Colby

PSYCHOLOGY

Chair, *Professor Martha Arterberry*
Professors Martha Arterberry, Thane Pittman, and Edward Yeterian; Associate Professor Tarja Raag; Assistant Professors Jennifer Coane, Melissa Glenn, Erin Sheets, and Christopher Soto; Visiting Assistant Professors Joseph Atkins and Joseph Hayes

Students and faculty in the Psychology Department are engaged in the pursuit of new knowledge about the nature of cognition, emotion, motivation, and behavior. Our curriculum is designed to provide the information and skills needed to enable students to understand and join in on this quest for new knowledge. An extensive program of laboratory research provides the means for students and faculty to work together to explore interesting phenomena in cognition, culture, development, emotion, motivation, neuroscience, perception, personality, psychopathology, and social psychology. The concentration in neuroscience allows students to explore an interdisciplinary field combining the study of psychology and biology. More information on research in the various laboratories may be found on the department's website, www.colby.edu/psychology.

Students who major in psychology will graduate knowing how to ask good questions and how to find and communicate the answers to those questions. These skills are useful in any field of endeavor, especially for graduate study in psychology or other professional programs such as law or medicine and as general preparation for entry into business, educational, nonprofit, or governmental work settings.

Because Psychology 214 and 215 impart skills that are crucial for the required advanced work in collaborative research, students must maintain minimum grades of C in these courses in order to continue in the major. Psychology 214 and 215 should be taken in the sophomore year and may not be repeated. All requirements for the major must be met in conventionally graded courses.

Requirements for the Major in Psychology

Psychology 111, 214, 215, 420; at least two courses from 251, 253, 254, 255 or 256; at least two courses from 232, 233, 234, 236, 275; at least one seminar with an associated course in collaborative research; at least one other 300-level course.

One year of laboratory experience in the natural sciences is recommended for all majors.

Requirements for the Major in Psychology: Neuroscience

Psychology 111, 214, 215, 233, 374 or 375, 420; at least two courses from 232, 234, 236, 254, 275; at least two courses from 251, 253, 255 or 256; at least one seminar with an associated course in collaborative research. In addition, Biology 163, 164, and 274; at least one biology course from 225, 232, 276, 279, 315, 332, 373, 374. A student may not double major in biology with a concentration in neuroscience and psychology: neuroscience.

Honors in Psychology or Psychology: Neuroscience

Students who are invited by the department to participate in the honors program may submit a formal application near the end of the junior year. In addition to fulfilling the basic requirements for the psychology major, students must complete the honors research sequence (Psychology 483, 484). Upon vote of the department, the student will be awarded his or her degree "With Honors in Psychology" or "With Honors in Psychology: Neuroscience."

Course Offerings

PS111fs Introduction to Psychology An examination of classical and contemporary topics in psychology, including neuroscience, learning, memory, cognition, language, intelligence, development, personality, psychopathology, and social psychology. Students will begin developing skills that will enhance understanding of the discipline of psychology, including explaining behavior from multiple theoretical perspectives, conducting research and evaluating the results, applying research to real-world contexts, thinking about implications of research, and working collaboratively in a scientific context. *Four credit hours.* **S** FACULTY

PS214f Research Methods and Statistics in Psychology I Along with Psychology 215, provides students with knowledge of research design and statistical tools for working with data, which will allow them to engage in original empirical research. Topics include descriptive and inferential statistics, literature review, hypothesis formulation, and issues of control and ethics in research. Students practice a variety of statistical tests, work with SPSS, powerful statistical software, and prepare a written proposal for an experiment following the stylistic conventions of the American Psychological Association. Lecture and laboratory. *Prerequisite:* Psychology 111 and another 200-level psychology course (may be taken concurrently). *Four credit*

hours. **Q** SHEETS

PS215s Research Methods and Statistics in Psychology II Continuation of Psychology 214. Topics include experimental design, analysis of variance (ANOVA), interpretation of complex factorial studies, and oral and written communication of findings following the conventions of the American Psychological Association. Collaborative laboratory activities center on design, data collection, analyses, and oral and written communication of an original empirical research project. Lecture and laboratory. *Prerequisite:* Psychology 214 and sophomore or junior standing. *Four credit hours.* ARTERBERRY

