Occupational Therapy

The Program in Occupational Therapy offers several professional degrees as well as a joint degree with the George Warren Brown School of Social Work.

Students interested in entering the field of occupational therapy may do so with a master’s or doctoral degree. It is possible to enroll in either program and then apply to transfer to the other program later, as both the master’s and doctoral programs share the same curriculum for the first year of study. Students may also decide to apply to both programs if they like. Typically, the doctoral program attracts students who have further interest in research and leadership in the field.

The Program in Occupational Therapy prepares students for professional practice and, through its research, generates knowledge to address the issues facing individuals with disabilities, chronic diseases and developmental disabilities. Students are prepared as generalists, but they can also concentrate their studies for work in pediatrics, aging, rehabilitation, work and industry, or social participation. The curriculum focuses on the dynamic interaction of the biological with the psychological, environmental and occupational factors that enable persons to fulfill their roles and lead meaningful and productive lives. Students interact with leading physicians and scientists whose practices and science are contributing to better methods for the treatment of persons with disabilities. In addition, students are linked with community agencies and leaders providing services to individuals with disabling conditions.

Undergraduate students in pre-medical, psychology, biology or anthropology will find that the program offers a means of applying their knowledge in a professional field.

The Program in Occupational Therapy is accredited by the Accreditation Council for Occupational Therapy Education (ACOTE) of the American Occupational Therapy Association (AOTA), located at 6116 Executive Boulevard, Suite 200, North Bethesda, MD 20852-4929. ACOTE’s telephone number, care of AOTA, is 301-652-AOTA. For more information, visit the ACOTE Accreditation webpage (https://www.aota.org/Education-Careers/Accreditation.aspx).

Email: wuoфиз@wustl.edu
Website: http://www.ot.wustl.edu

Degrees & Offerings

- Master of Science in Occupational Therapy (http://bulletin.wustl.edu/medicine/degrees-offerings/msot/)
- Clinical Doctorate of Occupational Therapy (http://bulletin.wustl.edu/medicine/degrees-offerings/otd/)
- Post-Professional Doctorate of Occupational Therapy (http://bulletin.wustl.edu/medicine/degrees-offerings/post-professional-otd/)
- PhD in Rehabilitation and Participation Science (http://bulletin.wustl.edu/medicine/degrees-offerings/phd-raps/)

Research

Faculty in the Program in Occupational Therapy at Washington University are involved in research that is changing the way occupational therapy is practiced. In collaboration with colleagues in the School of Medicine, public health, social work and community agencies, these individuals are involved in projects that encompass many of the challenges facing society. By providing evidence through scientific research, they are validating the profession as an important partner in the health care team. By acting as innovators, they are developing new and better ways to provide care.

To find more information about research activities in the Program of Occupational Therapy, please visit the Research (http://www.ot.wustl.edu/research-105/) page of our website.

Faculty

Lisa Tabor Connor, PhD, MSOT, OTR/L (https://www.ot.wustl.edu/about/our-people/lisa-tabor-connor-171/)
Associate Dean and Director of Occupational Therapy
Elias Michael Professor of Occupational Therapy
Professor of Neurology
Director, Division of Research

Lenin Grajo, PhD, EdM, OTR/L (https://www.ot.wustl.edu/about/our-people/lenin-grajo-1240/)
Associate Professor of Occupational Therapy and Psychiatry
Director, Division of Professional Education
Associate Director, Program in Occupational Therapy
Associate Director, Diversity, Equity and Inclusion

Patricia Nellis, OTD, OTR/L (https://www.ot.wustl.edu/about/our-people/patricia-nellis-65/)
Associate Professor of Occupational Therapy and Neurology
Director, Division of Clinical Operations

Visit our website for more information about our faculty (https://www.ot.wustl.edu/about/our-people-117/?typeid=2) and their appointments.

