

Jeremy Graber PT, PhD
University of Colorado School of Medicine
Department of Physical Medicine and Rehabilitation
Physical Therapy Program | Hybrid Pathway
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Education:

University of Colorado, Aurora, CO	PhD, Rehabilitation Science	2019 - 2023
Indiana University, Indianapolis, IN	Doctor of Physical Therapy	2013 - 2016
Indiana University, Bloomington, IN	BS, Kinesiology	2009 - 2013

Licensure Information:

Colorado #PTL.0016383

Employment and Positions Held:

2025 - present	Assistant Professor, Physical Therapy Program, University of Colorado, Aurora, CO
2023 - 2025	Post-doctoral fellow, Physical Therapy Program, University of Colorado, Aurora, CO
2023 - 2025	Post-doctoral fellow, VA Seattle/Denver Center of Innovation, Aurora, CO
2021 - 2023	Research fellow, VA Eastern Colorado Geriatric Research, Education, and Clinical Center, Aurora, CO
2019 - 2021	Research Assistant, Physical Therapy Program, University of Colorado, Aurora, CO
2018 - 2019	Staff Physical Therapist, Active Edge Physical Therapy, Oregon City, OR
2017 - 2018	Traveling physical therapist, AMN Healthcare and Athletico Physical Therapy
2016 - 2017	Staff physical therapist, Athletico Physical Therapy, Bloomington, IN

Scholarly Agenda

My research aims to use real-world data to promote patient-centered care and support clinical decision making in rehabilitation settings.

Peer Reviewed Publications:

1. Churchill L, **Graber J**, Mealer M, et al. Patient and clinician perceptions of a "people-like-me" tool for personalized rehabilitation after total knee arthroplasty: a qualitative interview study. *Phys Ther*. Published online April 24, 2025. doi:10.1093/ptj/pzaf058.
2. **Graber J**, Hinrichs-Kinney LA, Churchill L, et al. Implementation of a "people-like-me" tool for personalized rehabilitation after total knee arthroplasty: a mixed methods pilot study. *J Eval Clin Pract*. 2025;31(1):e70028. doi:10.1111/jep.70028.
3. Garbin A, Tran M, **Graber J**, Derlein D, Currier D, Altic R, Will R, Cumbler E, Forster J, Mangione K, Stevens-Lapsley J. Improving function in older adults with hospital-associated deconditioning: lessons learned comparing a randomized controlled trial to real world practice. *Phys Ther*. 2024;104(12):pzae173. doi:10.1093/ptj/pzae173.
4. **Graber J**, Loyd BJ, Hoogeboom T, Miller C, Kittelson AJ. Optimizing the accuracy and precision of the minimal detectable change statistic: Secondary analysis of test-retest data from the NIH Toolbox Study. *Phys Ther*. Accepted for publication.
5. Judd DL, Cheuy V, Peters A, **Graber J**, et al. Incorporating functional strength integration techniques during total hip arthroplasty rehabilitation: A randomized controlled trial. *Phys Ther*. 2024;104(3):pzad168. doi:10.1093/ptj/pzad168.
6. **Graber J**, Churchill L, Struessel T, et al. Expert consensus for the use of outpatient rehabilitation visits after total knee arthroplasty: A Delphi study. *J Orthop Sports Phys Ther*. 2023 53:9, 566-574. <https://www.jospt.org/doi/10.2519/jospt.2023.11840>.
7. Cheuy V, Dayton R, Hogan C, **Graber J**, et al. Neuromuscular electrical stimulation preserves muscle strength early after total knee arthroplasty: effects on muscle fiber size. *J Orthop Res*. 2022;1-6. <https://doi.org/10.1002/jor.25418>.
8. **Graber J**, Kittelson A, Jin X, et al. Comparing "people-like-me" and linear mixed model predictions of functional recovery following knee arthroplasty. *J Am Med Inform Assoc*. 2022. <https://doi.org/10.1093/jamia/ocac123>.
9. **Graber J**, Juarez-Colunga E, Bade M, et al. Development of reference charts for monitoring quadriceps strength with handheld dynamometry after total knee arthroplasty. *Disabil Rehabil*. 2021;1-8. <https://doi.org/10.1080/09638288.2021.1995054>.
10. **Graber J**, Lockhart S, Matlock DD, Stevens-Lapsley J, Kittelson AJ. "This is not negotiable. You need to do this..." a directed content analysis of decision making in knee arthroplasty rehabilitation. *J Eval Clin Pract*. 2021;1-9. <https://doi.org/10.1111/jep.13591>.
11. Kittelson AJ, Loyd BJ, **Graber J**, et al. Examination of exclusion criteria in total knee arthroplasty rehabilitation trials: influence on the application of evidence in day-to-day practice. *J Eval Clin Pract*. 2021;1-8. <https://doi.org/10.1111/jep.13564>.
12. Owens JG, Rauzi MR, Kittelson A, **Graber J**, et al. How new technology is improving Physical Therapy. *Curr Rev Musculoskelet Med*. 2020;13(2):200-211. <https://doi.org/10.1007/s12178-020->