[PS231] History of Brain and Behavior Exploration of philosophical, historical, and scientific viewpoints on neural substrates of behavior, from prehistory through the 20th century. Emphasis on ways in which advances in understanding the nervous system are related to shifts in thinking about human nature and the bases of cognition, emotion, and action. Consideration of attempts to account for normal and abnormal behavior from neuroanatomical, neurophysiological, and neuropsychological perspectives. Includes critical reading and discussion of scientific articles, and related written assignments and oral presentation. *Prerequisite:* Psychology 111. *Three credit hours.*

PS232s Cognitive Psychology Study of human cognition: how the cognitive system encodes, processes, and uses information. Emphasis is on the areas of pattern recognition, attention, memory, and language. We will explore these areas by discussing classic and contemporary research and the theories proposed to explain the observed phenomena. We will integrate findings from behavioral studies, neuroscience, and special populations to gain understanding of the basic processes underlying normal cognitive operations which are pervasive in everyday life. *Prerequisite:* Psychology 111. *Four credit hours.* COANE

PS233s Biological Basis of Behavior Broad survey of behavioral neuroscience will include instruction on neural anatomy and function; modulation of these systems by hormones, drugs, and disease; and the neural basis of many behaviors of interest to psychologists, including sex, sleep, learning, and memory. Students will gain a comprehensive working knowledge of the mammalian central nervous system in the context of psychology to use as they learn the historical and modern framework of specific questions by reading and discussing research articles and completing assignments. Assignments will prepare students to write a research proposal on one topic they will learn about and critically analyze in more depth. *Prerequisite:* Psychology 111. *Four credit hours.* GLENN

PS234j Theories of Learning A comparative examination of the scientific study of learning from the perspectives of classical conditioning, instrumental learning, and operant conditioning theorists: Watson, Thorndike, Skinner, Hull, Pavlov, Guthrie, Estes, Tolman, and others. Consideration of philosophical and historical antecedents, current issues, and applications to animal and human behavior. Includes critical reading and discussion of classic and modern scientific and popular articles, and related written assignments and oral presentation. *Prerequisite:* Psychology 111. *Three credit hours.* YETERIAN

PS236f Drugs, Brain, and Behavior An examination of relationships among drugs, nervous system, conscious experience, and behavior. Historical and legal as well as psychopharmacological aspects of a wide variety of licit and illicit substances will be surveyed, including cocaine, amphetamines, nicotine, caffeine, alcohol, opiates, marijuana, hallucinogens, psychotherapeutic and other prescription medications, and over-the-counter drugs. Includes critical reading and discussion of information from scientific and popular media, related written assignments, and oral presentation. *Prerequisite:* Psychology 111. *Four credit hours.* YETERIAN

PS251s Personality Psychology An individual's personality is their characteristic pattern of thinking, feeling, and behaving, together with the psychological mechanisms that underlie this pattern. In this introduction to personality science, students will critically engage with a variety of theories, methodologies, and research findings that influence current thinking about personality. Issues considered include approaches to studying personality; biological, social, and cultural bases of personality; conscious and unconscious personality processes; and influences of personality on behavior and life outcomes. *Prerequisite:* Psychology 111. *Four credit hours.* HAYES

PS253s Social Psychology An examination of major topics and current issues and research in social psychology. Includes self-perception, social cognition, attitudes, interpersonal attraction, social influence, altruism, aggression, group processes, decision making, and various special applied topics such as social psychology and business, health, and the legal system. *Prerequisite:* Psychology 111. *Four credit hours.* PITTMAN

PS254f Abnormal Psychology An examination of major paradigms, research, and current issues in abnormal psychology. Includes diagnostic classification, etiology, and clinical intervention strategies as applied to the major categories of mental disorder. Special topics such as treatment outcome research methods, professional ethics in mental health settings, and the importance of comorbidity in the study of psychopathology are addressed. *Prerequisite:* Psychology 111. *Four credit hours.* SHEETS

