

NEW INVESTIGATOR FELLOWSHIP TRAINING INITIATIVE - Guidelines

PREFACE

The mission of the Foundation for Physical Therapy is to fund physical therapy research supporting evidence-based practice that enhances the quality of patient and client services and to develop the next generation of researchers.

Innovative research supported by the Foundation for Physical Therapy changes the face of health care by providing a society that thrives on mobility with the information needed to develop, restore, maintain, and enhance physical functioning.

FELLOWSHIP PROGRAM OBJECTIVES AND FUNDING PRIORITIES

Statement of Intent for Funding

The Foundation, like the physical therapy profession, is dedicated to the goal of improving the quality and delivery of patient care. The Foundation accomplishes this goal by providing support to new investigators to promote development of research careers pursuing scientifically based and clinically relevant research that demonstrates the clinical effectiveness and functional outcomes of physical therapy practice.

The Foundation supports only those intervention studies in which the interventions are provided by physical therapists, or selected components of the interventions are provided by PTAs under the direction and supervision of physical therapists.

Post-Professional, Post-Doctoral Fellowships: The purpose of the Foundation's New Investigator Fellowship Training Initiative (NIFTI) program is to fund post-professional, doctorally prepared physical therapists as developing researchers and improve their competitiveness in securing external funding for their future research by supporting mentored research experiences.

The number of NIFTIs funded may vary from year to year. All guidelines are subject to change as the needs of the physical therapy profession change.

Scientific Review Committee (SRC): Guidelines for distribution of funds and criteria for selecting recipients are established by the Foundation's Board of Trustees (BOT) and implemented by the SRC. Selected by the BOT, the SRC is comprised of physical therapist researchers and others with experience preparing students for research careers. The SRC reviews applications and makes funding recommendations to the BOT for final approval.

Objective

The purpose of the NIFTI is to fund post-professional, post-doctoral education that consists of a mentored research experience. Awards are made to the most highly qualified post-doctoral physical therapist applicants who intend to pursue a career in research and who are most likely to ensure that the physical therapy profession benefits from their commitment and scholarship. These NIFTIs will help continue the

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development of post-professional, doctorally prepared physical therapists that will add to or refine the body of knowledge on which physical therapy practice is based.

The NIFTI is designed to support research training experiences in new settings in order to maximize the acquisition of new skills and knowledge; in most cases, therefore, **the Sponsoring Institution must not be an institution where the applicant has trained for more than a year**. However, in unusual circumstances, applicants may propose post-professional, post-doctoral training experiences at an institution where they have been training for more than a year. In such cases, the applicant must carefully document the opportunities for new research training experiences specifically designed to broaden his/her scientific background. **Please keep in mind that this is a training award and not a research award.**

Priorities

In order to be eligible for funding through a NIFTI, the post-professional, post-doctoral experience must provide mentored research training in an area that is relevant to physical therapy. The experience may be an expansion of the applicant's post-professional doctoral research program and/or must enhance the applicant's research capabilities that contribute to the knowledge base of physical therapy.

Applicants must begin to address the most critical questions regarding clinical research as outlined in APTA's Research Agenda (RA) and explain how the proposed project will contribute to the needs of the physical therapy profession, including its implications for physical therapy theory and practice. Preference will be given to those projects that directly address the RA. If a proposed project does not directly address an item or items in the RA, the applicant must explain how the project will enable the applicant to directly address the RA in the future. The RA is provided as a guide to identify critical research questions in physical therapy.

Priority will also be given to applicants who have a:

- Demonstrated commitment as a physical therapist to pursue a career in research;
- Demonstrated commitment from his/her mentor and a strong mentor-mentee relationship;
- Demonstrated ability of the mentor and fellowship environment to foster quality research.

Policy Governing Use of Subjects

Vertebrate Experimental Animals: If vertebrate experimental animals are involved in the study, the proposed research must include specific procedures for review of the protocol in compliance with federal policy on the humane use of animal subjects. Also, the Institutional Animal Care & Use Committee (IACUC) must have approved or given a waiver for the project.

Human Subjects: If data is to be collected on human subjects, or if data used in the project contains identifiable private information that can be linked to human subjects, the research plan must include specific procedures for review of the protocol and securing informed

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consent of subjects in compliance with federal policy on protection of human subjects.

