

COLLEGE OF VETERINARY MEDICINE

College Administration

Carlos Risco, DVM, Dipl. ACT—Dean

Jerry Ritchey, DVM, PhD, DACVP—Associate Dean Academic and Student Affairs

Jerry Malayer, PhD—Sr. Associate Dean for Research and Graduate Education

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College of Veterinary Medicine

The College of Veterinary Medicine (CVM) is the premier provider of animal care in the state of Oklahoma and for the region. The CVM provides quality educational opportunities to prepare our graduates for varied careers within the veterinary profession. The veterinary medical profession is rewarding, exciting, and one that touches the environment and the lives of humans and animals alike. The career options available to graduates with a Doctor of Veterinary Medicine (DVM) degree are as varied as the people who make veterinary medicine their life-long commitment. The College of Veterinary Medicine at Oklahoma State University offers a program designed to prepare new graduates for a variety of biomedical careers including private practice, post-DVM clinical training, research, industry, military, and government.

Mission: Innovation in animal and human health.

Vision: To be innovative world leaders in healthcare, research, and professional education.

Core Values:

- **Communication:** Understanding the importance of good communication for the proper functioning of the team and advancing our common goals.
- **Integrity:** We will demonstrate at all times, and expect of our colleagues, the highest standards of personal integrity.
- **Accountability:** We will be accountable for our own actions, work, and words
- **Teamwork:** Understanding that a team is stronger than the sum of its parts, and that we perform better as a team.
- **Leadership:** Recognizing that we can all be leaders.

Accreditation

The College is accredited by the Council on Education of the American Veterinary Medical Association. Accreditation is based on an assessment of 11 essential factors, namely, the college's organization, its finances, facilities and equipment, clinical resources, library and learning resources, enrollment, admissions, faculty, curriculum, continuing and post-graduate education, and research.

High School Preparation

Preparation for a career in veterinary medicine includes understanding the profession. Volunteering, shadowing or working with a veterinarian is essential. Students should develop emotional maturity and become aware of how medical decisions include patient, client and financial issues. Professionalism and ethics are fundamental for veterinarians. Although the veterinary school does not use your high school grades to determine eligibility, students in high school are strongly encouraged to take coursework heavy in the math and sciences if offered.

Admission and Application Requirements

Earning a DVM degree requires dedication and hard work, but the rewards are returned for a lifetime. In general, students must complete three to four years of pre-veterinary undergraduate coursework followed by four years of a professional program in a college of veterinary medicine.

Students may choose any accredited college/university to complete their pre-veterinary coursework, however, choosing a major related to the student's interest in science and animals is wise. The College requires all applicants to be within 1 year of completing specific required courses to be eligible for application. For a list of required courses, visit the website: <https://vetmed.okstate.edu/students/pre-vet-courses.html> (<https://cvhs.okstate.edu/students/pre-vet-courses.html>)

Other factors can contribute to an applicant's eligibility for application to the DVM Program. For a detailed list of those factors, visit the "Eligibility" portion of the OSU-CVM website: <https://vetmed.okstate.edu/students/eligibility.html> (<https://cvhs.okstate.edu/students/eligibility.html>)

Early Admission Program

Students pursuing careers in the health sciences often make their career decision prior to undergraduate enrollment. The goal of the Early Admission Program is to aid students with strong academic ability that are interested in veterinary medicine and guide them in their pursuit of a veterinary medical career. The Early Admission Program strives to provide guidance, direction, mentorship, and provisional admission for students with superior academic achievement and interpersonal skills that are well-suited to the missions of the veterinary profession. The EAP is open to all incoming true college freshmen attending a 4-year Oklahoma institution. Visit the Early Admission Program page on the CVM website for more information: <https://vetmed.okstate.edu/students/early-admission.html> (<https://cvhs.okstate.edu/students/early-admission.html>).

Scholarships

The College has a variety of scholarships available to currently enrolled veterinary medicine students. The scholarship application opens late in the fall semester.

