

## Health Sciences

### School of Health and Rehabilitation Sciences Indianapolis

**Acting Chairperson**

Professor Joyce MacKinnon, Ed.D., PT

**Departmental E-mail**[jmackinn@iupui.edu](mailto:jmackinn@iupui.edu)**Departmental URL**[www.shrs.iupui.edu/](http://www.shrs.iupui.edu/)

### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

**Professors**

M. Sue Brady (Emerita), Joyce Mac Kinnon, Jacquelynn O’Palka, Karyl Rickard\*, Lisa Riolo\*

**Associate Professors**

Sara Blackburn, Jeffrey Crabtree, Judith Ernst, Thomas Fisher\*, Patricia Scott

**Assistant Professors**

Peter Altenburger, Tracy Dierks, Robin Fuchs\*, Michael Justiss, Arlene Schmid, Stuart Warden\*

**Graduate Advisor**

Joyce Mac Kinnon, 120 Coleman Hall, 1140 West Michigan Street, Indianapolis, IN 46202, (317) 274-1029

### Degrees Offered

Master of Science in Health Sciences, Master of Science in Therapeutic Outcomes Research, Doctor of Philosophy in Health and Rehabilitation Sciences, Graduate Certificate in Health Sciences Patient Centered Outcomes.

### Master of Science in Health Sciences

**NOTE: This program is not accepting new students for 2009-2010**

Graduate Office  
Union Building 207  
Indiana University–Purdue University Indianapolis  
Indianapolis, IN 46202  
(317) 274-1577  
Contact: [gradoff@iupui.edu](mailto:gradoff@iupui.edu)

**Program Information**

This graduate program is offered through the University Graduate School. The program’s objective is to provide credentialed health care professionals information about current trends and issues in health care. This includes the growing use of technology, the use of evidence to inform practice decisions, and the use of outcome measures focused on the individual patient/client. Concurrently, the student is able to develop a concentration in a related cognate area including, but not limited to, education, management, or advanced practice.

The program is designed for working health care professionals intending to work in educational or clinical settings who want to pursue advanced formal education that would encompass new technologies and ways of informing practice as well as permit flexibility in exploring a particular cognate area of interest. Many of the courses are offered in the evening or through distance education formats.

**Program Requirements**

The program consists of a minimum of 36 credit hours, including a required 6 credit hour practicum or thesis. The program curriculum consists of three components: (1) health sciences core courses, (2) research courses to include the thesis or practicum, and (3) courses in the cognate area. The program director and the student formulate an academic program to assure relevance to the student’s long-range professional plans.

**Admission Requirements**

Students accepted into the program must complete university, school, and program admission requirements. Specific school and program admission requirements include:

1. An appropriate level of achievement on the general Graduate Record Examination (GRE). Test scores of at least 500 on verbal and analytical sections OR for those students enrolled in the Certificate in Health Sciences Patient Centered Outcomes (see certificate description below), completion of all four courses in the certificate with a grade of B (3.0) or better in each course.
2. Two letters of recommendation from those familiar with the applicant’s academic and professional performance.
3. Eligibility for license or credential in a health care profession.

Exceptions to these requirements may be granted by the School of Health and Rehabilitation Sciences Academic Studies and Research Development Committee upon written petition from the applicant and with written recommendation from the Health Sciences program director. The petition must include a full statement of conditions justifying the exception. Conditional admission will be for a stated time period and will entail spe-

cific conditions to be met to receive regular admission status. No student will be permitted to work toward a degree without first being admitted to the Master of Science Program.

### **Prior Course Work Applied Toward Degree Requirements**

A maximum of 6 graduate credit hours earned at Indiana University before admission may be applied toward a degree. Upon the recommendation of the Health Sciences program director and with the approval of the School of Health and Rehabilitation Sciences Academic Studies and Research Development Committee, up to 8 credit hours of graduate work at other institutions may be transferred in partial fulfillment of degree requirements. No course may be transferred from another institution unless the course was completed with a grade of B or higher within five years before matriculation in the Master of Science degree program.

### **Application Materials**

An applicant must submit completed application forms to the Office of Academic and Student Affairs, School of Health and Rehabilitation Sciences. Transcripts from all universities attended must be included. Indiana University graduates should request that the registrar's office send unofficial copies of their transcripts. Non-Indiana University graduates must submit at least one official transcript from each university attended.