PS255f Child Development Presentation of the psychological principles as they relate to development. Focus topics include in utero development, cognitive development, physical development, social/emotional development, attachment, parenting, peers/play, gender roles, importance of context/culture in development, resiliency, and developmental research methods. Applied work helps students explore how to bridge the gap between research/theory and use of research/theory in the real world. *Prerequisite:* Psychology 111. *Four credit hours.* RAAG

PS256f Adolescent and Adult Development Presentation of psychological principles as they relate to development with a focus on adolescence, emerging adulthood, adulthood, and aging. Topics include developmental responses to traumatic and positive life changes, death and dying, rites/rituals of passage, cultural influences on development, normative/non-normative development, and resiliency. An extensive unit on identity development highlights racial/ethnic, sexual, gender, class, religious, and career identities as well as the relationships of one's identity to one's social groups. Applied work helps students explore how to bridge the gap between research/theory and its use in the real world. *Prerequisite:* Psychology 111. *Four credit hours.* RAAG

[PS272] Sensation and Perception The major human senses (vision, audition, somesthesis, taste, smell) studied as physiological systems and as intermediaries between the physical and perceived environments. Lecture and integrated laboratory. *Prerequisite:* Psychology 111. *Four credit hours.*

PS275f Human Neuropsychology An examination of neural bases of normal and abnormal human cognition, emotion, and behavior, with integration of modern and classic data from experimental and clinical neuropsychology and neurology. Emphasis on functional neuroanatomy in sensory-perceptual, motor, and emotional-motivational function, in cognitive processes including learning, memory and language, in mental disorders, and in brain injury and disease. Includes critical reading and discussion of modern and classic scientific and popular articles and related written assignments and oral presentation. *Prerequisite:* Psychology 111. *Four credit hours.* YETERIAN

[PS335] Developmental Psychology Seminar Psychological principles as they relate to human development. After focusing on developmental theories, students select and address specific topics, such as bullying, domestic violence, development with disabilities, parenting stress, poverty, development during wartime, and systems of discrimination (sexism/racism/homophobia/classism). Research methods in development (which are unique and different from methods in other sub-areas of psychology) are also explored. Students are expected to participate in applied work and to reflect on how to bridge the gap between research/theory and its use in the real world. *Prerequisite:* Psychology 255 or 256, and permission of the instructor. *Four credit hours.*

PS336fs Seminar in Experimental Social Psychology Critical examination of various areas of research in social psychology, with an emphasis on current issues. Discussion topics may include attitude structure and change, cognitive dissonance, group dynamics, health beliefs and behavior, justice, reasoning, self-presentation, social cognition, and stereotypes. Formerly listed as Psychology 356. *Prerequisite:* Psychology 215 and 253, and concurrent enrollment in 337. *Four credit hours.* HAYES, PITTMAN

PS337fs Collaborative Research in Social Psychology Laboratory involving collaborative empirical research projects on topics discussed in Psychology 336. *Prerequisite:* Concurrent enrollment in Psychology 336. *One credit hour.* HAYES, PITTMAN

[PS339] Seminar in Personality Psychology With its companion, Psychology 340, trains students to be personality psychologists-informed consumers and producers of personality science. Students will critically engage with a variety of personality theories and research through reading, writing, and discussion. Issues considered include how specific habits of thinking, feeling, and behaving cohere into broader personality traits; how personality develops across the life span; and how personality influences behavior and life outcomes. *Prerequisite:* Psychology 215 and 251, and concurrent enrollment in Psychology 340. *Four credit hours.*

[PS340] Collaborative Research in Personality Psychology Each student will become an expert about a specific issue related to personality. Working collaboratively, they will then design, conduct, and present a research project that contributes new scientific knowledge about this issue. *Prerequisite:* Concurrent enrollment in Psychology 339. *One credit hour.*