Selection Factors

The Admissions Committee seeks to admit students with excellent records of academic achievement, in addition to backgrounds that help predict potential success in a variety of veterinary medical careers. Because the veterinary medical profession is constantly changing, the faculty supports the concept of achieving diversity in each entering class. The College of Veterinary Medicine typically admits 106 students annually of which 58 are Oklahoma residents and 48 are out-of-state students.

In selecting applicants for admission, the Admissions Committee will consider both quantitative (grade point averages, course load, and standardized test scores) and qualitative factors (veterinary experience, background, personal statement and letters of recommendation).

Residents receive a score based on the evaluation of their application materials as well as a personal interview conducted by members of the Admissions Committee. Interviews for resident applicants are not automatically granted but are strictly by invitation only. The nonresidents' qualitative score is based on file review by members of the Admissions Committee. Personal interviews are not offered to nonresident applicants.

Strong applications include letters of recommendation from references who have had recent experiences with the applicant. The CVM requires three letters of recommendation, one of which must come from a veterinarian, preferably one with whom has working experience with the applicant (e.g. employment, job shadowing, training, etc.).

College Curriculum

The veterinary school's curriculum prepares students for a wide variety of careers. It emphasizes educating general practitioners and prepares students for nonpractice careers. The curriculum is built on a culture of scholarship that has led to an excellent reputation for educating students not only to be ready to enter practice but to become successful veterinarians.

The curriculum is integrated across departments and is systems-based rather than topic-based. The teaching style includes lecture and small-to large-group case discussion formats. Hands-on animal experiences are emphasized beginning in a student's first year. The college teaches all animal species. Students may pursue their area of interest through elective courses starting in their second year and can continue through their fourth. These electives include opportunities to focus on animal species interests, discipline interests and research. The 4th year is a mixture of required hospital rotations and electives including off-campus experiences. They are encouraged to take externships in private practice, referral centers, specialty practices, government laboratories, zoos, or other facilities to expand their experience of the realities of the diverse careers available to them.

For a full list of the OSU DVM Curriculum, visit the "DVM Curriculum" portion of the CVM website: <http://catalog.okstate.edu/college-veterinary-medicine/degree-programs/veterinary-medicine-dvm/> (<http://catalog.okstate.edu/college-veterinary-medicine/degree-programs/veterinary-medicine-dvm/%20/>).

Graduate Program

Comparative Biomedical Sciences

Joshua Butcher, PhD—Assistant Professor and Assistant Faculty Graduate Coordinator

The comparative biomedical sciences (CBSC) graduate program is a multidisciplinary program intended to provide students with a broad base of research areas to address individual student interests. The program is administered within the College of Veterinary Medicine but may involve faculty from other colleges. Programs of research and study leading to the degrees of Master of Science and Doctor of Philosophy are available within the broad areas of focus: infectious diseases, pathobiology, and physiological sciences. The program is designed to prepare individuals

for careers in teaching and research, and specialization is possible within each area dependent upon student and faculty interests and available funding.

Current areas of research focus include molecular, cell and developmental biology, clinical sciences (including laser applications and oncology); infectious and parasitic diseases (including vector-borne diseases, bacterial and viral diseases in wild and domestic animals); pathobiology; and toxicology. Faculty and their specific areas of interest are available through the graduate coordinator (cbssc@okstate.edu (vbssc@okstate.edu)) or online at <https://vetmed.okstate.edu/students/comparative-biomedical-sciences/index.html> (<https://vetmed.okstate.edu/students/comparative-biomedical-sciences/>).

Prerequisites

Candidates for admission must possess a bachelor's degree or equivalent, with a background in biological or physical sciences. Although there are no absolute performance level requirements, applicants with quantitative GRE scores at the 75th percentile or greater and GPAs of 3.0 (out of 4.0) or greater, will receive the strongest consideration.

The Master of Science Degree

The MS may be earned with 30 credit hours beyond a bachelor's degree or 21 hours beyond the DVM degree, including not more than six credit hours for the thesis. The plan of study is designed to meet the student's needs and interests and typically includes two credits of seminar, one course in statistics, and courses in molecular or cell biology and pathobiology. The student must also pass a final oral examination covering the thesis and related course work.