### **Curriculum**

A total of 36 credit hours will be required to complete the degree. The hours are allocated as follows:

#### *Health Sciences Core Courses (12 credit hours)*

SHRS W510 Trends and Issues in Health Sciences (3 cr.)  
SHRS W520 Evidence Based Critical Inquiry in the Health Sciences (3 cr.)  
SHRS W540 Patient Centered Outcomes Research (3 cr.)  
INFO I530 Seminar in Health Informatics Applications (3 cr.)

All core courses are offered on-line as part of the Certificate in Health Sciences Patient Centered Outcomes.

#### *Research*

GRAD G651 Introduction to Biostatistics (or equivalent) (3 cr.)  
SHRS W570 Research Communication (2-3 cr.)  
SHRS W599 Thesis/non-thesis option (6 cr.)

#### *Cognate Area (12 credit hours)*

Students applying to the M.S. in Health Sciences must declare a cognate area in consultation with the program director. Examples of cognate areas include but are not limited to management/supervision, education, and advanced clinical concentration.

After identifying the cognate area and in consultation with the program director, the student will develop a plan of study in which all courses in the cognate area are identified. Listed below are some examples of possible cognate areas and possible courses within these areas. This list is meant to be illustrative and not comprehensive. The actual courses to be taken by each student would be determined in consultation with the program director and made formal in the student's plan of study.

#### *Examples of Possible Cognate Areas and Possible Courses Management/Supervision (15 credit hours)*

NURS L573 Organizational Behavior (3 cr.)  
NURS L574 Administrative Management (3 cr.)  
NURS L575 Corporate/Public Policy (3 cr.)  
NURS L651 Financial Management (3 cr.)  
SPEA H514 Health Economics (3 cr.)  
SPEA H508 Managing Health Accounting Information for Decision-Making (3 cr.)  
SPEA H623 Health Care Applications of Strategic Management (3 cr.)

#### *Education (15 credit hours)*

EDUC P575 Developing the Human Potential (3 cr.)  
EDUC H520 Sociology of Education (3 cr.)  
EDUC H530 Philosophy of Education (3 cr.)  
ACE D500 Adult Learning Theory (3 cr.)  
ACE D505 The Adult as a Client of Education (3 cr.)  
SHRS Z530 Clinical Education in the Health Sciences (3 cr.)  
NURS T615 Nursing Curriculum (3 cr.)  
NURS T670 Teaching of Nursing (3 cr.)  
NURS D742 Legal and Ethical Issues in Nursing Education (3 cr.)  
NURS W505 Interprofessional Collaboration in the Urban Schools and Communities (3 cr.)  
NURS T550 Cultural/Community Forces and the Schools (3 cr.)

#### *Advanced Clinical Concentration (15 credit hours)*

SHRS N550 Human Nutritional Pathophysiology I (3 cr.)  
SHRS N552 Human Nutritional Pathophysiology II (3 cr.)  
SHRS N570 Pediatric Nutrition I (3 cr.)  
SHRS N572 Advanced Pediatric Nutrition I (3 cr.)  
SHRS P570 Pharmacology for Physical Therapists (3 cr.)  
SHRS T580 Graduate Elective in Occupational Therapy (3 cr.)

## **Courses in Health Sciences**

**SHRS W510 Trends and Issues in the Health Sciences (3 cr.)** A seminar course to review pertinent literature and other sources of information as a basis for discussing trends and issues affecting the therapeutic professions and the health care delivery system.

**SHRS W520 Evidence-Based Critical Inquiry in the Health Sciences (3 cr.)** Fundamentals of research methodology, design, techniques, and procedures applicable to research problems in the allied health disciplines. Introduction to computer data analysis.

**SHRS W540 Patient Reported Outcomes and Economic Evaluation (3 cr.)** Exploration of selected patient reported outcomes assessment methodology and its use in economic evaluation.

**SHRS W567 Patient Centered Therapeutic Outcomes Management (3 cr.)** Students are exposed to patient/client centered outcome evaluation methods to determine health care status and the effectiveness of health care interventions.

**SHRS W570 Research Communication in the Health Sciences (2-3 cr.)** Focuses on the conceptualization and writing of the

thesis or practicum proposal.