Proof of IRB approval is not required at the time of application, but a plan to apply for IRB approval must be included with the application when submitted. IRB approval documents must be on the sponsoring institution's letterhead and signed by an appropriate institution official. IRB approval must be valid at the start of the fellowship period (September). Should an awarded project have IRB approval that will expire in September or later, re-approval must be received by the Foundation 30 days prior to the date of expiration. If the proposed project has more than one site, IRB approval or exemption **must** be obtained for every site in the project. Also, the institution sponsoring the project's research must be covered by an institutional assurance number, indicating compliance with Department of Health and Human Services (DHHS) regulations governing the protection of human subjects. The application will be subject to administrative disqualification if these requirements regarding IRB are not met.

In addition, if data is to be collected on human subjects, or if data used in the project contains identifiable private information that can be linked to human subjects, the Principal Investigator and those involved in the conduct of the study must provide certificates demonstrating completion of human subjects protection training. The training must be valid according to the dates listed on the certificate. Completion of human subjects training via CITI, NIH, or the project's home institution meets this requirement. If submitting a certificate from a different human subjects protection training course, the certificate and a brief description of the contents of the course must be provided. **The Foundation will not accept a letter in lieu of a certificate indicating that a human subjects protection training course has been completed.** The application will be subject to administrative disqualification if certificates for **ALL** key personnel are **not** attached and/or a letter rather than certificates is attached.

Standards for Privacy of Individually Identifiable Health Information, the "Privacy Rule," is a federal regulation under the Health Insurance Portability and Accountability Act (HIPAA) of 1996 that governs the protection of individually identifiable health information from covered entities through collaborative or contractual agreements. Decisions about whether and how to implement the Privacy rule reside with the researcher and his/her institution.

GENERAL INFORMATION

Fellowship Amount

This is a 2-year training experience – no exceptions. The Year One award amount is \$45,000 with an additional \$5,000 for supplies and project expenses. The award amount for Year Two will be \$50,000. Awards will be made based on the availability of funds.

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Funding will be sent directly to the Sponsoring Institution. The funding will be delivered in four payments. The NIFTI Period of Performance will begin September 1 of the year in which the award is granted unless another period has been requested and approved in writing prior to application submission.

Maximum Aggregate Amount The maximum aggregate amount per applicant for all post-professional, post-doctoral fellowships from the Foundation is \$100,000.

Fellowship Period **The NIFTI is a 2-year award – no exceptions.** Year one begins September 1 in the year of application and ends August 31 of the following year. Year Two begins on September 1, immediately following Year One, and ends the following August 31. **Any deviations from the Period of Performance must be approved prior to application.**

Use of Funds With the exception of the \$5,000 for supplies and project expenses in Year One, the fellowship is intended to provide direct salary support. No fringe benefits or indirect costs are allowed for this fellowship. **Please make your institution fully aware of this restriction.**

Other Support All sources of previous and current support, including Foundation or APTA support, must be identified in the Financial Support Section of the Application.

Payment of Funds All funds are paid directly to the Sponsoring Institution.

Schedule of payment:

Year One:

\$20,000 (for salary) + \$5,000 (supplies & project expenses) Sept.
\$25,000 March

Year Two:

\$25,000 (for salary) October
\$25,000 (for salary) March

Applicant Eligibility

At the time of application, the applicant must:

- possess a license to practice physical therapy in the U.S. or in a U.S. jurisdiction, or
- have met all the requirements for physical therapy licensure in the U.S. or in a U.S. jurisdiction, including having received a passing score on the licensure exam, or
- possess a PTA license in the U.S. or in a U.S. jurisdiction, or
- have met all the requirements for licensure as a PTA in the U.S. or in a U.S. jurisdiction, including having received a passing score on the licensure exam.

The applicant must have completed a research experience as part of their post-professional doctoral education.

The applicant must have received the required post-professional doctoral degree or the professional education degree in physical

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therapy (for those already holding a post-professional doctoral degree), **no earlier than five years prior to the year of application and no later than June 30th of the year of application. (Evidence of receipt of the degree must be received by the Foundation by July 15).**

The applicant must receive permission from the Scientific Program Administrator **PRIOR TO** application if this fellowship training will be **in addition to or after any other funded post-professional, post-doctoral training experience that extends post-professional post-doctoral training beyond three years in total.**

The applicant must commit at least 50% of his/her time to the project.

The applicant must demonstrate a strong relationship with his/her mentor with a documented commitment of support and assistance from his/her mentor.

The applicant must demonstrate a commitment to further the physical therapy profession through research and teaching in the United States and its territories.