The Doctor of Philosophy Degree

The PhD requires a minimum of 60 credit hours beyond the bachelor's degree or DVM degree, including up to 45 credit hours for research and dissertation. The plan of study is designed to meet the student's needs and interests and typically includes courses in cell and molecular biology, pathobiology, statistics, and seminar. Written and oral qualifying examinations are required. Students must prepare a research proposal and complete and defend a dissertation based on original research.

Application Procedure

Applications are made to the Graduate College (<http://gradcollege.okstate.edu/apply> (<http://gradcollege.okstate.edu/apply/>)) and are accepted at any time; however, all documents should be received before March 1st for admission to the fall semester. Applicants are required to submit official transcripts of all college-level work and scores for the GRE general test. International applicants are required to take an English proficiency exam, unless a student completed a baccalaureate or graduate degree from an accredited institution of higher learning at which English is the primary language of instruction. For students seeking graduate teaching assistantships, a score of 22 or greater on the speaking part of the internet-based TOEFL (iBT) or 7.0 on the speaking portion of the IELTS is required. In addition, the applicant will submit a statement of purpose stating their preparation for graduate study as well as how earning a graduate degree will further their educational and career goals and will have three persons knowledgeable of their preparation for graduate study write and submit letters of reference.

Information about faculty research interests is available upon request to the graduate coordinator (cbssc@okstate.edu (vbssc@okstate.edu)). After acceptance to the graduate program, students select a major professor

and an advisory committee and develop a plan of study consistent with the CBSC graduate program requirements and subject to the approval of the dean of the Graduate College.

Assistantships

A limited number of graduate teaching and research assistantships are available.

Internship and Residency Programs

Internships and residency programs in clinical medicine and surgery are offered through the Department of Veterinary Clinical Sciences. Residency programs in pathology are offered through the Department of Veterinary Pathobiology.

Academic Areas

- Veterinary Clinical Sciences (p. 3144)
- Veterinary Pathobiology (p. 3145)
- Physiological Sciences (p. 3146)
- Degree Programs (p. 3147)

Graduate Programs

- Comparative Biomedical Science, MS (p. 3148)
- Comparative Biomedical Science, PhD (p. 3149)

Professional Programs

- Veterinary Medicine, DVM (p. 3150)

Faculty

Veterinary Pathobiology

*Jerry Ritchey, DVM, PhD, DACVP—Professor and Department Head

Regents Professors and Endowed Chairs: *Anthony W. Confer, DVM, PhD, DACVP (emeritus) and Walter R. Sitlington Endowed Chair; Clinton J. Jones, PhD, and Sitlington Endowed Chair; *Susan Little, DVM, PhD, DAVPC-Parasitology and Krull/Ewing Endowed Chair

Professors: Kenneth Clinkenbeard, DVM, PhD (emeritus); *Jean M. d'Offay, DVM, PhD, DACVM (emeritus); Richard W. Eberle, PhD (emeritus); *Robert W. Fulton, DVM, PhD, DACVM (emeritus); Katherine M. Kocan, MSPH, PhD (emerita); *James H. Meinkoth, DVM, PhD, DACVP; Mason Reichard, PhD; *Timothy Snider, DVM, PhD, DACVP

Associate Professors: Tom Oomens, PhD; *Jared Taylor, DVM, MPH, PhD, DACVIM, DACVPM

Assistant Professors: Kelly Allen, MS, PhD; Fernando Vicosa Bauermann, DVM, PhD; *Valerie McElliott, DVM, PhD, DACVP; *Craig Miller, DVM, PhD, DACVP; *Akhilesh Ramachandran, BVSc&AH, PhD, DACV

Clinical Professors: *Todd Jackson, DVM, DACLAM; *Theresa Rizzi, DVM, DACVP

Clinical Associate Professors:

Clinical Assistant Professor: *Susan E. Fielder, DVM, DACVP; Yoko Nagamori, DVM

Associate Research Professor: Edmour Blouin, PhD (emeritus)

Lecturer: Dr. Jennifer Rudd, DVM; Meriam Saleh, PhD

Research Scientist: Maraya Maggioli

Residents: Kathryn Duncan, DVM; Dah Jiun Fu, DVM; Ryan Kalish, DVM; Sierra Salopek, DVM; Ruth Scimeca, PhD; Erin Stayton, DVM