**SHRS W599 Thesis in Health Sciences (3 cr.)** Individual investigation in the form of an organized scientific contribution or comprehensive analysis in a specified area related to health sciences.

## Master of Science in Therapeutic Outcomes Research

This graduate program is offered through the University Graduate School. This program is designed to prepare credentialed health care professionals to conduct patient outcomes research in order to evaluate the effectiveness of therapeutic interventions within their own disciplines. The chief feature of this program is the emphasis on original research to determine therapeutic benefit in terms of physiologic, symptomatic, functional, perceptual, and quality-of-life outcomes.

There have been three major eras in the evolution of the U.S. health care system since the late 1940s: expansion, cost-containment, and now assessment and accountability. In the expansion era, health care underwent remarkable growth in technology, training, and delivery. Emphasis was on the perfection of health care, with no consideration of costs or resource demands. Spiraling costs and disenchantment with the curative power of technology brought on the cost-containment era. Emphasis was then placed on limiting spending and maximizing productivity, often at the expense of patient satisfaction. Today, there is a growing understanding of the balance between use of healthcare resources on one hand and patient benefits on the other, or between assessment and accountability.

Based on a more sophisticated awareness of what actually constitutes the costs and benefits of treatment, emphasis is now placed on rational use of resources in light of a realistic appraisal of therapeutic benefits. Patient-centered outcomes research concentrates on the assessment of therapeutic interventions under conditions of real, not ideal, practice. Allied health professionals are particularly well positioned to conduct therapeutic outcomes research because their clinical work is oriented toward the holistic factors that outcomes research purports to measure: multidimensional assessment of health status and improvement of patient quality of life. Moreover, as demand for useful and valuable outcomes measurement continues to grow among healthcare institutions and organizations, allied health professionals are increasingly being called upon to conduct outcomes assessment at their place of employment.

### Admission Requirements

Students accepted into the program must meet complete university, school, and program admission requirements. The minimum admission requirements are as follows.

1. An appropriate level of achievement on the general Graduate Record Examination (GRE). Test scores of at least 500 on verbal and analytical sections OR for those students enrolled in the Certificate in Health Sciences Patient Centered Outcomes (see certificate description below), completion of

all four courses in the certificate with a grade of B (3.0) or better in each course.

2. Two letters of recommendation from those familiar with the applicant's academic and professional performance.
3. Eligibility for license or credential in a health care profession.

Exceptions to those requirements may be granted by the School of Health and Rehabilitation Sciences Academic Studies and Research Development Committee upon written petition from the applicant and with written recommendation from the Therapeutic Outcomes Research program director. The petition must include a full statement of conditions justifying the exception. Conditional admission will be for a stated time period and will entail specific conditions to be met to receive regular admission status.

No student will be permitted to work toward a degree without first being admitted to the Master of Science Program.

### Prior Course Work Applied Toward Degree Requirements

A maximum of 6 graduate credit hours earned at Indiana University before admission may be applied toward a degree. Upon the recommendation of the Therapeutic Outcomes Research program director and with the approval of the School of Health and Rehabilitation Sciences Academic Studies and Research Development Committee, up to 8 credit hours of graduate work at other institutions may be transferred in partial fulfillment of degree requirements. No course may be transferred from another institution unless the course was completed with a grade of B or higher within five years before matriculation in the Master of Science degree program.

### Application Materials

An applicant must submit completed application forms to the Office of Academic and Student Affairs, School of Health and Rehabilitation Sciences. Transcripts from all universities attended must be included. Indiana University graduates should request that the registrar's office send unofficial copies of their transcripts. Non-Indiana University graduates must submit at least one official transcript from each university attended.

### Course Requirements

A total of 30 credit hours beyond the bachelor's degree, of which 12 credit hours are in health outcomes, 3 credit hours are in electives, and 15 credit hours are in research (including thesis work).

### Thesis Requirement

The capstone experience is the writing and submission of a thesis based on original research conducted by the student and supervised by a thesis committee. Curricular electives are focused on developing expertise to articulate and research a testable hypothesis in a specific content area pertaining to patient-centered outcomes under the direction of a research advisor holding graduate faculty membership in University Graduate School. Theses must follow the Indiana University Guide to the Preparation of Theses and Dissertations.

