Faculty

Bailey, Everett M, Professor
Vet Physiology & Pharmacology
PHD, Iowa State University, 1968
DVM, Texas A&M University, 1964

Blue-Mclendon, Alice, Clinical Associate Professor
Vet Physiology & Pharmacology
DVM, Texas A&M University, 1989

Dongaonkar, Ranjeet M, Assistant Professor
Vet Physiology & Pharmacology
PHD, Texas A&M University, 2008

Fajt, Virginia R, Clinical Associate Professor
Vet Physiology & Pharmacology
PHD, Iowa State University, 2000
DVM, Auburn University, 1995

Golding, Michael C, Associate Professor
Vet Physiology & Pharmacology
PHD, Texas A&M University, 2003

Han, Guichun, Clinical Assistant Professor
Vet Physiology & Pharmacology
PHD, Dalian Medical University, China, 2002

Heaps, Cristine L, Associate Professor
Vet Physiology & Pharmacology
PHD, University of Missouri - Columbia, 1999

Herman, James D, Clinical Professor
Vet Physiology & Pharmacology
PHD, Texas A&M University, 1995
DVM, Texas A&M University, 1989

Hinrichs, Katrin, Professor
Vet Physiology & Pharmacology
PHD, University of Pennsylvania, 1988

Ivanov, Ivan V, Clinical Associate Professor
Vet Physiology & Pharmacology
PHD, University of South Florida, 1999

Jones, Daniel H, Associate Professor
Vet Physiology & Pharmacology
PHD, University of Guelph, 1976

Kraemer, Duane C, Senior Professor
Vet Physiology & Pharmacology
PHD, Agricultural & Mechanical College (TAMU), 1966

Long, Charles R, Professor
Vet Physiology & Pharmacology
PHD, University of Massachusetts Amherst, 1996

Muneoka, Ken, Professor
Vet Physiology & Pharmacology
PHD, University of California, Irvine, 1983

Newell-Fugate, Anne E, Assistant Professor
Vet Physiology & Pharmacology
PHD, University of Illinois at Urbana-Champaign, 2012
DVM, North Carolina State, 2004

Patterson, Carly A, Clinical Assistant Professor
Vet Physiology & Pharmacology
DVM, University of Illinois at Urbana-Champaign, 2011

Quick, Christopher M, Professor
Vet Physiology & Pharmacology
PHD, Rutgers, The State University of New Jersey, 1999

Ramadoss, Jayanth, Assistant Professor
Vet Physiology & Pharmacology
PHD, Texas A&M University, 2007

Safe, Stephen H, Distinguished Professor
Vet Physiology & Pharmacology
PHD, University of Oxford, 1966

Schroeder, Friedhelm, Senior Professor
Vet Physiology & Pharmacology
PHD, Michigan State University, 1974

Stallone, John N, Professor
Vet Physiology & Pharmacology
PHD, University of Arizona, 1984

Stewart, Randolph H, Clinical Professor
Vet Physiology & Pharmacology
PHD, Texas A&M University, 1997
DVM, Texas A&M University, 1983

Suva, Larry J, Professor
Vet Physiology & Pharmacology
PHD, The University of Melbourne, Australia, 2016

Tian, Yanan, Associate Professor
Vet Physiology & Pharmacology
PHD, Rutgers, The State University of New Jersey, 1993

Washburn, Shannon E, Clinical Associate Professor
Vet Physiology & Pharmacology
PHD, Texas A&M University, 2010
DVM, Texas A&M University, 1994

Wasser, Jeremy S, Associate Professor
Vet Physiology & Pharmacology
PHD, Indiana University, 1985

Westhusin, Mark E, Professor
Vet Physiology & Pharmacology
PHD, Texas A&M University, 1986

Yu, Ling, Research Associate Professor
Vet Physiology & Pharmacology
PHD, Nanjing Agricultural University, 2001
Certificates

- Biomedical Research and Development Certificate (http://catalog.tamu.edu/undergraduate/veterinary-medicine-biomedical-sciences/veterinary-physiology-pharmacology/biomedical-research-development-certificate)

Courses

VTPP 123 Foundations of Physiology
Credits 3. 3 Lecture Hours.
Introduction to fundamental concepts in physiology and the practice of physiology research through exploration of mathematical models used in physiology research; emphasis on prediction of complex adaptive behavior in health and disease from elementary math, physics, chemistry and biology.