The applicant must be a U.S. citizen or permanent resident.

If the applicant is a current or prior Foundation for Physical Therapy funding recipient, he/she must be considered in GOOD STANDING with the Foundation in order to be eligible to apply.

Please see sections on Reporting and Requests for Approval of Changes within TERMS AND CONDITIONS OF FELLOWSHIP for more information about this.

There can be no overlap between funding mechanism periods of performance.

Physical Therapist Assistant applicants, please note:

- the Foundation supports only those intervention studies in which the interventions are provided by physical therapists, or selected components of the interventions are provided by PTAs under the direction and supervision of physical therapists.

Institution & Mentor Requirements

To be considered for a Foundation NIFTI, the mentor/Sponsoring Institution **must** provide documentation that:

- The applicant is guaranteed at least 50% release time to work on his/her project
- The mentor must provide assistance with the research training of the applicant as well as his/her leadership for and mentoring of the applicant
- The mentor or Sponsoring Institution will provide the equipment required for the NIFTI Research Project

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TERMS AND CONDITIONS OF SCHOLARSHIPS

Non-Compliance

Failure of the NIFTI recipient to comply with the policies governing this award may be grounds for early termination of the NIFTI and/or denial of any future consideration by the Foundation for any of its programs. Failure to comply with the policies governing this award will result in the NIFTI recipient NOT being considered in GOOD STANDING with the Foundation. **If the NIFTI recipient is NOT considered in GOOD STANDING with the Foundation, the NIFTI recipient is NOT eligible to apply for any other Foundation funding mechanism.**

The Foundation may request additional information from which a decision to continue or to terminate the NIFTI can be made. **In cases of early termination of the NIFTI, the NIFTI recipient and Sponsoring Institution shall be notified by the Foundation in writing 60 days prior to the termination of the NIFTI.**

Research Integrity

The Foundation expects that the highest ethical standards and compliance with public laws and regulations will be adhered to by all NIFTI recipients when undertaking any type of research supported by Foundation funds. It is expected that NIFTI recipients will:

- Be intellectually honest in proposing, performing, and reporting research
- Be accurate in representing contribution in research proposals and reports
- Be fair in peer reviews
- Be collegial in scientific interactions, including communications and sharing of resources
- Be transparent in conflicts of interest or potential conflicts of interest
- Ensure the protection of human subjects in the conduct of research in compliance with the Department of Health and Human Services' regulations governing the protection of human subjects
- Ensure humane care of animals in the conduct of research in compliance with Public Health Service's policy on humane care and treatment of laboratory animals
- Adhere to the mutual responsibilities between investigators and their research teams.

Obligations/Service

Upon completion of the NIFTI, NIFTI recipients will:

- (1) engage in one year of research or teaching in an academic physical therapist practice or education program of their choice, for each year of support, within one year after completion, or refund the fellowship in full;
- (2) provide an acknowledgement of the Foundation's support in any publications related to the fellowship;
- (3) agree to participate in any studies of NIFTI recipients sponsored by the Foundation; and,

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- (4) show evidence of submitted or presented material related to the fellowship research to APTA's Annual Conference as a poster or platform presentation within two years of completion.

NIFTI recipients who cannot comply with these requirements within the specified time period must notify the Foundation in writing and request an extension to fulfill requirements. **Failure to meet these requirements could make the NIFTI recipient NOT in GOOD STANDING with the Foundation and could make the NIFTI recipient ineligible to apply for any other Foundation funding mechanism.**

Reporting

The NIFTI recipients must provide Progress Reports and a Final Report, via email, to the Foundation in the format provided below. Failure to submit a report by the stated deadline will delay or jeopardize continued or future support from the Foundation. **If the NIFTI recipient fails to comply with reporting requirements, he/she will NOT be considered in GOOD STANDING with the Foundation and will NOT be eligible to apply for any other Foundation funding mechanism.**

Progress Report: All NIFTI recipients will submit, via email, detailed progress reports in six month intervals beginning six months after the start of the project (Year One: February 28, August 31, and Year Two: February 28). The Progress Report shall include:

- (1) a brief summary of work completed during the NIFTI Period,
- (2) a discussion of any major problems encountered to-date,
- (3) objectives accomplished as compared to the original timeline,
- (4) an explanation of and justification for any deviation from the original plan of action, and
- (5) an explanation of any proposed changes to the plan.

