PSYCHOLOGY

Chair, Professor Martha Arterberry, Associate Chair, Associate Professor Christopher Soto
Professor Martha Arterberry; Associate Professors Jennifer Coane, Melissa Glenn, Tarja Raag, Erin Sheets, and Christopher Soto;
Assistant Professor Elizabeth Seto; Visiting Assistant Professors Michael Buccigrossi, Ross Rogers, and Zachary Shipstead

We believe the best way to learn the science of psychology is by engaging our faculty and students in a collaborative search for new knowledge about human cognition, emotion, and behavior. This process begins with an understanding of the discipline’s conceptual foundations, and it requires a firm grounding in methods of research design and statistical analysis. Psychology majors learn how to explain behavior from multiple perspectives; how to ask substantive questions and to use appropriate empirical methodologies to address those questions; how to communicate their findings clearly in written, oral, and visual forms; and how to interact with humans and animals following the ethical standards of the field.

An extensive program of laboratory research provides the means for students and faculty to work together to explore interesting phenomena in cognition, development, emotion, health, motivation, neuroscience, perception, personality, psychopathology, and social psychology. Civic engagement and internship opportunities allow students to apply course content to real-world contexts.

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, 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 no later than the junior year; these courses may not be repeated. Two courses (equivalent to Psychology 111 or the 200-level electives) transferred from other institutions, including those taken while abroad, may be counted toward the major. Psychology and psychology: neuroscience majors may not take any psychology course satisfactory/unsatisfactory. Psychology courses used to fulfill a major in educational studies cannot also count toward a psychology or psychology: neuroscience major.

Requirements for the Major in Psychology

Psychology 111, 214, 215, 420; at least two courses from 241, 251, 253, 254, 259; at least two courses from 232, 233, 234, 236, 242, 272, 275; at least one 300-level seminar with an associated course in collaborative research; at least one other 300-level course.

Requirements for the Major in Psychology: Neuroscience

Psychology 111, 214, 215, 233, 420; at least two courses from 232, 234, 236, 242, 254, 272, 275; at least two courses from 241, 251, 253, 259; at least one course from 352F, 374, 375; at least one 300-level seminar with an associated course in collaborative research. In addition, Biology 163, 164, and 274 (with lab); at least one biology course from 225, 276, 279, 332, 373, 374, 375, 474. A student may not double major in biology with a concentration in neuroscience and psychology: neuroscience.

Honors in Psychology or Psychology: Neuroscience

Near the end of the junior year, students may be invited by the department to participate in the honors program. Criteria for invitation normally include major GPA, completing at least one seminar and collaborative research paired course by the end of the junior year, overall engagement in research, and compatibility of student and faculty interests. 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.”

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. BUCCIGROSSI, RAAG, SETO, SHEETS, SHIPSTEAD

[PS120A] Our Lives as Animals Drawing mainly on research from the fields of neuroscience and psychology, we will explore how our behavior, like that of other animals, is a product of our biology. We will also explore the ways in which our interactions with the world...
influence and shape the structure and functioning of our brains. No formal background in neuroscience or psychology is required. Students will learn about selected topics and writing through a series of structured writing and speaking assignments in which they can target different audiences, experiment with different styles, and learn effective use of revision. Four credit hours. W1.

[PS120B] Memories and Memoirs Memory supports an individual's sense of self and place in the world. To learn how memory underlies the construction of individual and social narratives, we will talk about memory and memory failures and apply this knowledge to assess memoir essays and other forms of writing. Students will a) practice writing for diverse audiences; b) learn about the process of writing through outlining, drafting, and revising; c) refine skills in writing clearly and eloquently; and d) properly represent and integrate the ideas of others. Students will also learn about the science of memory and memory processes related to long-term memory. Four credit hours. W1.

PS120Cf Worlds of Childhood In this writing-intensive course, we will explore childhood across diverse contexts. Through reading memoirs and novels, we will explore the topics of the context of development, the importance of early experience, identity, and reliance. Students will also practice various forms of writing, including reading responses, opinion pieces, persuasive writing, and a research paper. Can count as Psychology 259 toward the psychology majors. Four credit hours. W1. ARTERBERRY

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. Lecture and laboratory. Prerequisite: Psychology 214, a W1 course, and sophomore or junior standing. Four credit hours. W2. SETO

PS232f 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 that are pervasive in everyday life. Readings and discussion of original papers and written assignments will supplement lectures and texts. Prerequisite: Psychology 111. Four credit hours. W1. SOTO

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. W1. SHIPSTEAD

[PS234] 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.

[PS236] 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. Credit cannot be earned for both Psychology 115 and 236. Prerequisite: Psychology 111. Four credit hours.