## Curriculum

### *Health Outcomes (12 cr.)*

SHRS W510 Trends and Issues in the Health Sciences (3 cr.)

SHRS W540 Patient-Centered Outcomes Research (3 cr.)

INFO I535 Clinical Information Systems (3 cr.)

SPEA H517 Managerial Epidemiology (3 cr.)

### *Electives (3 cr.)*

(In consultation with graduate advisor) (3 cr.)

### *Research (15 cr.)*

SHRS W520 Evidence-Based Critical Inquiry in the Health Sciences (3 cr.)

SHRS W570 Research Communication in the Health Sciences (2-3 cr.)

SHRS W599 Thesis in Health Sciences (6 cr.)

GRAD G651 Introduction to Biostatistics I (3 cr.)

### *Courses Offered in Other IUPUI Schools:*

GRAD G651 Introduction to Biostatistics I (3 cr.)

INFO I535 Clinical Information Systems (3 cr.)

SPEA H517 Managerial Epidemiology (3 cr.)

*Total minimum credits: 30 cr.*

## Courses in Therapeutic Outcomes Research

### Courses offered in the School of Health and Rehabilitation Sciences

“P” refers to a course prerequisite and “C” to a course that must be taken concurrently.

**SHRS W510 Trends and Issues in the Health Sciences (3 cr.)** A seminar course to review pertinent literature and other sources of information as a basis for discussing trends and issues affecting the therapeutic professions and the healthcare delivery system.

**SHRS W520 Evidence-Based Critical Inquiry in the Health Sciences (3 cr.)** Fundamental concepts of research, ranging from philosophical foundations to practical applications. Course provides the conceptual framework in which graduate students may develop their own research agenda. In keeping with the diversity of research, this course strives to introduce graduate students to the entire continuum of research paradigms, from qualitative, naturalistic inquiry to quantitative, experimental designs.

**SHRS W540 Patient-Centered Outcomes Research (3 cr.)** Explorations of selected patient-centered outcomes evaluation methodology and research evidence related to the health professions at an advanced level.

**SHRS W570 Research Communication in the Health Sciences (2-3 cr.)** P: W520 and consent of both instructor and research advisor. Instruction and consultation in the preparation of master's thesis proposals, including computer applications for

conducting online literature searches, developing an individual bibliographic database, designing an original research project, and devising a sound methodology. Final outcome is a completed thesis proposal for submission to a graduate student's thesis committee. Course is open only to health sciences graduate students pursuing the research/thesis track in their program of study. Students must begin the course with a specific research agenda already approved by their research advisor.

### *Courses offered in other IUPUI Schools*

GRAD G651 Introduction to Biostatistics I (3 cr.)

INFO I535 Clinical Information Systems (3 cr.)

SPEA H517 Managerial Epidemiology (3 cr.)

## Doctor of Philosophy in Health and Rehabilitation Sciences

### Degree Objective

To develop scholars who, through their leadership and original research, will contribute to the knowledge base of health and rehabilitation sciences. Graduates will be able to be employed in universities, health care facilities and industries that focus on teaching others and advancing knowledge in health and rehabilitation.

### Admissions Policy

Requirements, in addition to those of the Graduate School, include:

1. Completion of a post baccalaureate degree in health and rehabilitation sciences or in a related health care discipline, or completion of a baccalaureate degree with professional experience.
2. Resume or curriculum vitae.
3. A 300-500 word personal statement of learning objectives, research interest, and leadership potential.
4. Competitive scores (minimum of 500 recommended) on the verbal and quantitative sections and a score of 3.5 or better on the analytical writing section of the GRE, completed within 5 years before matriculation into the Ph.D. program. Successful completion of a post graduate degree will waive the matriculation time period.
5. Letter from a person willing to serve as the research mentor. The mentor must be actively engaged in research, and be able to effectively guide the student in the research process. The mentor must be formally approved by the School of Health and Rehabilitation Sciences' Academic Studies and Research Development (ASRD) Committee. The mentor does not have to be a faculty member in the SHRS, but must hold IU Graduate Faculty status or equivalent. This person may also serve as chair of the student's dissertation committee.

The ASRD Committee will be the body that will review applications and make acceptances.