Failure to submit a Progress Report on time may delay or forfeit the release of the next increment of funding. In addition, a sub-committee of the SRC may review NIFTI Progress Reports and make recommendations for payments for non-competitive renewal for Year Two.

Final Report: All NIFTI recipients must submit a Final Report, via email, to the Foundation within 30 days of the completion of the contracted Period of Performance. **Failure to submit a Final Report will bar the recipient from any future Foundation funding as the recipient will NOT be considered in GOOD STANDING with the Foundation.** Further, any PENDING funding award from the Foundation will be contingent upon the submission of an approved NIFTI Final Report if there is overlap between the NIFTI Period of Performance and the other funding mechanism application deadline.

The Final Report must include:

1. a summary description of the overall program, work completed, and the results of any research undertaken;

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2. a list of publications or manuscripts submitted for publication as a result of work supported fully or in part by the Foundation;
3. any plans for future research related to the NIFTI project;
4. a financial report of expenditures related to the award.

NIFTI recipients must provide the Foundation with an electronic PDF of all publications (upon publication) from any post-professional, post-doctoral research supported totally or in part by the Foundation. Acknowledgement of Foundation support for any publications or presentations should be stated as such: "***This work was supported in full/part by a New Investigator Fellowship Training Initiative award from the Foundation for Physical Therapy.***"

NIFTI recipients are also required to update the abstract with the following information and email it to the Scientific Program Administrator at the time the final report is submitted:

1. **Findings:** Results from the project.
2. **Lay Language Summary:** An updated description of the project in terms that a lay person can understand that includes a summary of the project findings, suitable for distribution and publication by the Foundation.

Publications:

Abstracts:

Presentations:

After each heading, enter the complete list of all submitted, in press, or published articles and all abstracts or presentations related to your project.

Requests for Approval of Changes

Extension of Fellowship Period of Performance: A written request for extension of reporting deadlines with no additional funding (No Cost Extension (NCE)) must outline in detail the reasons for the requested extension. **Such a request must be received by the Foundation 30 days prior to the expiration of the original term of the NIFTI.** In general, it is the policy of the Foundation to consider granting NCEs to scholarships, fellowships and research projects only under the following conditions:

1. All reports have been filed with the Foundation on time as specified in the Letter of Agreement.
2. The Foundation has been notified of the need for an extension at least 30 days in advance of the award's termination.
 - When the reason for the NCE request is a change or pending change in the status of the scholarship, fellowship, or grant recipient that prevents the accomplishment of the goals and objectives for which the award was made, **the awardee shall have notified the Foundation within**

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five days of the awardee's becoming aware of such change or pending change.

If the Foundation, in its sole discretion, believes that its interests are best protected by allowing the NIFTI recipient to use all or some of the funds to complete an education program, a research project or portion of a research project, a NCE may be granted as determined by the Foundation's Executive Director and Scientific Program Administrator.

In the event that a NCE is granted, no PENDING applications for another Foundation funding mechanism from the NIFTI recipient will be considered until the term of the extension has expired.

Early Release from Fellowship Period of Performance: a written request on official letterhead must be submitted by both the NIFTI recipient and the Sponsoring Institution to terminate the contracted Period of Performance of the fellowship. **This request must be received at least 60 days in advance of the requested termination date.** The Sponsoring Institution should be aware that unpaid award increments will be forfeited or pro-rated due to early termination and/or unused funds already awarded will be requested to be returned to the Foundation.

If the NIFTI recipient fails to request Early Release from the contract Period of Performance at all or not within the specified time period, they will NOT be considered in GOOD STANDING with the Foundation, and will NOT be eligible to apply for any other Foundation funding mechanism.

Changes in Status of NIFTI Recipient: The NIFTI recipient must notify the Foundation upon becoming aware of any material change or pending change (e.g., change of mentor, change of institution) that may prevent accomplishment of the goals and objectives of the program. **Such notice must be received by the Foundation within five days of the NIFTI recipient's becoming aware of such change or pending change.** The Foundation, in its sole discretion, shall determine whether such a change in advising or coursework jeopardizes the NIFTI recipient's ability to complete the program. The NIFTI recipient must notify the Foundation of any change in status (e.g., change in area of study). The Foundation may request additional information from which a decision to continue or terminate the NIFTI can be made. **In cases of early termination of the NIFTI on the Foundation's part, the NIFTI recipient and Sponsoring Institution shall be notified by the Foundation in writing 60 days prior to the termination of the NIFTI.** The Sponsoring Institution should be aware that if the decision is made by any party to terminate the NIFTI, any unpaid award increments may be forfeited or pro-rated and/or unused funds already awarded will be requested to be returned to the Foundation.