Post-Doctoral Fellows: Kelly Harrison, PhD; Jeff Oster, PhD

Graduate Teaching Associates: Laximan Sawant, BVSc, MVSc

Veterinary Clinical Sciences

*Daniel J. Burba, DVM, DACVS, McCasland Professor of Biomedical Laser Surgery and Department Head

Regents Professor and Endowed Chairs: Kenneth Bartels, DVM, MS, and Cohn Family Chair for Animal Care (emeritus); *Melanie Boileau, DVM, MS, DACVIM, and Clinical Professorship in the Center for Veterinary Health Sciences; *Daniel J. Burba, DVM, DACVS, and McCasland Endowed Chair; *Danielle Dugat, Cohn Family Chair for Animal Care; *Andrew Hanzlicek, DVM, MS, DACVIM, and Kirkpatrick Chair in Small Animal Medicine; *Todd Holbrook, DVM, DACVIM, DACVSMR, and Jack & June Jacobs Chair in Veterinary Medicine; G. Reed Holyoak, DVM, PhD, DACT, and Bullock Professor; *Michael D. Lorenz, DVM, DACVIM, and Regents Service Professor (emeritus); *Lara Sypniewski, DVM, DABVP, and Henthorne Clinical Professorship

Professors: *Joseph Alexander, DVM, DACVS (President, CIED) (emeritus); *Kenneth Bartels, DVM, MS (emeritus); *Daniel J. Burba, DVM, DACVS; *Lionel J. Dawson, BVSc, MS, DACT; *Margi A. Gilmour, DVM, MS, DACVO; *Todd Holbrook, DVM, DACVIM, DACVSMR; G. Reed Holyoak, DVM, PhD, DACT; *John P. Hoover, DVM, MS, DACVIM, DABVP (emeritus); *Charles G. MacAllister, DVM, DACVIM (emeritus); *Mark Neer, DVM, DACVIM (emeritus); *Richard Shawley, DVM, MS, DACVA (emeritus)

Associate Professors: *Robert J. Bahr, DVM, DACVR (emeritus); *Melanie Boileau, DVM, MS, DACVIM; *Mary H. Bowles, DVM, DACVIM

(emeritus); *Erik Clary, DVM, PhD, DACVS; *Daniel Dugat, DVM, DACVS; *Lyndi Gilliam, DVM, DACVIM; *Nicola Di Girolamo, DVM, Msc, PhD, DECZM; *Andrew Hanzlicek, DVM, MS, DACVIM; *Henry W. Jann, DVM, MS, DACVS, DACVSMR (emeritus); *Meredyth Jones, DVM, MS, DACVIM; *John Kirkpatrick, DVM, DABVP (emeritus); Carolyn T. MacAllister, DVM (emeritus); *Gregor L. Morgan, MVSc, PhD, DACT (emeritus); *Michael J. Schoonover, DVM, MS, DACVS, DACVSMR

Assistant Professors: *Joao Manuel Lemos Brandao, LMV, MS, DECZM; *Shane Lyon, DVM, DACVIM; *Laura Nafe, DVM, MS, DACVIM; *Emily McCool, DVM; *Megan Williams, DVM, DACVS

Clinical Professor: *Marjorie Gross, DVM, MS, DACVA (emeritus)

Clinical Associate Professor: *Patricia Coan, DVM, PhD, DACLAM;

*Stefano Di Concetto, DVM, MS, DACVAA; *Paul DeMars, DVM, CABVP; *John Gilliam, DVM, DAVBP, DACVIM; *Robert Streeter, DVM, MS, DACVIM; *Lara A. Sypniewski, DVM, DABVP; *Asitha Vasudevan Pillai, DVM, MS

Adjunct Associate Professors: Wei R. Chen, PhD; Alex Cohen, M.D. PhD; *William Dubois, DVM, DABVP; *Cheryl Lopate, DVM, MS, DACT; *Mark Munson, MD