09610-6.

13. Brown MB, Neves E, Long G, **Graber J**, et al. High-intensity interval training, but not continuous training, reverses right ventricular hypertrophy and dysfunction in a rat model of pulmonary hypertension. *Am J Physiol Regul Integr Comp Physiol*. 2016;312(2):R197-R210. <https://doi.org/10.1152/ajpregu.00358.2016>.

Peer Reviewed Scientific and Professional Presentations:

1. Carson N, **Graber J**, O'Malley S, et al. 90-day outcomes for Veterans after TKA: are we serving those who served? Platform presentation: American Physical Therapy Association Combined Sections Meeting; Feb 2025.
2. **Graber J**, Churchill L, Kittelson A, et al. Effectiveness of personalized clinical decision support in outpatient rehabilitation after total knee arthroplasty. Marilyn Gossman Platform Presentation: American Physical Therapy Association Combined Sections Meeting; Feb 2024.
3. Tran MK, Garbin AJ, **Graber J**, Derlein D, Currier D, Altic R, Will R, Cumbler E, Forster J, Mangione KK, Stevens-Lapsley J. Improving function of older adults with hospital-associated deconditioning: comparison to real world practice. Platform Presentation: American Physical Therapy Association Combined Sections Meeting; Feb 2024.
4. Judd D, Yang C, Hogan C, Dayton M, Dennis D, Koonce R, Bilyeu K, Hinrichs-Kinney L, **Graber J**, et al. Comparative analysis of functional, strength, and biomechanical outcomes after anterior and posterolateral hip arthroplasty. Poster presentation: American Physical Therapy Association Combined Sections Meeting; Feb 2024.
5. Churchill L, **Graber J**, Mealer M, et al. Perceptions of personalized clinical decision support in rehabilitation after total knee arthroplasty: A qualitative study. Poster presentation: American Physical Therapy Association Combined Sections Meeting; Feb 2024.
6. Churchill L, **Graber J**, Mealer M, et al. A qualitative study exploring patient perceptions of personalized prediction and monitoring in rehabilitation after total knee arthroplasty. Poster presentation: Osteoarthritis Research Society International World Congress; March 2023.
7. **Graber J**, Hoogeboom T, Loyd B, Kittelson A. Monitoring change for individual patients: Time to move beyond the MDC? Poster presentation: American Physical Therapy Association Combined Sections Meeting; Feb 2023. Dayton R, Cheuy V, Hogan C, Graber J, et al. NMES preserves skeletal muscle strength early after total knee arthroplasty: effects on skeletal muscle fiber size. Poster presentation: Western Orthopaedic Association Annual Meeting; August 2022.
8. **Graber J**, Maldonado A, Bade M, Stevens-Lapsley J. Creating web-based tools for independent monitoring of functional recovery following total hip arthroplasty. Poster presentation: Academy of Physical Therapy Research Retreat, Advances in Rehabilitation Technology; July 2022.
9. **Graber J**, Thigpen C, Van Sciver-Richardson K, et al. Preliminary feasibility and effectiveness of a new clinical decision support tool in knee arthroplasty rehabilitation. Poster presented at: Colorado Pragmatic Research in Health Conference; May 2022.
10. **Graber J**, Juarez-Colunga E, Jin X, et al. Comparing methodologies for predicting functional recovery after total knee arthroplasty. Poster presented at: American Physical Therapy Association Combined Sections Meeting; Feb 2022.