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If the NIFTI recipient fails to notify the Foundation at all or not within the specified time period, they will NOT be considered in GOOD STANDING with the Foundation, and will NOT be eligible to apply for any other Foundation funding mechanism.

CRITERIA FOR EVALUATION OF APPLICATION

The SRC has responsibility for reviewing applications for the NIFTI funding mechanism and recommending to the BOT the application(s) which are eligible for funding. The SRC, in evaluating applications, will take into account the following criteria.

Fellowship Applicant

Is the applicant's academic record appropriate? Are the applicant's academic training and research experience of high quality? Does the applicant have the potential to develop as an independent and productive researcher?

Mentors, Collaborators and Consultants

Are the mentor's (and if applicable, the co-mentor's) research qualifications and track record of mentoring post-doctoral trainees appropriate for the proposed fellowship? Has the mentor(s) been successful in competing for research support? Is there evidence of a match between the research interests of the applicant and the mentor(s)? Is there a demonstrated ability and commitment of the mentor to assist in meeting the applicant's needs? If collaborators and/or consultants will be involved in the applicant's training is their expertise complementary? Do they have appropriate experience in fostering the training of doctoral and post-doctoral trainees?

Training Plan

Is the Training Plan consistent with the applicant's stage of research development? Will the Training Plan provide the applicant with individualized and supervised experiences that will develop research skills needed for his/her independent and productive research career?

Research Project Plan

Is the proposed Research Project Plan of high scientific quality, and does it relate to the applicant's Training Plan? Is the project's methodology appropriate and will it allow the applicant to answer the project's hypotheses or research questions? Be sure to include comments on sample size, recruitment and retention plans, as well as on the appropriateness of the assessment and outcome measures used.

Training Potential

Does the proposed Training Plan have the potential to provide the applicant with the requisite individualized and supervised experiences that will develop his/her research skills? Does the proposed Research

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Project Plan have the potential to serve as a sound foundation that will lead the applicant to an independent and productive career?

Institutional Environment and Commitment to Training

Are the research facilities, resources (e.g. equipment, laboratory space, computer time, subject population), and training opportunities adequate and appropriate? Is the institutional environment for the scientific development of the applicant of high quality, and is there appropriate institutional commitment to fostering the applicant's training as an independent and productive researcher?

Research Agenda

Does the project address the APTA Research Agenda?

Additional Review Considerations

Items such as format and cohesiveness of application may be addressed and evaluated as part of overall impact/merit score.

Research Agenda

Adopted and promulgated by APTA's Board of Directors (BOD), the Clinical Research Agenda was the result of a series of conferences and editorial review processes in which large numbers of physical therapists participated. The Agenda was published in May 2000 (Clinical Research Agenda for Physical Therapy. *Phys Ther.* 2000; 80:499–513).

The CRA underwent extensive review and revision based upon input from all APTA Sections to produce the new Research Agenda, published in March 2011. The term "clinical" was removed from the title in recognition of a "more comprehensive perspective of physical therapy research than the manner in which the Clinical Research Agenda was perceived" (Goldstein et al., 2011, p. 1). The new Research Agenda reflects the changes in rehabilitation practices as well as expands upon the scope of rehabilitation research (Goldstein et al., 2011, p. 5).

APTA supports research that is conducted across all points on the continuum of health-related research. The BOD recognizes that the domains along this continuum should not be perceived as mutually exclusive areas of knowledge and that research across the continuum is vital to the profession of physical therapy. In March 2005, the BOD passed P03-05-18-49, Continuum of Research in Physical Therapy:

The profession of physical therapy is committed to understanding and participating in basic science, mechanistic, translational, clinical, and health services research, in order to provide patients/clients with the most current, appropriate, and effective management. The American Physical Therapy Association (APTA) has an obligation to foster leadership and participation in all research efforts related to the science of physical therapist practice. The science is inherently transdisciplinary and encompasses a seamless continuum of research from basic underlying mechanisms and theory to clinical application. The key questions confronting physical therapy require employment of the full range of methodological designs and approaches.

