



University of Connecticut

Department of Psychology

Division of Experimental Psychology

UCONN

Graduate Training Programs in:

•Language & Cognition

•Ecological Psychology

•Cognition & Instruction

The strength of the Experimental Division lies in the coherence of its two major areas of concentration and the applied setting provided by the third area. Language & Cognition, with its focus on the biological basis to language, is remarkable for its multi-tiered yet unified attack on the relation between spoken and written language (addressing phonology, morphology, syntax, and semantics in both fluent and nonfluent language users). Ecological Psychology, with its focus on the relation between perception and action, has led the way in forging a law-based approach to information (be it optic, acoustic, or haptic) and its role in guiding movement's control. These two areas represent unique approaches to issues that confront cognitive science in the 21st century. Cognition & Instruction provides a focus in which basic principles are applied and evaluated in an instructional setting.

Our training philosophy encourages a high degree of interaction. Students work closely with each other as well as with multiple faculty to ensure that their technical training is broad and their intellectual challenges are varied in style and substance (each is required to do at least one independent research course with someone other than his or her adviser). In many of these situations, they are apprentices as they learn experimental methodologies, analytic techniques, and theoretical issues from faculty and senior students. In other situations, they are masters as they teach those skills and concepts to new students and undergraduates. In addition to the varied skills that are acquired and the adaptability that is encouraged, such activity also increases the likelihood that students will be involved in several projects that will come to fruition as publications (increasing their job prospects). In that sense, it lessens the risk inherent in exploratory work because students are likely to have more conservative work ongoing at the same time.

Research provides the focus of our graduate training. While lecture courses and seminars provide the necessary issues and debates and some of the skills, research courses, which are typically elected every semester, provide the concentrated format for sharpening the level of technical sophistication required by contemporary cognitive science. Course tracks in perception, motor control, cognition, language, and literacy are augmented by independent research courses that delve deeply into areas such as recurrence quantification of rhythmic movement, inertial constraints on the size-weight illusion, connectionist simulations of word recognition in a shallow orthography, or visual influences on auditory speech perception. The independent study course is used to hone verbal skills as well: Students typically present their work at weekly research colloquia and prepare a manuscript for publication as part of the evaluation process.

LANGUAGE & COGNITION

The Program in Language and Cognition focuses on those aspects of language that make it a uniquely versatile vehicle for communication and thought. There is thus a strong focus on the dynamical aspects of language, including experimental studies of language processing, learning, and change at the phoneme, word, and sentence level, on language modeling with artificial neural (connectionist) networks and symbolic computational models, and on analysis via dynamical systems theory and statistics. There is particular interest in an ecological approach which emphasizes continual interaction between speaker/hearers and their environments. There is much interest in the biological basis of language, both in pursuit of innate endowment questions and in studies of neural mechanisms using state-of-the-art neuroimaging tools. The group has long conducted basic research on the reading process; some members are also engaged in the translation of research findings to the classroom. Students are prepared for careers in research and teaching; previous graduates have secured research and/or teaching positions in major centers.

Students and faculty are typically affiliated with Haskins Laboratories, located nearby in New Haven. The laboratories are an independent research facility funded primarily by competitive grants (e.g., from the National Institutes of Health, the National Science Foundation, and the Connecticut State Department of Education). The interdisciplinary community of psychologists, linguists, speech pathologists, physicists, and educational psychologists from throughout the northeast provides a stimulating environment for research and training.