B

Salma Hussain Bachelani, Ph.D.
Instructor in Occupational Therapy (primary appointment)
Instructor in Pediatrics
Bachelor of Arts, Northwest Missouri State University, 2013
Doctor of Philosophy, Washington University in St Louis, 2016

Parul Bakhshi, Ph.D.
Assistant Professor of Occupational Therapy (primary appointment)
Assistant Professor of Surgery (Public Health Sciences)
Doctor of Philosophy, University Rene’ Descartes, 2003

Peggy Barco, O.T.D.
Professor of Occupational Therapy (primary appointment)
Professor of Medicine
Doctor of Occupational Therapy, Washington University in St Louis, 1987

M. Carolyn Baum, M.A., Ph.D.
Professor of Occupational Therapy (primary appointment)
Professor of Neurology (Occupational Therapy)
Professor of Social Work (Courtesy)
Bachelor of Science, University of Kansas, 1966
Master of Arts, Webster University, 1979
Doctor of Philosophy, Washington University in St Louis, 1993

Christine R. Berg, M.S., Ph.D.
Professor of Occupational Therapy (primary appointment)
Professor of Neurology
Master of Science, Boston University, 1980
Doctor of Philosophy, Washington University in St Louis, 1999

Jessie Lynne Bricker, M.S., O.T.D.
Instructor in Occupational Therapy (primary appointment)
Instructor in Medicine
Bachelor of Science, Illinois Wesleyan University, 2000
Master of Science, Washington University in St Louis, 2001
Doctor of Occupational Therapy, Eastern Kentucky University, 2018

Chih-Hung Chang, Ph.D.
Professor of Occupational Therapy (primary appointment)
Professor of Medicine
Professor of Orthopedic Surgery
Bachelor of Science, National Chengchi University, 1987
Doctor of Philosophy, University of Chicago, 1995

Lisa Tabor Connor, M.A., M.S., Ph.D.
Professor of Occupational Therapy (primary appointment)
Elias Michael Executive Director of the Program in Occupational Therapy
Professor of Neurology
Associate Dean for Occupational Therapy
Director of the Research Division
Bachelor of Arts, Johns Hopkins University, 1986
Master of Arts, Washington University in St Louis, 1990
Doctor of Philosophy, Washington University in St Louis, 1992
Master of Science, Washington University in St Louis, 2013

Jessica L Dashner, O.T.D.
Associate Professor of Occupational Therapy (primary appointment)
Associate Professor of Neurology
Bachelor of Science, McKendree University, 2000
Doctor of Occupational Therapy, Washington University in St Louis, 2002

Susan M Fitzpatrick, Ph.D.
Adjunct Associate Professor of Occupational Therapy
Adjunct Associate Professor of Neuroscience
Bachelor of Science, Saint Johns University, 1978
Doctor of Philosophy, Cornell University, 1984

Lenin Grajo, M.Ed., Ph.D.
Associate Professor of Occupational Therapy (primary appointment)
Director of Professional Education
Associate Professor of Psychiatry
Associate Director of Diversity, Equity and Inclusion
Associate Director of Program in Occupational Therapy
Bachelor of Arts, University of Pittsburgh, 2000
Master of Science, Northwestern University, 2001
Doctor of Philosophy, Texas Woman’s University, 2015
Bachelor of Science, University of the Philippines Manila, null

Kelly McClelland Harris, M.A., Ph.D.
Assistant Professor of Occupational Therapy (primary appointment)
Lecturer in Education
Assistant Professor of Surgery (Public Health Sciences)
Bachelor of Arts, University of Kansas, 2000
Master of Arts, Northwestern University, 2001
Doctor of Philosophy, Washington University in St Louis, 2017

Catherine R Hoyt, O.T.D., Ph.D.
Instructor in Occupational Therapy (primary appointment)
Instructor in Pediatrics
Bachelor of Science, Juniata College, 2007
Doctor of Occupational Therapy, Washington University in St Louis, 2010
Doctor of Philosophy, Washington University in St Louis, 2019

Brian Johnson, M.S., Ph.D.
Assistant Professor of Occupational Therapy (primary appointment)
Assistant Professor of Neurology
Bachelor of Science, University of Wisconsin Milwaukee, 2011
Master of Science, University of Wisconsin Milwaukee, 2012
Doctor of Philosophy, University of Maryland Baltimore, 2019

Jessica Kersey, Ph.D.
Instructor in Occupational Therapy (primary appointment)
Instructor in Neurology
Doctor of Philosophy, University of Pittsburgh, 2021

Allison A King, M.D.
Professor of Occupational Therapy (primary appointment)
Professor of Education (Courtesy)
Professor of Pediatrics
Professor of Surgery (General Surgery)
Professor of Medicine
Bachelor of Science, Washington University in St Louis, 1992
Doctor of Medicine, University of Missouri Columbia, 1996