11. **Graber J**, Bade M, Thigpen C, et al. Evaluating the need for a new clinical decision support tool in knee arthroplasty rehabilitation. Poster presented at: Colorado Pragmatic Research in Health Conference; May 2021.
12. **Graber J**, Kittelson A, Bade M, et al. Development of a reference chart for monitoring quadriceps strength recovery after knee arthroplasty. Poster presented at: American Physical Therapy Association Combined Sections Meeting; Feb 2021.
13. **Graber J**, Kittelson A, Bade M, et al. Translation from concept to clinic: a novel tool for patient-centered care in knee arthroplasty rehabilitation. Poster presented at: Colorado Pragmatic Research in Health Conference; Aug 2020.
14. **Graber J**, Gladish B, Brown MB. High intensity interval training vs. continuous training in a rat model of pulmonary hypertension: Impact on aerobic capacity, hemodynamics, and right ventricular remodeling. Oral presentation at: American Physical Therapy Association Combined Sections Meeting; Feb 2016; Anaheim, CA.
15. Troutman A, Johnson B, Neves E, Fisher A, **Graber J**, et al. High intensity interval training benefits right heart function in a rat model of pulmonary arterial hypertension. Poster presented at: IUPUI Research Day; Feb 2016; Indianapolis, IN.

Funded/In Review Grant Activity:

Graber J (PI)

Optimizing rehabilitation prescription after knee replacement: advancing the “people-like-me” approach for Veteran-centered care.

This study aims to use VA electronic health record data to predict poor recovery after knee replacement, characterize current postoperative rehabilitation prescription patterns, and evaluate the suitability of clinical data for building predictive models and tools.

Award Period: in review

Awarded by: Department of Veterans Affairs, Office of Research & Development, Rehabilitation Research Development and Translation

Award Amount: pending

Stevens-Lapsley JE (PI), Graber J (Co-I)

Improving rehabilitation for veterans after total knee arthroplasty through individualized recovery trajectories.

This study aims to use clinical decision support to provide Veterans with more effective, efficient, and patient-centered care after total knee arthroplasty.

Award Period: 04/01/22 – 03/01/2026

Awarded by: Department of Veterans Affairs, Office of Rehabilitation Research and Development (1I01RX003770-01A1)

Award Amount: \$1,198,128

Completed Grant Activity:

Graber J (Research Fellow)

Comparing target trial emulation and transportability for evaluating blood pressure management strategies using electronic health record data.

This project aims to evaluate different blood pressure management strategies in patients with and without diabetes mellitus using two different analytical methods for clinical data–target trial emulation and transportability methods.

Award Period: 09/01/23-07/01/25

Awarded by: VA Seattle/Denver Center of Innovation

Award Amount: Full salary support

Graber J (Research Fellow)

Establishing personalized utilization guidelines in knee arthroplasty rehabilitation.

This study aims to use predictive analytics and expert opinion to develop an algorithm for personalized utilization recommendations for rehabilitation after knee arthroplasty.

Award Period: 09/01/21 – 08/31/23;

Awarded by: VA Eastern Colorado Geriatric Research, Education, and Clinical Center

Award Amount: Full salary support

Graber J (Trainee), Stevens-Lapsley JE (Mentor)

Developing a reference chart for monitoring quadriceps strength after knee arthroplasty

The aim of this project is to create sex-specific reference charts that describe normative quadriceps strength recovery following knee arthroplasty.

Award Period: 06/02/20 – 12/01/20

Awarded by: Rheumatology Research Foundation, Medical and Graduate Student Preceptorship.

Award Amount: \$4,000

Graber J (Research Assistant), Stevens-Lapsley JE (Principal Investigator)

Novel Strategies for Personalizing Clinical Decisions in Knee Arthroplasty

The aim of this project is to develop procedures for rapid optimization and validation of prediction algorithms for knee function, physical function, and patient-reported function and to develop and implement a web-application for patients with knee arthroplasty.