The CRA, and now the Research Agenda, should be read in this context. The Agenda describes prototypical questions that are relevant to clinical practice—and that are answerable in the near-term—within the broad array of questions along the continuum of research germane to physical therapy. Additional specific questions, including basic and applied scientific inquiries, also could provide new knowledge that would enhance physical therapist practice. If the answers to additional research questions can be applied to clinical practice, those questions would then be consistent with the intent of the Research Agenda and can be legitimately included as part of the Research Agenda.

More information regarding the review and revision of the Research Agenda may be found at:

Goldstein MS, Scalzitti DA, Craik RL, Dunn SL, Irion JM, Irrgang J, Kolobe THA, McDonough CM, Shields RK. The Revised Research Agenda for Physical Therapy. *Physical Therapy.* 2011; 91(2): 1-10.

I. Basic Science Research

1. Identify how genetic, anatomical, biomechanical, physiological, or environmental factors contribute to excessive stress, injury, or abnormal development of body tissues and systems.
2. Determine if modifiable genetic, anatomical, biomechanical, physiological, or environmental factors can decrease risk of excessive stress, injury, or abnormal development of body tissues and systems.
3. Examine the effects of physical therapy interventions that are provided independently or in combination on cellular structural properties and physiological responses of healthy, injured or disease body tissues.
4. Investigate the factors that modify the response to physical therapy intervention and positive tissues adaptation (eg, genetic, functional, structural, psychosocial, and physiological factors).
5. Determine the optimal dose of physical therapy interventions (frequency, duration, intensity) to achieve optimal cellular and physiological adaptation/response of body tissues and systems.

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6. Examine skill acquisition and motor development in individuals with movement disorders.
7. Examine the relationship between biomarkers and impairments in body structure and function, limitations in activity, and restrictions in participation. (Biomarkers are any tools used to identify and quantify biologic responses).
8. Define the role for physical therapy in maturation and modeling of genetically engineered tissues.
9. Determine the mechanisms by which physical therapy interventions modify disease and age-related or injury induced changes in normal cellular structure and function using appropriate human and animal models.
10. Develop new physical therapy interventions to promote tissue growth and adaptation.

II. Clinical Research

1. Determine the relationships among levels of functioning and disability, health conditions, and contextual factors for conditions commonly managed by physical therapists (eg, *International Classification of Functioning, Disability, and Health*).
2. Develop and evaluate models of health and disability to guide the investigation, prevention, and treatment of health conditions relevant to physical therapy.
3. Identify factors that predict the risks of, or protection from, health conditions (injury, disorders, and disease).
4. Examine the impact of health promotion interventions that include the involvement of physical therapists on activity and participation of individuals with movement disorders.
5. Evaluate or develop effective interventions to prevent or reduce the risk of disability associated with common health conditions.
6. Determine the effects of interventions provided by physical therapists to address secondary prevention in patients/clients with chronic diseases (eg, diabetes, obesity, arthritis, neurological, other disorders).
7. Determine the physical therapist's role and impact in contemporary delivery models on prevention of diseases and their secondary side effect.
8. Identify technologies to assist physical therapists in developing prevention approaches that optimize outcome.
9. Develop and evaluate effective patient/client classification methods to optimize clinical decision making for physical therapist management of patients/clients.
10. Identify criteria for progression in levels of care, activity, or participation of the patient/client.
11. Identify thresholds for adequate physical function to optimize outcomes and prevent injury.
12. Identify contextual factors (eg, personal and environmental) that affect prognosis.
13. Identify technologies to assist physical therapists in determining patient/client classification.
14. Determine predictors of recovery from adverse effects associated with medical or surgical treatment.
15. Determine the effectiveness and efficacy of interventions provided by physical therapists across relevant domains of health.
16. Determine interactions among interventions provided by physical therapists.
17. Determine the effectiveness and efficacy of interventions provided by physical therapists delivered in combination with other interventions (eg, medical, surgical, or biobehavioral interventions).
18. Determine the effects of frequency, duration, intensity, and timing of interventions provided by the physical therapist.

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19. Develop and test the effectiveness of physical therapists interventions for primary and secondary conditions or disability.
20. Develop and test the effectiveness of physical therapist interventions to optimize treatment outcomes for specific subgroups of patients/clients.
21. Develop and test the effectiveness of decision support tools to facilitate evidence-based physical therapist decision making.
22. Develop and test the effectiveness of methods to improve patient/client adherence to the plan of care and self-management.