VTPP 223 Design of Experiments for Physiology Research
Credits 3. 2 Lecture Hours. 2 Lab Hours.
Team or group formulation and refinement of novel hypotheses and design of controlled in vitro experiments; emphasis on production of publishable research in physiology.
Prerequisite: VTPP 123 or approval of instructor.

VTPP 224 In Vitro Experimentation in Physiology Research
Credits 3. 2 Lecture Hours. 2 Lab Hours.
Team or group collection, analysis and interpretation of data from in vitro experiments; emphasis on production of publishable research in physiology.
Prerequisite: VTPP 223 or approval of instructor.

VTPP 234 Design of Models for Physiology Research
Credits 3. 3 Lecture Hours.
Team or group design of novel models of physiological systems to predict homeostatic behavior arising from the interaction of subsystems; emphasis on production and formal presentation of basic research in physiology.
Prerequisite: VTPP 123 or approval of instructor.

VTPP 235 Analysis and Validation of Models for Physiology Research
Credits 3. 3 Lecture Hours.
Team or group analysis and validation of models of physiological systems to explain disease states and design potential clinical interventions; emphasis on production of publishable applied research in physiology.
Prerequisite: VTPP 234 or approval of instructor.

VTPP 281 Seminar
Credits 4. 4 Other Hours.
Exposure to scientists from a variety of biomedical disciplines through attendance at seminars followed by review and discussion of current scientific work in physiology and related subjects, and subsequent student seminar presentations.
Prerequisites: Freshman or sophomore classification; approval of instructor.

VTPP 285 Directed Studies
Credits 0 to 4. 0 to 4 Other Hours.
Course for freshman and sophomore students who desire additional laboratory work in physiology to supplement required courses.
Prerequisites: Freshman or sophomore classification; approval of department head.

VTPP 291 Research
Credits 0 to 4. 0 to 4 Other Hours.
Laboratory and/or field research supervised by a faculty member. Must be taken on a satisfactory/unsatisfactory basis.
Prerequisites: Freshman or sophomore classification; approval of instructor.

VTPP 323 Physiology of Domestic Animals
Credits 3. 3 Lecture Hours.
Physiology essential to understanding of life processes. For students in agriculture and related fields.
Prerequisite: Junior classification.

VTPP 401 History of Human and Veterinary Medicine in Europe
Credits 4. 4 Lecture Hours.
Addresses the major developments in human and veterinary medicine in Europe from the Middle Ages to the present; explores key events and figures in medical history and analyzes issues of current biomedical concern in an historical context; for example, animal rights, ethics of human experimentation, euthanasia.

VTPP 423 Biomedical Physiology I
Credits 4. 3 Lecture Hours. 2 Lab Hours.
Physiological principles, review of cellular physiology, and development of an understanding of the nervous system and muscle, cardiovascular, and respiratory physiology; clinical applications related to organ systems.
Prerequisites: VIBS 305; junior or senior classification.

VTPP 424/VIBS 424 Biomedical Neuroendocrinology and Endocrine Disorders
Credits 3. 3 Lecture Hours.
Neuroendocrine (hypothalamus-pituitary) control of puberty, menstruation, ovulation, pregnancy, labor, lactation, female reproductive cycles, male reproductive functions, thyroid and parathyroid, adrenal and kidney, diabetes, obesity, sleep, memory, learning and aging and their endocrine disorders; overview on biosynthesis, transport and signaling of peptide and neuropeptide hormones, steroids and prostaglandins.
Prerequisites: Honors, junior or senior classification, or approval of instructor.
Cross Listing: VIBS 424/VTPP 424.

VTPP 425 Pharmacology
Credits 3. 3 Lecture Hours.
Introduction to pharmacokinetics and pharmacodynamics; survey of major pharmaceutical classes; uses, mechanisms of action and adverse reactions of selected agents.
Prerequisites: VTPP 423 or approval of instructor; junior or senior classification.