Priority will be given to students who indicate that they plan to attend full time, and to those who have secured sources of funding to support full time status.



A maximum of 30 semester credits may be transferred from the student's post baccalaureate course work, as approved by the ASRD Committee and the University Graduate School. No course may be transferred from another institution unless the course was completed with a grade of B or higher.

Any exceptions to the admissions policies must be requested in writing to the ASRD Committee. The request must be accompanied by a letter from the director of the Ph.D. program recommending either support or denial.

Admission Dates for 2009-10: Applications will be accepted beginning April 15 through May 15, 2009 for admission as of Fall 2008. A student who is unable to sit for the GREs or submit a TOEFL score before May 15 may be conditionally admitted. The conditional admittance would be subject to receipt of an acceptable GRE and/or TOEFL.

### Curriculum Requirements

The minimum requirements for the Ph.D. are 90 credit hours of advanced study, of which 30 semester credits may be transferred from the student's post-baccalaureate degree study, as approved by the School Admissions Committee and the University Graduate School.

The credits for the Ph.D. are distributed in the following categories:

#### *Health and Rehabilitation Sciences Core Curriculum (12 credits in required courses)*

- W660 Rehabilitation Theories and Applications (3 cr.)
- W661 Theories of Health Promotion and Disease Prevention (3 cr.)
- W662 Rehabilitation Services in Healthcare Systems and Delivery (3 cr.)
- W672 Teaching Practicum within area of specialization (3 cr.)

#### *Health and Rehabilitation Sciences Concentration (30 credits)*

Students will select one of the three areas of concentration identified by the Institute of Medicine. Students must declare an area of concentration and identify appropriate coursework within the SHRS and across campus in consultation with their Advisory Committee. Areas of concentration include:

- Pathophysiology and Impairment
- Functional Limitations/Functional Participation
- Health Services

#### *Research Core (42 credits)*

- GRAD G505 The Responsible Code of Research (1 cr.)
- SHRS W674 Doctoral Seminar in Health and Rehabilitation Sciences (1 cr.)
- GRAD N802 Techniques of Effective Grant Writing (3 cr.)
- NURS W540 Writing for Publication (3 cr.)
- SHRS W670 Research Practicum in Health and Rehabilitation Sciences (6 cr.)
- Statistics and Research Design courses (9 cr.; courses must be approved by the student's Advisory Committee as part of the student's plan of study)
- Dissertation (19 cr.)

#### *Electives (6 credits)*

#### **Minor**

Because of the interdisciplinary nature of the Ph.D. curriculum, each student will complete 6-12 credits in an external area, and thus satisfy the minor requirement for the Ph.D.; specialized minors may be constructed on a case-by-case basis, if needed for a particular student's program.

#### **Comprehensive Examination**

Near, and usually in, the last semester of course work, students will be required to take a comprehensive written qualification examination in health and rehabilitation sciences, prepared by the student's Advisory Committee. Only student who pass the exam may continue in the program. Students may be able to retake the examination one time if they fail to pass the first time. The retake must occur within six months of the original examination

## **Courses in Health and Rehabilitation Sciences**

### *Courses offered in the School of Health and Rehabilitation Sciences*

#### **SHRS N576 Leadership Development in Pediatric Nutrition (3 cr.)**

This is an entry-level leadership development series of experiential learning activities, including a leadership development project for post-baccalaureate health care professionals and fellows.

#### **SHRS W660 Rehabilitation Theories and Application (3 cr.)**

This course explores theories common to all rehabilitation therapies and forms a foundation for rehabilitation sciences. Theories such as adaption to disease, cognition, disability, and injury are applied to rehabilitation practice and research design across the life span.

#### **SHRS W661 Theories of Health Promotion and Disease Prevention (3 cr.)**

This course focuses on the role of health behaviors such as eating nutritious foods, exercising, and avoiding unhealthy habits, in health promotion and disease prevention. A principal concentration will be on health promotion within disabling conditions.

#### **SHRS W662 Rehabilitation Services in Health Care Systems and Delivery (3 cr.)**

This course analyzes emerging trends in health care systems and delivery associated with rehabilitation. Areas to be covered include organizational infrastructures, finance, public policy, and implications for disparate patient populations.