III. Education/Professional Development

1. Evaluate the effect of physical therapist postprofessional specialty training on clinical decision making and patient/client outcomes.
2. Determine the best methods to foster career development and leadership in physical therapy.
3. Determine the optimal criteria for board certification.
4. Evaluate the effect of clinical education models on clinical outcomes, passing rates on the National Physical Therapy Examination, and employment settings after graduation.
5. Determine the impact of professional-level physical therapist education on professional behaviors.
6. Assess the effectiveness of models of professional education on clinical performance.
7. Determine the relationship between student cultural competency and clinical decision making.
8. Evaluate the effectiveness of different methods used to improve cultural competence.
9. Develop and evaluate the most effective methods for facilitating physical therapist acquisition and use of available information resources for evidence-based practice.
10. Evaluate the skills needed by practitioners to provide optimal patient/client care, patient/client advocacy, and cost-effective care.

IV. Epidemiology

1. Examine the incidence, prevalence, and natural course of health conditions (disorders, diseases, and injuries) commonly managed by physical therapists.
2. Examine the incidence, prevalence, and natural course of impairments of body functions and structure, activity limitations, and participation restrictions associated with health conditions commonly managed by physical therapists.
3. Investigate the effects of contextual factors (eg, personal and environmental) on the effectiveness of interventions provided by physical therapists.

V. Health Services Research/Policy

1. Perform economic evaluation of specific physical therapy interventions.
2. Evaluate the effect of physical therapy service delivery models on economic and patient/client outcomes and consumer choices.
3. Determine the relationship between documentation and payment.
4. Evaluate the comparative cost and/or cost-effectiveness of specific physical therapy interventions compared with or in combination with other interventions.

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5. Investigate factors that influence patient/client choices when selecting a health care provider or making treatment decisions.
6. Develop and evaluate new methods for incorporating patient/client values and expectations not the decision-making process.
7. Evaluate the effectiveness of shared clinical decision-making schemes between the patient/client and therapist on clinical outcomes and costs.
8. Establish the extent to which physical therapists deliver services in accordance with recommended guidelines for specific conditions and its impact on outcomes.
9. Determine disparities in the access to and provision of physical therapy and their impact on outcomes.
10. Examine the interaction among access, culture, and health literacy on physical therapy outcomes.
11. Examine the cultural competence of physical therapists and physical therapist assistants and its impact on intervention.
12. Develop innovative medical informatics applications for physical therapy and assess their impact on clinical decision making.
13. Investigate the influence of health policies on practice patterns and outcomes.
14. Evaluate methods to enhance adherence to recommended practice guidelines.
15. Assess the impact of continuity of physical therapy services on outcomes.
16. Describe patterns of physical therapy use and identify factors that contribute to variation in utilization.

VI. Workforce

1. Examine the effects of staffing patterns on the outcomes of physical therapy.
2. Assess productivity of physical therapists in various settings and identify factors (eg, use of extenders, mandates) that contribute to variations in productivity.
3. Identify and test the best methods to assess past, current, and future demand and unmet needs for physical therapy.
4. Identify the demand for services among populations underserved by physical therapists.
5. Determine factors that contribute to the attractiveness of practicing in various settings and geographic regions.
6. Determine factors that contribute to the retention of physical therapists across various settings and geographic regions.
7. Determine the effectiveness of recruitment and retention initiatives in reducing the gap between supply and demand in various practice settings.
8. Identify variables that influence the decision of whether or not to enter the physical therapy profession.
9. Assess the impact of expanded scope of practice on supply and demand.
10. Investigate the relationship between the distribution of physical therapists and population health outcomes.
11. Examine the effects of workforce issues on career pathways (eg, participation in residency, fellowship, research training).
12. Examine the effects of participation in extended clinical training experiences on workforce.

VII. Measurement Development and Validation

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1. Develop or adapt measures of effectiveness and impact of physical therapy at the community level.
2. Develop new tools or refine existing tools to measure the impact of physical therapy on activity.
3. Provide evidence to guide selection and interpretation of measurement tools for specific purposes, conditions, and populations.
4. Develop and test a minimum set of measures to evaluate the process and clinical outcomes for specific conditions and populations.
5. Develop reliable and valid measures of cultural competence of physical therapy providers and students.
6. Determine how contemporary technology (eg, ultrasound, gene array, magnetic resonance) can be used to measure the effects of injury/disease and physical therapy intervention on body structure and function.
7. Determine optimal measurement methods to enhance clinical decision making for specific conditions and populations.