VTPP 427 Biomedical Physiology II
Credits 3. 3 Lecture Hours.
Continuation of VTPP 423. Fluid balance and acid-base balance; development of an understanding of renal, gastrointestinal, endocrine and reproductive physiology using human and other mammalian models; clinical applications related to organ systems.
Prerequisites: VTPP 423; junior or senior classification.
VTTP 429 Introduction to Toxicology
Credits 3. 3 Lecture Hours.
An overview of toxicology with emphasis on environmental, human and animal health issues.
Prerequisite: Junior or senior classification.

VTTP 434 Physiology for Bioengineers I
Credits 4. 3 Lecture Hours. 1 Lab Hour.
Cellular anatomy, cellular physiology and biochemistry; systems analysis of digestive, endocrine and musculoskeletal system function including information related to gross anatomy, histology and disease states; quantitative aspects of physiology and engineering applications to clinical medicine.
Prerequisites: Junior or senior classification; biomedical engineering major or approval of instructor.

VTTP 435 Physiology for Bioengineers II
Credits 4. 3 Lecture Hours. 1 Lab Hour.
A systems analysis of nervous, cardiovascular, respiratory and urinary function including information related to gross anatomy, histology and disease states; quantitative aspects of physiology and engineering applications to clinical medicine.
Prerequisites: VTTP 434; junior or senior classification.

VTTP 438 Analysis of Genomic Signals
Credits 3. 2 Lecture Hours. 2 Lab Hours.
Overview of current high throughput technology for data acquisition and analysis of genomic signals (e.g. mRNA or proteins); emphasis on the microarray technology, methods for analyzing microarray data, and approaches to model the underlying phenomena from the systems biology perspective.
Prerequisites: Junior or senior classification; BIMS 320/GENE 320 or GENE 320/BIMS 320 and BIOL 111, BIOL 112 or BIOL 213 or equivalent; STAT 302 or equivalent.

VTTP 439 Non-Coding RNA’s
Credits 3. 3 Lecture Hours.
Advanced topics in noncoding RNA’s in gene regulation; investigation of the role of noncoding RNAs and epigenetic regulatory factors in modulating gene expression, physiological functions and disease development.
Prerequisite: Junior or senior classification or approval of instructor.

VTTP 444 Practicum in Biomedical Research
Credits 3. 3 Other Hours.
Team or group development of sustainable collaborations that include biomedical research, high-impact educational practices and community service; focus on connecting research experience to future career goals.
Prerequisites: VTTP 423 and VTTP 427 or VTTP 434 and VTTP 435; junior or senior classification.

VTTP 450 Stem Cell Physiology
Credits 3. 3 Lecture Hours.
Advanced topics in stem cell biology; exploration of mammalian stem cells, stem cell characteristics, cell differentiation potency, molecular basis of stem cell signaling, regulatory pathways, research tools and experimental models.
Prerequisite: Junior or senior classification or approval of instructor.

VTTP 452 Fetal and Embryo Physiology
Credits 3. 3 Lecture Hours.
Introduction to the physiologic processes driving embryonic development and pregnancy; focus on embryo implantation, establishment of the placenta, development of the fetal circulatory systems and the molecular processes governing embryo differentiation and development; special emphasis on the major organ systems affected by pediatric disease and on the actions of teratogens.
Prerequisite: BICH 410 or equivalent, or approval of instructor.

VTTP 481 Seminar
Credits 4. 4 Other Hours.
Exposure to scientists from a variety of biomedical disciplines through attendance at seminars followed by review and discussion of current scientific work in physiology and related subjects, and subsequent student seminar presentations.
Prerequisites: Junior or senior classification; approval of instructor.

VTTP 485 Directed Studies
Credits 0 to 4. 0 to 4 Other Hours.
Course for junior and senior students who desire additional laboratory work in physiology to supplement required courses.
Prerequisites: Junior or senior classification and approval of department head.

VTTP 489 Special Topics in...
Credits 1 to 4. 1 to 4 Lecture Hours. 0 to 4 Lab Hours.
Selected topics in an identified area of physiology, pharmacology, endocrinology or toxicology. May be repeated for credit.
Prerequisite: Junior or senior classification.

VTTP 491 Research
Credits 0 to 4. 0 to 4 Other Hours.
Laboratory and/or field research supervised by a faculty member.
Prerequisites: Junior or senior classification; approval of instructor.