Kathleen Marie Kniepmann, M.P.H., O.T.D.
Chun Lun Lau, Ph.D.
Assistant Professor of Occupational Therapy (primary appointment)
Assistant Professor of Neurology
Bachelor of Science, Hong Kong Polytechnic University, 2016
Doctor of Philosophy, Washington University in St Louis, 2022

Amanda Mack, M.S., O.T.D.
Assistant Professor of Occupational Therapy (primary appointment)
Assistant Professor of Medicine
Director of Post-Professional Education
Bachelor of Science, Boston University, 2011
Master of Science, Boston University, 2013
Doctor of Occupational Therapy, Boston University, 2019

Wanda Jean Mahoney, M.A., M.S., Ph.D.
Associate Professor of Occupational Therapy (primary appointment)
Associate Professor of Medicine
Bachelor of Science, Saint Louis University, 1997
Master of Science, Washington University in St Louis, 1999
Doctor of Philosophy, Nova Southeastern University, 2008
Master of Arts, De Paul University, 2018

Lauren Elizabeth Milton, O.T.D.
Assistant Professor of Occupational Therapy (primary appointment)
Assistant Professor of Medicine
Bachelor of Science, Saint Louis University, 2001
Doctor of Occupational Therapy, Washington University in St Louis, 2008

Marian A Minor, M.P.H., Ph.D.
Associate Professor of Occupational Therapy
Bachelor of Science, University of Kansas, 1965
Master of Public Health, University of Missouri Columbia, 1979
Doctor of Philosophy, University of Missouri Columbia, 1989

Kerri A Morgan, M.S., Ph.D.
Assistant Professor of Occupational Therapy (primary appointment)
Assistant Professor of Neurology
Bachelor of Arts, Texas Christian University, 1996
Master of Science, Washington University in St Louis, 1998
Doctor of Philosophy, Washington University in St Louis, 2015

Patricia K Nellis, M.B.A., O.T.D.
Associate Professor of Occupational Therapy (primary appointment)
Associate Professor of Neurology

Grayson Owens, O.T.D.
 Instructor in Occupational Therapy (primary appointment)
 Instructor in Neurology
 Bachelor of Science, University of Central Arkansas, 2016
 Main Campus, 2019

Monica S Perlmutter, M.A., O.T.D.
Associate Professor of Occupational Therapy (primary appointment)
Associate Professor of Ophthalmology and Visual Sciences
Master of Arts, Washington University in St Louis, 1989
Doctor of Occupational Therapy, Washington University in St Louis, 2012

Benjamin Allen Philip, Ph.D.
Assistant Professor of Occupational Therapy (primary appointment)
Assistant Professor of Neurology
Assistant Professor of Surgery (Plastic and Reconstructive Surgery)
Doctor of Philosophy, Brown University, 2009

Roberta G Pineda, M.H.S.
Adjunct Assistant Professor of Occupational Therapy
Master of Health Science, University of Florida, 1994

Duana C Russell, M.S., O.T.D.
Assistant Professor of Occupational Therapy (primary appointment)
Director of the Center for Community Living
Assistant Professor of Medicine
Master of Science, Washington University in St Louis, 1997
Doctor of Occupational Therapy, Washington University in St Louis, 2016

Jaclyn Schwartz, M.S., Ph.D.
Assistant Professor of Occupational Therapy (primary appointment)
Assistant Professor of Neurology
Bachelor of Science, University of Texas Austin, 2008
Master of Science, Washington University in St Louis, 2010
Doctor of Philosophy, University of Wisconsin Milwaukee, 2015

Emily K Somerville, M.A., O.T.D.
Assistant Professor of Occupational Therapy (primary appointment)
Assistant Professor of Neurology
Bachelor of Arts, Covenant College, 2005
Master of Arts, Washington University in St Louis, 2007
Doctor of Occupational Therapy, Washington University in St Louis, 2017

Susan L Stark, M.S., Ph.D.
Courses

Visit online course listings to view offerings for M01 OT (https://courses.wustl.edu/CourseInfo.aspx?sch=M&dept=M01).

**M01 OT 595 Independent Study**
Active participation in research activities with program faculty. A written plan of study agreed upon by faculty and student. Permission of faculty adviser required.
Credit variable, maximum 6 units.