PS341f Seminar in Memory In-depth study of one or more areas of memory. Questions and issues in the field of memory are explored through reading and discussion of theoretical reviews and empirical research. Topics may include memory errors, the relationship between attention and memory, and how to apply principles of basic memory to educational settings. Evaluation of theories and interpretation of data within the main theoretical contexts will be achieved through reading and discussing original research articles. In-class discussion, as well as presentations and written assignments will assess the achievement of these goals. *Prerequisite:* Psychology 215 and 232, and concurrent enrollment in Psychology 342. *Four credit hours.* COANE

PS342f Collaborative Research in Memory Collaborative empirical research projects on topics discussed in Psychology 341. Students will conduct original empirical work addressing an original research question on a specific topic in memory being addressed in the seminar component. Following the guidelines of the American Psychological Association, students' competence in research and communication will be assessed through written assignments and oral presentations, both collaborative and individual. *Prerequisite:* Concurrent enrollment in Psychology 341. *One credit hour.* COANE

PS343s Seminar in Emotion Theory and Research Critical examination of various areas of research in emotion, with an emphasis on current issues. Discussion topics may include models of emotion, emotion antecedents and appraisal, emotional response (facial expression, subjective report, physiological arousal), emotion regulation, and dysfunctional emotion in the context of psychopathology. *Prerequisite:* Psychology 215 and 254, and concurrent enrollment in Psychology 344. *Four credit hours.* SHEETS

PS344s Collaborative Research in Emotion Laboratory involving collaborative empirical research projects on topics discussed in Psychology 343. Students design, conduct, and present original research on emotion. *Prerequisite:* Concurrent enrollment in Psychology 343. *One credit hour.* SHEETS

[PS345] Seminar in Perception and Action Critical examination of various areas of research in human movement and coordination, with an emphasis on the role of action for understanding cognition, perception, and social interaction. Discussion topics may include classical explanations of human movement and motor control, perception and action, mimicry and imitation, affordances, dynamical systems theory, locomotion and postural control, intrapersonal and interpersonal coordination, social action, and the adaptive properties of movement variability and noise. *Prerequisite:* Psychology 215 and either 232 or 272, and concurrent enrollment in Psychology 346. *Four credit hours.*

[PS346] Collaborative Research in Perception and Action Course involving collaborative empirical research projects on topics discussed in Psychology 345. *Prerequisite:* Concurrent enrollment in Psychology 345. *One credit hour.*

PS347f Seminar in Cognitive Development Study of several areas of cognitive development focusing on preschool-aged children. Current theories and empirical research are explored with an emphasis on developmental processes. Discussion topics may include memory development, children's information processing, and problem solving. Reading and discussion of empirical research articles allow for development of skills for evaluating current empirical research, placing new data within a theoretical context, and explaining cognitive development from several theoretical perspectives. *Prerequisite:* Psychology 215, and either 232 or 255, and concurrent enrollment in 348. *Four credit hours.* ARTERBERRY

PS348f Collaborative Research in Cognitive Development Collaborative empirical research projects on topics discussed in Psychology 347. Empirical work addressing an original research question on a topic pertaining to preschool-age children's cognitive development. Collaborative and individual oral and written assignments, following the conventions of the American Psychological Association, evaluate students' research and communication competencies. Includes working with children in a local early-childhood program. *Prerequisite:* Concurrent enrollment in Psychology 347. *One credit hour.* ARTERBERRY

PS349f Seminar in Neural Plasticity and Behavior Several topics within the field of behavioral neuroscience will be examined in depth with an emphasis on rat models of cognition, emotion, and motivated behaviors. Current and historical contexts will be examined and discussion topics will focus on varieties of neural plasticity and their relevance to behavior, including adult hippocampal neurogenesis, neuron morphology, neurotransmitter function, protein expression and how these plastic features pertain to memory consolidation, anxious and exploratory behaviors, stress reactivity and consequences, reward mechanisms, and/or social interactions. Reading and discussion of empirical and review papers will develop skills to critically evaluate and integrate published and generated data. *Prerequisite:* Psychology 215 and 233, and concurrent enrollment in Psychology 350. *Four credit hours.* GLENN

