Physical Therapy, Movement, and Rehabilitation Sciences

2016-2017 Annual Research Report
Completed May 8, 2017

Research Productivity for 2016

**Mission**
The Department of Physical Therapy, Movement and Rehabilitation Sciences' research mission is to build the evidence for best practices to maintain and improve the health and wellbeing of the local, national, and global community members.

**Overview**

<table>
<thead>
<tr>
<th>Category</th>
<th>Count</th>
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</thead>
<tbody>
<tr>
<td>Books</td>
<td>2</td>
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<tr>
<td>Book Chapters</td>
<td>5</td>
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<tr>
<td>Peer-Reviewed Publications</td>
<td>35</td>
</tr>
<tr>
<td>Abstracts and Presentations</td>
<td>102</td>
</tr>
</tbody>
</table>

Grants Submitted in 2016:
- $7,448,718 requested

Funded Grants Active in 2016 direct costs:
- $3,262,717 funded
Historical Perspective

![Publication Performance Graph]

- # Publications
- Conf Abstracts / Presentations
- Average H-index

Publication counts and presentation counts have shown a steady increase over the years, with a notable peak in 2016. The average H-index also reflects a similar upward trend, indicating a growing body of high-quality research.
Journal Impact Comparison

<table>
<thead>
<tr>
<th>Year</th>
<th>Submitted</th>
<th>Funded</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>$2</td>
<td>$1</td>
</tr>
<tr>
<td>2016</td>
<td>$8</td>
<td>$4</td>
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</tbody>
</table>
Publications

Books


Book Chapters


Peer Reviewed Journal Articles


### Abstracts Published


### Conferences Abstracts and Presentations

#### International


National


3. Cleveland, RJ., Barbour, KE., Renner, JB., Jordan, JM., Iversen, MD., Callahan, LF. “Individuals with Hip or Knee Osteoarthritis and Low Socioeconomic Status are less likely to be physically active.” American College of Rheumatology Annual Scientific Meeting. Washington, DC. November 15, 2016.


Local/Regional


At Northeastern:

4. Hayward, L. “Examination of Health Professions Students’ Motivation for Learning, Applying and Valuing Evidenced Based Practice.” Conference for Advancing Evidenced-Based Teaching. NU CATLR. May 2016.
On-Line / Webinars


Awards


News/Media

1. Levac, D. http://www.northeastern.edu/regamevrlab/media/
## Grants Submitted in 2016 ($7,448,718 requested)

<table>
<thead>
<tr>
<th>Agency</th>
<th>Title</th>
<th>Direct Costs</th>
<th>Faculty</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEU</td>
<td>A Model Experiential Education Program for Bouve Freshmen to Begin Developing</td>
<td>$15,000</td>
<td>Day (Co-PI)</td>
<td>Denied</td>
</tr>
<tr>
<td>Eastern Bank Charitable Foundation</td>
<td>A Community Based Adaptive Sports Program for Strengthening Families in Metro West</td>
<td>$5,000</td>
<td>Hayward (PI)</td>
<td>Pending</td>
</tr>
<tr>
<td>Deborah Monroe Noonan Memorial Research Fund</td>
<td>Development and Evaluation of a Model TOPSoccer Program for Children with Autism</td>
<td>$80,000</td>
<td>Hayward (PI)</td>
<td>Pending</td>
</tr>
<tr>
<td>Charles H. Hood Foundation</td>
<td>Is Motor Learning Enhanced by Practice in a Virtual Environment for Children with Cerebral Palsy?</td>
<td>$150,000</td>
<td>Levac (Co-PI)</td>
<td>Pending</td>
</tr>
<tr>
<td>NIH/NIAMS</td>
<td>The Relation of Altered Pain Processing to Impact Loading and Response to a Gait Retraining Treatment in Knee Osteoarthritis</td>
<td>$766,500</td>
<td>Stefanik (PI)</td>
<td>Pending</td>
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<tr>
<td>NSF-BME</td>
<td>Collaborative Research: Understanding Motor Cortical Organization through Engineering Innovation to TMS-Based Brain Mapping</td>
<td>$300,000</td>
<td>Tunik</td>
<td>Pending</td>
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<tr>
<td>NIH-NINDS</td>
<td>Neural Mechanisms of Mirror Feedback</td>
<td>$3,066,109</td>
<td>Tunik</td>
<td>Denied</td>
</tr>
<tr>
<td>NIH-NINDS</td>
<td>Optimizing Hand Rehabilitation Post-Stroke Using Interactive Virtual Environments</td>
<td>$3,066,109</td>
<td>Tunik</td>
<td>Pending</td>
</tr>
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</table>
# Funded Grants Active in 2016 total costs $3,262,717