**M01 OT 611 Professional Immersion in Occupational Therapy**
This foundational course prepares students to manage the changing paradigms of health care that are encountered in future practice. Students are introduced to settings across the continuum of care, professional team roles, and health policy which are integrated into future coursework. Health informatics systems support professional practice and are explored as a means to understand continuum of service delivery, documentation, and reimbursement systems. Students learn foundational tools of the profession, including the current practice framework and activity analysis.
Credit 3 units.

**M01 OT 612 Neuroscience Principles Supporting Occupational Performance**
This foundational course explores the structures and functions of the nervous system as they relate to occupational performance. Students develop a basic understanding of the neural mechanisms that underlie motor function, sensation, perception, cognition, and affect.
Credit 3 units.

**M01 OT 613 Theoretical Foundations Supporting Occupational Performance**
This course explores the philosophical and theoretical foundations of the profession. The evolving theories, models, and frames of reference which support occupational therapy research and practice are compared and applied to case scenarios. Emphasis will be on the PEOP model of occupational performance and the core principles of client-centered care and disability. The meaning and complexity of occupation and occupational performance will be explored as students gain an understanding of humans as occupational beings.
Credit 2 units.
M01 OT 614 Elements of Research Design and Use of Data
Building on prerequisite knowledge, the student engages in research design and data analysis. Students locate sources of grant funding, compose an IRB proposal, identify appropriate statistical analyses of data based on the research question, evaluate the psychometrics of assessments, and analyze both qualitative and quantitative data. Credit 3 units.

M01 OT 615 Fundamentals of Professional Communication
This course provides foundational skills in effective verbal and nonverbal communication for all aspects of occupational therapy practice. Evidenced-based models of professional communication are presented with an emphasis on therapeutic modalities of communication. Students develop competency in therapeutic use of self, stages of change, group dynamics, leadership and roles, and the process of conducting an occupational profile using semi-structured assessment. Credit 3 units.

M01 OT 616 Professional Identity and Practice I
This four-course series emphasizes the personal and professional growth of the student as a representative of the profession and institution. The initial course of the series introduces students to empathy, professional behaviors, ethical practice, professional development, interprofessional collaboration, and field experiences. Students are supported in establishing their role in an inclusive and respectful learning community, and their contribution to group culture. Development of professional behavior, presence, and correspondence is emphasized.

M01 OT 641 Elective MSOT to PhD Mentored Scholarship II
This is the second in a three-course sequence in which students participate in a mentored scholarship experience to prepare for entry into a PhD program. Students conduct clinical research or engage in the scholarship of teaching and learning under the direction of a researcher. Learning experiences include designing, implementing, evaluating, and disseminating research to advance knowledge translation, professional practice, service delivery, or professional issues. Students will actively participate in a research laboratory as a means to gain exposure to the skills needed to run an independent laboratory as a career scientist.

M01 OT 642 Evaluation and Intervention: Adults and Older Adults I
This course explores the person, environment, and occupation factors that influence occupational performance of adults and older adults. Students evaluate these factors, interpret findings, and design components of intervention plans using applicable theories, models, frames of reference and best evidence. Mechanisms for reimbursement, re-evaluation, and discharge planning as applicable to various practice settings are addressed.

M01 OT 643 Case-Based Learning II: Occupational Performance Enabling Participation
In this second of a three-semester sequence, students continue to study select health conditions and apply the occupational therapy process to cases under the guidance of a facilitator. Students integrate concepts learned in the evaluation and intervention coursework to design comprehensive evidence-based intervention plans using applicable theories, models, frames of reference and best evidence. They select assessments, plan interventions, delineate OT/OTA roles, and make discharge recommendations that are client-centered and incorporate appropriate community resources.

M01 OT 644 Management Strategies for a Changing Practice Environment I
This is the first of a two-course series examining management and organizational principles for occupational therapy services as delivered in multiple practice environments. Students perform a needs assessment, begin building capacity with a community partner, and develop a business or program plan. Interactions with managers, clinic leaders, community agencies, interprofessional teams, and other entrepreneurs allow students the opportunity for experiential learning.

M01 OT 646 Professional Identity and Practice III
This four-course series emphasizes the personal and professional growth of the student as a representative of the profession and institution. Students continue to develop professional identity and ethical practice in this third course. Students reflect on individual contributions to institutional culture, mission, vision, and core values. Supervised experiences in a clinical or community setting allow the student to practice skills and behaviors learned in the classroom.