PS241f Health Psychology An examination of the contributions of psychology to identifying factors that relate to health and illness, promoting and maintaining health, and preventing and treating illness. Students will gain knowledge of methodologies for studying health behavior, the role of psychological, social, and structural factors in health and illness, theories of health behavior, and designing
interventions to promote health and manage illness. In addition, students will apply course content to real-life contexts. Prerequisite: Psychology 111. Four credit hours. BUCCIGROSSI

PS242fs Psychoneuroimmunology Study of the influence of psychological state on the communication and coordinated function among cells of the nervous system, the endocrine system, and the immune system. We will review the current molecular and cellular evidence that these systems interact through shared processes of regulation. Other topics include the role of conscious thought, emotional states, meditation, depression, stress, and positivity on immune function. Through exams and written assignments, students will also evaluate the influence of the complex coordinated activity of this psycho-neuro-immuno cell system on psychogenic disease and aging via the impact on cellular detoxification, tumor surveillance, epigenetic mechanisms, and human gut microbiota. Prerequisite: Psychology 111. Four credit hours. BUCCIGROSSI

PS251s Personality Psychology An individual's personality is that person's 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. SOTO

PS253fs Social Psychology Social psychology is the study of how the social environment influences a person's thoughts, feelings, and behaviors. Introduces students to major theoretical perspectives in the field as well as classical and contemporary research in social psychology. Topics include social cognition and perception, the self, attitudes and persuasion, social influence, and interpersonal attraction. Prerequisite: Psychology 111. Four credit hours. ROGERS

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 professional ethics in mental health settings and the criminalization of mental illness are also addressed. Prerequisite: Psychology 111. Four credit hours. SHEETS

PS259fs Lifespan Development A study of human development across the lifespan with emphasis on the general characteristics of development from birth to death. Various theories will be explored to explain developmental processes. Topics include perceptual, cognitive, social, and identity development; the role of families, communities, and culture in development; and death and dying. Students have the option to participate in civic engagement activities in the local community. This applied work helps students explore how to apply the findings of research or tenets of theory to real-world contexts. Students with prior credit for Psychology 255 or 256 cannot receive credit for 259. Prerequisite: Psychology 111. Four credit hours. ARTERBERRY, RAAG

PS272s Sensation and Perception We cannot know about or engage with our physical and social worlds if we cannot perceive them. The starting point is external stimulation of our sensory systems (ears, eyes, skin, mouth, and nose). We will cover the basic functions of each sensory system and then focus on how they work together to provide a coherent view of our environment. Students will participate in in-class demonstrations of perceptual phenomena in addition to reading original empirical articles with an eye toward an understanding of how we use various sources of information to guide our thinking about the world and our actions in it. Prerequisite: Psychology 111. Four credit hours. SHIPSTEAD

[PS275] 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.

PS336fs Seminar in Experimental Social Psychology Trains students to critically examine various areas of research in social psychology. Students will be expected to read, write, and engage in constructive discussions of empirical research articles and develop skills to analyze and evaluate current research in the field. In fall 2018, this course will emphasize topics historically found in existential philosophy; specific discussion topics may include the psychological consequences of belief in free will on moral judgments, social behavior, and understanding of the self and factors that contribute to the experience of authenticity, true self-knowledge, and a meaningful existence. In spring 2019, this course will focus on human efforts to create and maintain feelings of personal significance; specific discussion topics may include mortality awareness and its impact on maintenance of meaning, value and interpersonal relations, potential foundations of morality, factors that impact moral judgments and decision-making, and self-conscious emotions such as guilt, shame, and pride. Prerequisite: Psychology 215 and 253, and concurrent enrollment in 337. Four credit hours.
PS337fs  Collaborative Research in Social Psychology  Collaborative empirical research projects on topics discussed in Psychology 336. Students will design, conduct, and present an original research project that contributes to the knowledge of existential issues within the framework of social psychology. 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 336.  One credit hour.  ROGERS, SETO

[PS339]  Seminar in Personality Psychology  With its companion, Psychology 340, trains students to be personality psychologists— informs 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.  W3.

[PS340]  Collaborative Research in Personality Psychology  Each student will become an expert about a specific issue related to personality. Working collaboratively, students will then design, conduct, and present a research project that contributes new scientific knowledge about this issue. Prerequisite: Psychology 215 and 251, and concurrent enrollment in Psychology 339.  One credit hour.

[PS341]  Seminar in Memory  Focuses on the processes by which memories are modified or distorted. Students will acquire a basic understanding of how memories are reconstructive in nature and depend on and interact with other cognitive processes. Evaluation of theories and interpretation of data will be achieved through reading and discussing original sources. In-class discussion, as well as presentations and written assignments, will help students develop critical and analytical skills to understand and interpret data. Prerequisite: Psychology 215 and 232, and concurrent enrollment in Psychology 342.  Four credit hours.  W3.

[PS342]  Collaborative Research in Memory  Collaborative empirical research projects on topics discussed in Psychology 341. Students will conduct original empirical work testing the reconstructive nature of memory. Students' competence in research and communication will be assessed, following the guidelines of the American Psychological Association, through written assignments and oral presentations, both collaborative and individual. Prerequisite: Concurrent enrollment in Psychology 341.  One credit hour.