Award Period: 09/01/18 – 08/31/23

Awarded by: Agency for Healthcare Research and Quality (R01 HS025692)

Award Amount: \$1,922,505

Membership in Scientific/Professional Organizations:

American Physical Therapy Association (APTA)

Colorado Physical Therapy Association

Academy of Research, APTA

Academy of Orthopedics, APTA

Dates

2013-present

2013-present

2019-present

2019-present

Community Service:

Denver Court Appointed Special Advocate

Dates

2020-2022

Services to the University/College/School on Committees/Councils/Commissions:

Honors and Awards:

Marliyn Gossman Award, Academy of Research, APTA

Dates

2024

Rehabilitation Science Levy Scholarship, University of Colorado	2022
Hirs Student Travel Award, University of Colorado	2021
Adopt-a-Doc Award, Academy of Geriatric Physical Therapy, APTA	2021
Hirs Academic Enrichment Scholarship, University of Colorado	2019
Founder Scholar, Indiana University	2013
Hutton Honors College Scholarship, Indiana University	2009

Continuing Education Attended:

- 2024 Target Trial Emulation, CausaLab, Harvard University, Cambridge, MA
- 2024 Advanced Confounding Adjustment, CausaLab, Harvard University, Cambridge, MA
- 2024 Combined Sections Meeting, APTA, Boston, MA
Education sessions attended
- Leveraging health informatics for quality improvement research
 - Predicting sport injuries
 - AI in rehabilitation
- 2022 Advances in Rehabilitation Technology, APTA Academy of Research, Beverly, MA
Education sessions attended
- Wearable technology
 - Telehealth and mobile health
 - Wearable robotics
- 2022 Combined Sections Meeting, APTA, San Antonio, TX
Education sessions attended
- Using data to revolutionize the practice of Physical Therapy
 - Health informatics in Physical Therapy: current practice and preparation for the future of our profession
 - Quantifying value in real time to improve quality of care
- 2022 Colorado Pragmatic Research in Health Conference, Aurora, CO
Education sessions attended
- Making a sustainable and equitable impact on health through pragmatic research: the translational sciences benefits model
 - Impact is in the eye of the beholder: what outcomes matter to your stakeholders?
 - How to disseminate your science
- 2021 Combined Sections Meeting, APTA, Virtual
Education sessions attended
- Rehabilitation clinical trials: the latest guidance for authors and reviewers
 - Qualitative data analysis in physical therapy research: Parts 1 and 2
 - Ask-a-librarian: smarter searching in 2 hours or less
- 2021 Colorado Pragmatic Research in Health Conference, Virtual

Education sessions attended

- Clinical prediction models
- Analyzing correlated data: basics of the linear mixed effects model
- Patient reported measures: on the ground collection, implementation, and clinical workflow

2021 Center on Health Services Training & Research (CoHSTAR), Foundation for Physical Therapy Research, Virtual

Education sessions attended

- Patient-reported outcomes and utilization of telehealth physical therapy
- Strategies of optimizing telemedicine

2020 Combined Section Meeting, APTA, Denver, CO

Education sessions attended

- Eugene Michaels Research Forum. Infobesity in practice: is big data interfering with clinical decision making?
- Academic careers: negotiating and advancing within the physical therapy profession
- What's your point? Writing and reviewing with precision for impact and clarity

2020 Center on Health Services Training & Research (CoHSTAR), Foundation for Physical Therapy Research, Virtual

Education sessions attended

- CPG implementation: low back pain, adhesive capsulitis
- Clinical practice guidelines as a foundation for implementation science
- Accelerating the uptake of evidence – synergy between implementation and improvement science

2020 Colorado Pragmatic Research in Health Conference, Virtual

Education sessions attended

- Selecting a study design for your pragmatic research
- Translating research evidence into practice to improve health equity: lessons from a faith-based physical activity intervention

2019 APTA Learning Center

- The International Classification of Functioning, Disability, and Health (ICF): Overview

2018 Spinal Manipulative Institute, Portland, OR

- Thrust manipulation

Current Teaching Responsibilities at the Hybrid Entry-level Physical Therapy Campus:

Fall 1

DPTR 5621: Evidence Based Practice (3 credits): Course Coordinator, Instructor

Spring 1

DPRT 5631: Clinical Reasoning 1 (1 credit): Instructor