M01 OT 648 OTD Mentored Scholarship II
This is the second in a three-course sequence which students participate in a mentored scholarship experience. Students conduct clinical research, clinical and community program development, or the scholarship of teaching and learning within the mentor’s line of scholarship. Learning experiences will include designing, implementing, evaluating, and disseminating research to advance knowledge translation, professional practice, service delivery, or professional issues.

M01 OT 650 Theories, Models and Classifications
This course will explore the historical and theoretical foundations of Rehabilitation and Participation Science and track the development of rehabilitation models and classification systems. Students will find and use specific theories to ground their understanding of the area of their specialization, and they will be taught how to classify and apply levels of evidence to build the background for their doctoral work. The course will be team-taught with students and include faculty presentations and discussions.

M01 OT 651 Elective MSOT to PhD Mentored Scholarship III
This is the third in a three-course sequence in which students participate in a mentored scholarship experience to prepare for entry into a PhD program. Students conduct clinical research or engage in the scholarship of teaching and learning under the direction of a researcher. Learning experiences include designing, implementing, evaluating, and disseminating research to advance knowledge translation, professional practice, service delivery, or professional issues. Students will actively participate in a research laboratory as a means to gain exposure to the skills needed to run an independent laboratory as a career scientist.
M01 OT 652 Evaluation and Intervention: Adults and Older Adults II
This course explores the person, environment, and occupation factors that influence occupational performance of adults and older adults. Students evaluate these factors, interpret findings, and design components of intervention plans using applicable theories, models, frames of reference and best evidence. Mechanisms for reimbursement, re-evaluation, and discharge planning as applicable to various practice settings are addressed.
Credit 3 units.

M01 OT 653 Case-Based Learning III: Occupational Performance
Enabling Participation
In this last course of the series, students continue to study select health conditions and apply the occupational therapy process to cases under the guidance of a facilitator. Students integrate concepts learned in the evaluation and intervention course work to design comprehensive evidence-based intervention plans using applicable theories, models, frames of reference and best evidence. They select assessments, plan interventions, delineate OT/OTA roles, and make discharge recommendations that are client-centered and that incorporate appropriate community resources.
Credit 3 units.

M01 OT 655 Management Strategies for a Changing Practice
Environment II
This is the second of a two-course series that examines management and organizational principles for occupational therapy services as delivered in multiple practice environments. Students implement and evaluate a community program, report an outcomes and sustainability plan back to the community, and prepare an application for funding based on the need for services. Interactions with managers, clinic leaders, community agencies, interprofessional teams, and other entrepreneurs allow students the opportunity for experiential learning.
Credit 3 units.

M01 OT 656 Professional Identity and Practice IV
This four-course series emphasizes the personal and professional growth of the student as a representative of the profession and institution. This last course addresses preparation for national certification, state requirements for scope of practice and licensure, interprofessional collaboration, supervision of other OT personnel, ethical behavior, continuing competence and professional service. Orientation to Level II fieldwork is covered.
Credit 2 units.

M01 OT 658 OTD Mentored Scholarship III
This is the third in a three-course sequence in which students participate in a mentored scholarship experience. Students conduct clinical research, clinical and community program development, or the scholarship of teaching and learning within the mentor’s line of scholarship. Learning experiences will include designing, implementing, evaluating, and disseminating research to advance knowledge translation, professional practice, service delivery, or professional issues.
Credit 2 units.

M01 OT 660 Biopsychosocial Factors Influencing Performance
The course will provide an in-depth understanding of the biomedical research literature pertaining to factors that influence performance. The course focuses on psychological, physiological, sensory, perceptual, motor, cognitive processes as well as subjective and objective assessments of the environment for home, work and community contexts that contribute to performance and performance changes with rehabilitation. The course will be team taught with a combination of lecture and seminar formats to lay the foundational principles of performance and to discuss how the capacity to perform supports participation.
Credit 6 units.

M01 OT 670 Environment Factors and Participation
The course will provide an in-depth understanding of person-environment interactions and the link between biomedical factors and community participation. The course focuses on the physical, technology and policy aspects of the environment that impact participation of persons with or at risk for chronic illness or disability. The course will be team taught with a combination of lecture and seminar formats.
Credit 3 units.