Faculty: Carello, Fowler, Katz, Rueckl, Tabor, Turvey; Linguistics: Lillo-Martin, Snyder. Emeritus: Lukatela, Shankweiler

ECOLOGICAL PSYCHOLOGY

This area takes a natural science, law-based approach to cognition, primarily interpreted as informational constraints on action. Research topics include the study of optical flow properties, perception by dynamic touch, ecological acoustics, coordination of rhythmic movement, event perception, picture perception, the informational support for potential behaviors (affordances), and the role of cognitive rules in the planning and control of acts. Students gain broad competence in the use of physical, mathematical, biological, and computational methods required to investigate the lawful basis of intentional activity and the information that supports its coordination and control. In addition, students are expected to become sufficiently familiar with more traditional viewpoints so that they might not only criticize them expertly and fairly but defend them vigorously. Training follows an apprenticeship model with much individual treatment being given to each student. Research and formal course work are complemented by training in class teaching, lecturing for job interviews, grant writing, and manuscript reviewing. The integration of professional training with formal training has led to an uncommonly high success rate in securing jobs and professional advancement for graduates.

Faculty and students in this area typically are affiliated with the Center for the Ecological Study of Perception and Action, a research center housed within the psychology building. CESPA provides an organizational structure that allows unparalleled integration of research across specialties in vision, audition, touch, and movement, thus encouraging innovations of the sort that have made this program an international leader in the application of a dynamical systems approach to problems of perception and action.

Faculty: Carello, Fowler, Kay, Michaels, Shaw, Turvey; Emeritus: Baron. Fellows: Fitzpatrick, Kim, Kugler, Mace, Marsh, Pellicchia, Schmidt

COGNITION & INSTRUCTION

Work in this area focuses on the study and mathematical modeling of learning strategies, analogical bases to abstract knowledge, and social cognition. An emphasis is placed on the computer implementation and application of a cognitive systems approach, with special reference to the comparative development of knowledge acquisition skills in perceptual, linguistic and action modes. With permission of the admitting division, this program is open to students entering the graduate program through other divisions than Experimental (e.g., Social, Developmental). All students are expected to satisfy the requirements of the admitting Division with a Cognition/Instruction emphasis being added to their exams and research.

Faculty: Rickards, Rueckl, Shaw; Emeritus: Baron, Shankweiler

FACULTY RESEARCH INTERESTS

Claudia Carello is interested in the general problem of characterizing the information that specifies environmental layout and events, particularly in haptic, acoustic, and pictorial arrays. As a Research Scientist at Haskins Laboratories, she works on the relation between reading fluency and the dynamics of movement. Dr. Carello is the Director of CESPA.

Carol Fowler works on speech perception and production within the developing direct-realist framework. She is also involved in research on phonological and morphological structure in reading and lexical organization. Dr. Fowler is Director of Research at Haskins Laboratories.

Leonard Katz is interested in the psychology of language and cognition. Recent work has been concerned with comparative studies of word recognition in speech and reading among different languages. Dr. Katz is a Research Scientist at Haskins Laboratories.

Bruce Kay is interested in the general problem of the production and control of movement. His focus is on the coordination of body segments during both rhythmical (e.g., walking) and non-rhythmical (e.g., quiet stance) activities, using nonlinear dynamical systems modeling and analysis to understand these behaviors. Dr. Kay is director of CESPA's Action Laboratory.

Claire Michaels is interested in the theoretical implications of the ecological approach to perception and action. Her research focuses on the coordination of action with respect to vision, Stimulus-Response compatibility in choice reaction time, and learning and calibration in perception and action. Dr. Michaels is director of CESPA's Optic Flow Laboratory.

John Rickards is interested in memory and cognition, including applications to instructional settings. His research focuses on an examination of ways of enhancing text comprehension and recall. Dr. Rickards is director of the Cognition/Instruction Area of Graduate Study.

Jay Rueckl is interested in memory, language, and connectionist models of cognitive processes. His research emphasizes the application of connectionist principles in the study of lexical and morphological processing, the influence of implicit memory on word recognition, and the distinction between implicit and explicit memory. Dr. Rueckl is a Research Scientist at Haskins Laboratories.

Robert Shaw works on theory and research within the ecological approach to perceiving, acting, and cognition. His research focuses on cognitive systems theory and the search for informational invariants for the perception of growth and other natural events. Current research topics include the perception of faces and the rules for the perceptual control of action. Dr. Shaw is director of CESPA's Intentional Dynamics Laboratory.