#### **SHRS W670 Research Practicum in Health and Rehabilitation Sciences (3-6 cr.)**

Instructional orientation to research; includes laboratory experience in the student's concentration area. This course may be taken more than once.

**SHRS W672 Teaching Practicum in Health and Rehabilitation Sciences (3 cr.)** Instructional teaching theories and methodologies to include teaching a unit of instruction in the student's concentration area. This course may be taken more than once. NOTE: Any student that has an interest in teaching is advised to incorporate other instructional teaching methodology courses into his/her plan of study.

**SHRS W674 Doctoral Seminar in Health and Rehabilitation Sciences (1 cr.)** During the first two years of a student's matriculation in the PhD in Health & Rehabilitation Sciences program, the student will attend a total of 12 seminars relating to some aspect of health and rehabilitation, and submit a synopsis for each.

**SHRS W680 Independent Study in Health and Rehabilitation Sciences (1-4 cr.)** A course for students interested in specific interdisciplinary topics in health and rehabilitation sciences.

**SHRS W690 Dissertation Proposal in Health & Rehabilitation Sciences (3-6 cr.)** Students will submit a written proposal for original scholarly work that makes a significant contribution to research in the field of health and rehabilitation sciences. Proposal to include introduction to topic, literature review, and indication of methodology. This course may be taken more than once.

**SHRS W692 Dissertation in Health & Rehabilitation Sciences (3-8 cr.)** P: W690. Original scholarly dissertation that makes a significant contribution to the field of health and rehabilitation sciences. Topic to be selected by the student and his/her Research Committee.

*Courses offered in other IUPUI Schools*

**GRAD G505 The Responsible Conduct of Research (1 cr.)**  
**GRAD N802 Techniques of Effective Grant Writing (3 cr.)**  
**NURS W540 Writing for Publication (3 cr.)**

## Certificate in Health Sciences Patient Centered Outcomes

This four-course, 12 credit hour certificate is designed to provide credentialed health care professionals with information about the current trends and issues in health care to include the growing use of technology, use of evidence to inform practice decisions, and the use of outcome measures focused on the individual patient/client. The certificate will provide clinicians the opportunity to demonstrate career development in an area becoming increasingly important to clinicians both nationally and internationally. All courses are offered online. The certificate is constructed so that all courses can be used as part of the advanced master's degree offered by the Department of Health Sciences: the Master of Science in Therapeutic Outcomes Research.

Students must complete all required course work (the four designated courses) with a grade of B (3.0) or better. Students will have three years to complete the certificate. The certifi-

cate director will be responsible for certifying completion of all requirements and will notify the University Graduate School once all requirements have been met. The director will ensure that certificate information is properly recorded with university offices.

### Admission Requirements

Students accepted into the program must complete university, school, and program admission requirements. Specific school and program admission requirements include:

1. Two letters of recommendation from those familiar with the applicant's academic and professional performance.
2. Eligibility for license or credential in a health care profession.
3. 300-500 word personal statement of academic and professional goals.

Exceptions to those requirements may be granted by the School of Health and Rehabilitation Sciences Academic Studies and Research Development Committee upon written petition from the applicant and with written recommendation from the Therapeutic Outcomes Research program director. The petition must include a full statement of conditions justifying the exception. Conditional admission will be for a stated time period and will entail specific conditions to be met to receive regular admission status.

No student will be permitted to work towards the certificate without first being admitted to the certificate program.

### Prior Course Work Applied Toward Degree Requirements

No credits will be accepted from other institutions to fulfill the requirements of the certificate. No undergraduate courses can be used to fulfill the requirements of the certificate.

### Application Materials

An applicant must submit completed application forms to the Office of Academic and Student Affairs, School of Health and Rehabilitation Sciences. Transcripts from all universities attended must be included. Indiana University graduates should request that the registrar's office send unofficial copies of their transcripts. Non-Indiana University graduates must submit at least one official transcript from each university attended.

### Curriculum

The certificate consists of four courses for a total of 12 credit hours. The courses are as follows.

**SHRS W510 Trends and Issues in Health Sciences (3 cr.)**  
**SHRS W520 Evidence Based Critical Inquiry in Health Sciences (3 cr.)**  
**SHRS W540 Patient Centered Outcomes Research (3 cr.)**  
**INFO I535 Clinical Information Systems (3 cr.)**