<table>
<thead>
<tr>
<th>Agency</th>
<th>Title</th>
<th>2016 Direct</th>
<th>Faculty</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEU</td>
<td>A Comparison of the Immediate Effects of Gastrocnemius Stretching with and without Self-Myofascial Release on Ankle Kinematics and Range of Motion</td>
<td>$970</td>
<td>Corkery, Yen</td>
</tr>
<tr>
<td>NEU</td>
<td>Using Real-Time Ultrasound Imaging to Enhance Learning and Clinical Application of Anatomy, Biomechanics, Motor Control and Patient Care Across the Physical Therapy Curriculum</td>
<td>$15,000</td>
<td>Day (Co-PI)</td>
</tr>
<tr>
<td>NEU</td>
<td>Assessing Fall Risk in People with Intellectual Disabilities: A Community-Based Program</td>
<td>$600</td>
<td>Golub-Victor (Co-PI)</td>
</tr>
<tr>
<td>NEU</td>
<td>Pilot Simulation Experience: Interprofessional Education Training for Motor Assessment</td>
<td>$550</td>
<td>Golub-Victor (PI)</td>
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<tr>
<td>The Village Church Outreach Program</td>
<td>An Interdisciplinary Approach for Educating and Sustaining Communication and Mobility in Children with Disabilities</td>
<td>$2,000</td>
<td>Hayward (PI)</td>
</tr>
<tr>
<td>NEU</td>
<td>An Innovative Engineering and Physical Therapy Student Partnership: “Enabling” Undergraduates to Collaboratively Solve Community Based Health Care Needs with Low Cost Technology</td>
<td>$8,000</td>
<td>Hayward (Co-PI)</td>
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<tr>
<td>The Fund for Wellesley</td>
<td>Enabling Children with Disabilities to Connect within the Wellesley Community Through Sports and Peer Mentoring</td>
<td>$10,000</td>
<td>Hayward (PI)</td>
</tr>
<tr>
<td>NEU</td>
<td>Lead Faculty Scholars Program</td>
<td>$2,000</td>
<td>Hayward</td>
</tr>
<tr>
<td>Pzifer Pharmaceuticals</td>
<td>Utilizing a Patient Navigator to Improve Oral DMARD Medication Adherence Among Rheumatoid Arthritis Patients at an Academic Medical Center</td>
<td>$160,700</td>
<td>Iversen</td>
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<tr>
<td>NIAMS-MCRC</td>
<td>Counseling for Persons at Risk to Develop Rheumatoid Arthritis</td>
<td>$787,723</td>
<td>Iversen (Co-PI)</td>
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<tr>
<td>Organization</td>
<td>Description</td>
<td>Principal Investigator</td>
<td>Funding</td>
</tr>
<tr>
<td>--------------</td>
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</tr>
<tr>
<td>NIH/NIAMS</td>
<td>Research Center Grant for Research Dedicated to Methodologically Rigorous, Clinically Relevant Translational Research on Rheumatic and Musculoskeletal Conditions</td>
<td>Iversen</td>
<td>?</td>
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<tr>
<td>Boston CHMC Orthopedic Department</td>
<td>Development and Validation of a Shoulder and Elbow Survey for Children with Orthopedic Dysfunction</td>
<td>Iversen</td>
<td>?</td>
</tr>
<tr>
<td>PCORI</td>
<td>Physical Therapy Versus Internet-based Exercise Training for Patients with Knee Osteoarthritis</td>
<td>Iversen</td>
<td>?</td>
</tr>
<tr>
<td>NIAMS</td>
<td>Study of Physical Activity Rewards after Knee Surgery</td>
<td>Iversen</td>
<td>$150,000</td>
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<tr>
<td>NIAMS</td>
<td>Vitamin D and Fish Oil for Autoimmune Disease, Inflammation and Joint Pain</td>
<td>Iversen</td>
<td>$386,732</td>
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<tr>
<td>US Fulbright Research Scholar Program: European Division</td>
<td>Development and Psychometric Testing of Novel Patient-Oriented Outcome Measures in Arthritis</td>
<td>Iversen</td>
<td>75,000SEK ($8497.24)</td>
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<tr>
<td>Society of Simulation in Healthcare</td>
<td>Development of an Innovative Educational Process to Educate Debriefs on Common Outcomes and Consistent Communication During Interprofessional Team Simulation Experiences</td>
<td>Iversen</td>
<td>$15,000</td>
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<tr>
<td>Debrah Munroe Noonan Memorial Research Fund</td>
<td>Usability Evaluation of the FITBoard (Fun Interactive Therapy Board): A Motivating, Movement-Based Rehabilitation Tool for Children with Disabilities</td>
<td>Levac (PI)</td>
<td>$80,000</td>
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<tr>
<td>Mutual Mentoring Advancement Program</td>
<td>Using Electroencephalography to Measure Attention, Motivation and Engagement in Motor Learning</td>
<td>Levac (PI)</td>
<td>$3,000</td>
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<tr>
<td>Tufts CTSI Piolet Grant</td>
<td>Influence of Virtual Environment Complexity on Motor Learning in Children with Cerebral Palsy: Implications for Virtual Reality use in Rehabilitation</td>
<td>Levac (Co-PI)</td>
<td>$45,000</td>
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<tr>
<td>NEU</td>
<td>Using Real-time Ultrasound Imaging to Enhance Learning and Clinical Application of Anatomy, Biomechanics, Motor Control and Patient Care Across the Physical Therapy Curriculum</td>
<td>Markowski, Watkins, Day (Co-PI)</td>
<td>$15,000</td>
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<tr>
<td>Organization</td>
<td>Project Description</td>
<td>Amount</td>
<td>Investigator</td>
</tr>
<tr>
<td>---------------------------------------------------</td>
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<tr>
<td>Rheumatology Research Foundation</td>
<td>Identifying Cases of PFJ OA &amp; Their hip Impairments</td>
<td>$347,220</td>
<td>Stefanik</td>
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<tr>
<td>Osteoarthritis Research Society International Collaborative Scholarship</td>
<td>Population-based Norms of Measures of Patellofemoral Joint Osteoarthritis</td>
<td>$6,000</td>
<td>Stefanik</td>
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<tr>
<td>NIH-NINDS</td>
<td>Brain Circuits in Motor Learning</td>
<td>$25,414</td>
<td>Tunik</td>
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<td>NIH-NINDS</td>
<td>Planning and Updating in Frontparietal Networks for Grasping</td>
<td>$238,318</td>
<td>Tunik</td>
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<tr>
<td>NEU</td>
<td>Real Time Ultrasound use in Physical Therapy Curriculum</td>
<td>$15,000</td>
<td>Watkins</td>
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