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 either 253 or 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

PS347f  Seminar in Cognitive Development  Study of children's cognition with a goal of understanding their increasing competency in eyewitness testimony. Focusing on 3- to 5-year-old children, current theories and empirical research are explored. Discussion topics may include memory development, information processing, perception, attention, and/or how the social context influences cognition. 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; one of 232, 255, or 259; and concurrent enrollment in 348.  Four credit hours.  W3.  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 3- to 5-year-old 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 volunteering weekly 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.  W3.  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

[PS352A] 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, 256 or 259, and senior status. Four credit hours.

[PS352C] Seminar on Mood Disorders and Creativity: The Mad-Genius Debate Are creative people more likely to experience mood disorders? Can extreme mood experiences inform and even enhance creativity? The concept of the "mad genius" has been debated for centuries and remains controversial within modern psychological science. We will explore the nature of creativity and its intersection with mood and mental illness. Learning goals include discussing and critically examining conflicting claims about the effects of mood episodes on creative productivity, conceptually linking psychological science to disciplines of creative expression, and proposing a novel research project regarding mood disorders and creativity. Prerequisite: Psychology 254. Four credit hours.

PS352Df Seminar on Attention and Memory Human thinking would not be possible without attention and memory. We will explore these two components by first understanding how they work in isolation and together to support higher cognitive functions. In addition, we will consider the role of intelligence in how these functions work and how these functions, in turn, support intelligence. Also, we will place these functions in the larger context of everyday cognition, such as equipment design and usage, emotion management, and cognitive dysfunction, to further understand the roles of attention and memory. Students will read the primary literature, guide discussion, and write a research proposal. Prerequisite: Psychology 232. Four credit hours. SHIPSTEAD

[PS352E] Seminar: Developmental Psychology Psychological principles as they relate to developmental psychology. Topics including theoretical perspectives on how development proceeds will be addressed in the first half; specific topics related to development in the second. Topics are selected by students and have included dating violence, bullying, sexuality, domestic violence, links between systems of discrimination (sexism/racism/homophobia/classism), resiliency, parenting, attachment, friendships, mentoring, death, and dying. 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. Prerequisite: Psychology 259. Four credit hours.

PS352Fs Seminar: Neuroscience of Addiction Explores the neurobiology of substance abuse and addiction. Drawing on research using animal and human models, explores a) the neurological foundations of addiction, b) neurological changes as a function of the long-term use of addictive substances, and c) implications for treatment options to restore healthy function. Students will learn about psychoactive substances, previous efforts to control their use by legislation and other means, and current efforts to regulate illegal drug use. Students will read the primary empirical literature, lead discussion, and engage in assignments designed to synthesize what is known about the subject. Prerequisite: Psychology 233. Four credit hours. BUCCIGROSSI

PS354s Seminar in Emerging Adulthood Study of identity change in emerging adults. Current theories and empirical research on identity are explored with an emphasis on developmental processes. Discussion topics may include contexts of change, contextual triggers of change, scaffolding for healthy identity change, and the intersection among identities. Students will determine the more specific focus of identities we study: religious, political, sexual, gender, ethnic/racial, etc. Reading and discussion of empirical research articles allow for development of skills for evaluating current research, placing new data within a theoretical context, and explaining identity development from several theoretical perspectives. Prerequisite: Psychology 215, and either 255, 256, or 259, and concurrent enrollment in 355. Four credit hours. RAAG

PS355s Collaborative Research in Emerging Adulthood Collaborative empirical research projects on topics discussed in Psychology 354. Empirical work addressing an original research question on a topic pertaining to emerging adult identity. Collaborative and individual oral and written assignments, following the conventions of the American Psychological Association, in addition to evaluating student research and communication competencies. Prerequisite: Concurrent enrollment in Psychology 354. One credit hour. RAAG

[PS356] Seminar in Social Psychology and Health Critical examination of current issues in health psychology, with an emphasis on the social psychological approach to the study of health. Discussion topics may include whether, how, and for which individuals social relationships and the social environment affect health, theories of health behavior, and social psychological approaches to health behavior.
change. Reading and discussing empirical research articles will aid students in developing the skills to both critically evaluate and effectively communicate about current research. **Prerequisite:** Psychology 215, either 241 or 253, and concurrent enrollment in 357. **Four credit hours.** W3.

[PS357] **Collaborative Research in Social Psychology and Health** Collaborative empirical research projects on topics discussed in the seminar. Students will design, conduct, and present the findings of a research project that contributes new knowledge to the field of health psychology. **Prerequisite:** Psychology 215, and either 241 or 253, and concurrent enrollment in 356. **One credit hour.**

PS374s **Seminar: Psychology and Neuroscience** Exploration of the vast intersection between the fields of psychology and neuroscience: 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 present their ideas in oral and written form and will work on a collaborative writing project. **Prerequisite:** Psychology 233. **Four credit hours.** GLENN

[PS375] **Seminar: Human Neuropsychology** 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, 236, or 275. **Four credit hours.**

PS416f **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 215, content area courses relevant to the research topic, and permission of the department. **Three or four credit hours.** GLENN, RAAG

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.** BUCCIIGROSSI, RAAG, ROGERS

PS483fjs **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.** GLENN

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