- [Exercise and Competitive Sport: Physiology, Adaptations, and Uncertain Long-Term Risks.](#)
- [Low physical activity is related to clustering of risk factors for fracture-a 2-year prospective study in children.](#)
- [Reduced Spanish Version of Participation Motives Questionnaire for Exercise and Sport: Psychometric Properties, Social/Sport Differences.](#)
- [Understanding the Science of Resistance Training: An Evolutionary Perspective.](#)
- [Prescribed exercise programs may not be effective in reducing impairments and improving activity during upper limb fracture rehabilitation: a systematic review.](#)
- [Fragmented QRS complex as a predictor of exercise-related sudden cardiac death.](#)
- [Serum IL-15 and IL-15Ra levels are decreased in lean and obese physically active humans.](#)
- [Physical Activity in Preventing Alzheimer's Disease and Cognitive Decline: A Narrative Review.](#)
- [Physical activity and the risk of hip fracture in the elderly: a prospective cohort study.](#)
- [Satellite cell activation and mTOR signaling pathway response to resistance and combined exercise in elite weight lifters.](#)
- [Optimal timing of exercise for influencing energy intake in children during school lunch.](#)
- [Effect of a physical activity programme in the aquatic environment on haemodynamic constants in pregnant women.](#)
- [The role of episodic postprandial peptides in exercise-induced compensatory eating.](#)
- [Best practice guidelines for the measurement of physical activity levels in stroke survivors: a secondary analysis of an observational study.](#)
- [Self-Regulation and Implicit Attitudes Toward Physical Activity Influence Exercise Behavior.](#)
- [The Reproducibility of 4-km Time Trial \(TT\) Performance Following Individualised Sodium Bicarbonate Supplementation: a Randomised Controlled Trial in Trained Cyclists.](#)
- [The health benefits and constraints of exercise therapy for wheelchair users: A clinical commentary.](#)
- [Effectiveness of an interactive telerehabilitation system with home-based exercise training in patients after total hip or knee replacement: study protocol for a multicenter, superiority, no-blinded randomized controlled trial.](#)
- [Vigorous Physical Activity is Associated with Regular Aerobic Exercise-Induced Increased Serum Testosterone Levels in Overweight/Obese Men.](#)

#### **RFAs / FOAs**

- Tailoring Cardiac Rehabilitation to Enhance Participation of Older Adults (R01) [RFA-AG-18-016](#)
- Increasing Use of Cardiovascular and Pulmonary Rehabilitation in Traditional and Community Settings (R61/R33) [RFA-HL-18-019](#)
- Coordinating Center for Claude D. Pepper Older Americans Independence Centers (U24) [RFA-AG-18-008](#)
- Paul B Beeson Emerging Leaders Career Development Award in Aging (K76) [RFA-AG-18-006](#)
- NIMH Biobehavioral Research Awards for Innovative New Scientists (NIMH BRAINS) (R01) [RFA-MH-18-200](#)
- Symptom Cluster Characterization in Chronic Conditions (R01) [PA-17-462](#)
- Symptom Cluster Characterization in Chronic Conditions (R21) [PA-17-461](#)
- BRAIN Initiative: Research on the Ethical Implications of Advancements in Neurotechnology and Brain Science (R01) [RFA-MH-18-500](#)

- Science of Behavior Change: Revision Applications for Use-inspired Research to Optimize Adherence, Behavior Change Interventions, and Outcomes (R01) [RFA-RM-17-022](#); (U01) [RFA-RM-17-023](#); (R34) [RFA-RM-17-024](#); (R21) [RFA-RM-17-028](#)
- [Center for Translation of Rehabilitation Engineering Advances and Technology \(TREAT\) Pilot Project Grants](#)
- [REACT Center Scholar Awards Program](#)
- [AR3T Regenerative Rehabilitation Pilot Grants](#)

#### **In the News**

- [Exercise, Not Vitamin D, Recommended to Prevent Falls](#)
- [The Latest on What Exercise Works Best to Combat MS](#)
- [How Exercise Might Increase Your Self-Control](#)
- [What Are the Best Forms of Exercise for COPD Patients?](#)