Whitney Tabor is interested in language, cognitive change, and dynamical systems theory. His research focuses on sentence processing, examining the way connectionist models help us understand how the language processor can be simultaneously rule-governed and flexible. He also has interests in historical linguistics, formal language theory, fractal geometry, and evolution.

Michael Turvey is principally involved in the ecological approach to perception and coordinated movement (or action), and the relation that holds between them. He is also involved in research on visual word recognition and reading. Dr. Turvey is a Research Scientist at Haskins Laboratories and director of CESPA's Haptic Perception Laboratory.

AFFILIATED FACULTY

Roger Chaffin, Professor of Psychology, University of Connecticut-Hartford. The role of memory in expertise in music performance

Paula Fitzpatrick, Associate Professor of Psychology, Assumption College. Research Scientist, CESPA. Dynamics of development in perception and action

Nam-Gyoon Kim, Associate Professor of Psychology, William Patterson College. Senior Research Scientist, CESPA. Optic flow research

Peter Kugler, Senior Research Scientist, CESPA. Theory and research in intentional dynamics

Elena Levy, Associate Professor of Psychology, University of Connecticut-Stamford. Language and gesture, language development

Diane Lillo-Martin, Professor of Linguistics, University of Connecticut. Research Scientist, Haskins Laboratories. Structure and acquisition of American sign language

George Lukatela, Emeritus Professor of Engineering, University of Belgrade; Research Scientist, Haskins Laboratories. Phonological basis of reading

Katerina Lukatela, Associate Professor of Psychology, University of Connecticut-Hartford. Neuropsychology of reading deficits in aphasia, Alzheimer's, and dementia

William Mace, Professor of Psychology, Trinity College. Senior Research Scientist, CESPA. Theoretical development of ecological psychology

Kerry Marsh, Associate Professor of Psychology, University of Connecticut-Hartford. Research Scientist, CESPA. Social affordances. social coordination

Letitia Naigles, Professor of Developmental Psychology, University of Connecticut. Language acquisition, word learning

Geraldine Pellecchia, Associate Professor of Physical Therapy, University of Hartford, Research Scientist, CESPA. Cognitive influences on bimanual coordination

Kenneth Pugh, Associate Professor, Yale University. Research Scientist, University of Connecticut and Haskins Laboratories. Brain imaging studies of reading

Richard Schmidt, Associate Professor of Psychology, Holy Cross College. Research Scientist, CESPA. Movement coordination, social coordination

Donald Shankweiler, Emeritus Professor of Psychology, University of Connecticut. Research Scientist, Haskins Laboratories. Neuropsychology of language

William Snyder, Assistant Professor of Linguistics, University of Connecticut. Cross-linguistic studies of language acquisition; sentence processing

FINANCIAL SUPPORT

The purpose of financial support is to enable students to engage in a full-time year-round educational program. Students admitted to the program typically are provided with financial support, beginning at \$13,000 for 12 months. This support is drawn from a combination of teaching, research, and fellowship monies. It is accompanied by a tuition waiver and health benefits (medical and dental). Students can expect to be supported for 5 years, with annual increases reflecting their progress through the program. Qualified students are also encouraged to apply for fellowships from agencies such as NSF.

APPLICATION FOR ADMISSION

Application forms and course listings may be obtained from the Graduate School's website (www.grad.uconn.edu) or by writing to:

Graduate Admissions Office
438 Whitney Road Extension, Unit 1006A
University of Connecticut
Storrs, CT 06269-1006

Inquiries regarding admissions requirements for the Psychology Department should be directed to:

Graduate Admissions, Department of Psychology
406 Babbidge Road, Unit 1030
University of Connecticut
Storrs, CT 06269-1030
(Phone 860-486-3528 or E-mail futuregr@psych.psy.uconn.edu)

To learn more about us, please visit the following web sites:

Psychology Department: www.psych.uconn.edu
Haskins Laboratories: www.haskins.yale.edu
CESPA: ione.uconn.edu