PS350f Collaborative Research in Neural Plasticity Collaborative empirical research projects on topics discussed in Psychology 349. Empirical work addressing an original research question on a topic pertaining to a feature of brain plasticity and a corresponding behavioral construct will be conducted. Collaborative and individual oral and written assignments, following the conventions of the American Psychological Association, will be used to evaluate students' research and communication competencies. *Prerequisite:* Concurrent enrollment in Psychology 349. *One credit hour.* GLENN

PS352f Sex and Gender Seminar Psychological principles as they relate to sex/gender/sexuality. Focus topics including theoretical perspectives of how the dimensions of sex/gender/sexuality are formed will be addressed in the first half; specific topics related to sex/gender/sexuality in the second. Focus topics are selected by students and have included dating violence, gender bullying, homophobic/transphobic bullying, domestic violence, and links between systems of discrimination (sexism/racism/homophobia/classism). Students are expected to participate in applied work or activism and to reflect on how to bridge the gap between research/theory and using research/theory in the real world to solve social problems linked to sex/gender/sexuality. *Prerequisite:* Psychology 255 and permission of the instructor. *Four credit hours.* RAAG

PS374s Seminar: Psychology and Neuroscience Exploration of the vast intersection between the fields of psychology and neuroscience. Selected topics will be covered in depth to gain insight and understanding about how psychology has shaped and contributed to the field of neuroscience and how findings from neuroscience aid psychological research and theories. Topics may include developmental and degenerative neuropathology and the impact of environment, genetics, psychological factors, and sociocultural contexts over them. Students will read, critically evaluate, and discuss empirical and theoretical papers as they gain depth of knowledge on different topics. Students will be expected to present their ideas in oral and written form and will work on a collaborative writing project. *Prerequisite:* Psychology 233. *Four credit hours.* GLENN

PS375s Human Neuropsychology Seminar Exploration of current and classic issues in human brain-behavior relationships, normal and abnormal, through critical reading and discussion of scientific literature in experimental and clinical neuropsychology and neuroscience, behavioral neurology, and neuropsychiatry. Topics may include neural bases of sensory-perceptual, cognitive, emotional-motivational, and motor processes; mental and neurological disorders; brain injury and disease; and drugs and medications. Includes oral presentations and written critical research reviews. *Prerequisite:* Psychology 233 or 275. *Four credit hours.* YETERIAN

PS416s Senior Empirical Research A senior independent empirical project conducted in one semester that addresses a

question about human or animal behavior or mental processes. Students will be expected to carry out all phases of a research investigation, including a literature review, study design, data collection and analyses, and writing a final report. *Prerequisite:* Psychology 214, content area courses relevant to the research topic, and permission of the department. *Three credit hours.* COANE, GLENN

PS420fs Senior Integrative Seminar A culminating experience for students majoring in psychology, organized around the department's research colloquium series. Students will critically engage with a variety of current psychological research and will integrate theories, methodologies, and findings across areas of psychology. Specifically, students will attend research presentations by invited guest speakers, read companion papers selected by the speakers, meet in a seminar session to discuss each speaker's presentation, and write a final paper that integrates the theories, methodologies, or research findings of at least two colloquium speakers. *Prerequisite:* Senior standing in psychology and permission of the instructor. *Three credit hours.* YETERIAN

PS483f, 484s Honors Research I Under faculty supervision, students prepare a proposal and carry out an independent, empirical project culminating in the preparation of a paper of publishable quality and a formal presentation. A 3.50 major average at the end of the senior year is a condition of successful completion of this program. Application required during junior year. *Prerequisite:* A 3.50 major average at the end of the junior year and permission of the department. *Four credit hours.* FACULTY

PS483Jj Honors Research I *Noncredit.* SHEETS

PS491f, 492s Independent Study Individual projects, under faculty supervision, in areas in which the student has demonstrated the interest and competence necessary for independent work. Cannot be counted toward the psychology major or minor. *Prerequisite:* Permission of the instructor. *One to four credit hours.* FACULTY