M01 OT 680 Measurement Theory and Development
The course will provide a broad framework and specific knowledge for assessment in areas of rehabilitation and participation. The course focuses on psychological, physiological, sensory, perceptual, motor, cognitive processes as well as subjective and objective assessments of the environment for home, work and community contexts. The course will be team taught with a combination of lecture and discussion formats.
Credit 3 units.

M01 OT 681 Implementing PEOP in Practice
Using the Person-Environment-Occupation-Performance (PEOP) model, students synthesize interdisciplinary knowledge from literature and theory to develop an assessment and intervention model for a population. This model relates to the student’s mentored scholarship or capstone experience to support best practice with a select population.
Credit 4 units.

M01 OT 682 Translational Science in Action
Students explore the construct of translational science and the challenges of integrating evidence into practice. Advocating for and using evidence in clinical settings has many barriers; strategies to influence professional practice through application of evidence are integral to this course.
Credit 3 units.

M01 OT 683 Leading Change in Practice
This course immerses students in the basic principles of personal and professional leadership theories and practices necessary for success in a dynamic healthcare environment. A variety of methods for planning, implementing, and evaluating change in various settings are addressed.
Credit 3 units.

M01 OT 690 Rehabilitation Neuroscience
The role of experience in shaping brain functions is a central question in psychology and neuroscience. The prevailing view is that the functional organization of even the mature brain is dynamic — changing in response either to increases or decreases in stimulation. However, this has not always been the accepted perspective. Even now, many fundamental questions remain, and the answers should directly impact the way that we approach learning and the rehabilitation (re-learning) in the future. Just what are the limits on plasticity in the adult brain? How should environments be structured to exploit this capacity effectively? Is all reorganization behaviorally relevant? What factors contribute to adaptive, as opposed to maladaptive, changes? Together, we will consider historical perspectives on, and what is presently known about, these and related questions.
Credit 3 units.

**M01 OT 691 Doctoral Capstone Proposal**  
Students prepare for the capstone experience and develop a plan for an in-depth experience in advanced clinical practice, scholarship, administration, leadership, advocacy, program and policy development, education, or theory development. Students develop specific learning objectives for the capstone in collaboration with a mentor.  
Credit 2 units.

**M01 OT 692 Doctoral Capstone Project**  
Students document the scholarship achieved in the capstone experience. Evidence of scholarship may include the protocol for a community program, a business development plan, a systematic review of the literature, a research manuscript, course syllabi or course development materials, policies and procedures, or other scholarly writing that demonstrates a synthesis of the knowledge gained in the capstone experience. The course culminates with dissemination of the scholarly work.  
Credit 1 unit.

**M01 OT 693 Doctoral Capstone Experience**  
This course provides a 14-week customized student experience specific to doctoral pursuits and allows for the development of in-depth knowledge in an area of interest. Students engage in advanced clinical practice, scholarship, administration, leadership, advocacy, program and policy development, education, or theory development, and work toward achieving individual learning objectives established in collaboration with a mentor and onsite supervisor.  
Credit 7 units.

Credit 2 units.

**M01 OT 710 Lab Practicum**  
Laboratory practicum is designed to permit the student to learn the basic processes of their selected laboratory. The practicum will involve ongoing research projects and can be both laboratory and clinical in nature.  
Credit 2 units.

**M01 OT 720 Teaching Practicum I**  
The teaching practicum provides an opportunity to engage in a focused and supervised classroom teaching experience. The student’s teaching should be in a content area relevant to the student’s area of interest.  
Credit 1 unit.

**M01 OT 721 Teaching Practicum II**  
The teaching practicum provides a continued opportunity to engage in a focused and supervised classroom teaching experience. The student’s teaching should be in a content area relevant to the student’s area of interest.  
Credit 1 unit.

**M01 OT 770 Research Seminar**  
Regular meeting where research is presented and discussed. Presentations will be made by Washington University faculty, faculty outside the university, and students.  
Credit 1 unit.

**M01 OT 780 Research Practicum**  
The mentored research credit units will be used to develop the research skills of the student. The student will work with the mentor’s guidance to conduct research that adds value to the laboratory and gains experience for the student. The mentored independent studies should lead to refereed publications and may contribute to the dissertation research.  
Credit variable, maximum 12 units.