Clinical Assistant Professors: Kimberly D. Carter, DVM; *Carrie Kuzma, DVM; Katrina Meinkoth, DVM; Sarah Peakheart, DVM

Adjunct Assistant Professors: *Kay Backues, DVM, DACZM; *Jennifer D'Agostino, DVM, DACZM; *Lindsay Donnelly, DVM, MS, DACVIM

Lecturer: Jillian Paegelow, DVM

Residents: Kristen Clark, DVM, Small Animal Internal Medicine (2017-2020); Adam Moore, DVM, Small Animal Internal Medicine (2017-2020); Samantha A. Bailey, DVM, Small Animal Internal Medicine (2018-2021); Emily Davis, DVM, Small Animal Internal Medicine (2019-2022); Donald Holter, DVM, Small Animal Surgery (2018-2021); Jane Park, DVM, Small Animal Surgery (2018-2021); Rodrigo Roca, DVM, Small Animal Surgery (2019-2022); Amy Lovett, DVM, Equine Internal Medicine, (2017-2020); Jessica Rutledge, DVM, Equine Internal Medicine (2017-2020); Hugh Duddy, DVM, Equine Surgery (2018-2021); Kelsey Jurek, DVM, Equine Surgery (2019-2022); Brian Weaver, DVM, APVP Food Animal (2018-2020); Natasha Williams, DVM, Food Animal Medicine (2018-2021); Elizabeth Crabtree, DVM, Food Animal Medicine (2019-2022); Cory Anderson, DVM, Theriogenology (2019-2022); Adam Bassett, DVM, Theriogenology (2019-2022)

Interns: Chelsea Connor, DVM, Small Animal Medicine & Surgery; Sarah Gronsky, DVM, Small Animal Medicine & Surgery; Jacklyn Gross, DVM, Small Animal Medicine & Surgery; Ivette Irizarry, DVM, Small Animal Medicine & Surgery; Sydney St. Clair, DVM, Small Animal Medicine & Surgery; Evan Crisman, DVM, Equine Medicine and Surgery; Kelsey Studer, DVM, Avian Exotics and Zoological; Elizabeth Soler, DVM, Ophthalmology.

Physiological Sciences

Martin Furr, PhD—Professor and Department Head

Regents Professors: Lin Liu, BS, PhD (Lundberg-Kienlen Professor of Biomedical Research); Carey N. Pope, PhD (Sitlington Chair in Toxicology)

Professors: James E. Breazile, DVM, PhD (emeritus); Nicholas L. Cross, PhD (emeritus); *Michael S. Davis, DVM, MS, PhD (Oxley Chair in Equine Sports Medicine); Jerry R. Malayer, PhD; *Dianne McFarlane, MS, DVM, PhD (Ricks Rapp Professorship); Lara K. Maxwell, DVM, PhD; Charlotte L. Ownby, MS, PhD (emeritus); Chris Ross, DVM, PhD; Alastair G. Watson, BVSc, PhD (emeritus)

Adjunct Professors: David W.A. Bourne, MS, PhD; Stephen Brimjoin, BA, PhD; Larry P. Gonzalez, BS, MA, PhD; Terence H. Risby, PhD

Associate Professors: Jill Akkerman, DVM, PhD; Guangping Chen, MS, PhD; Myron Hinsdale, DVM, PhD; Veronique Lacombe, DVM, PhD, Diplomate ACVIM, Diplomate ECEIM; James W. Lish, MS, PhD (emeritus); Pamela G. Lovern, BA, PhD; Joseph P. McCann, PhD; *Sandra E. Morgan, MS, DVM (emerita); Ashish Ranjan, B.VSc., PhD (Kerr Endowed Chair); Larry E. Stein, PhD (emeritus)

Adjunct Associate Professors: Joseph R. Bidwell, BSc, MSc, PhD; David R. Wallace, BS, PhD; Guolong Zhang, BS, MS, PhD

Assistant Professors: Joshua Butcher, M.S., PhD; Madhan Subramanian, BVSc, PhD

Adjunct Assistant Professor: Terry A. Gipson, BS, MS, PhD

Assistant Research Professors: Chaoqun Huang, MD, PhD; Narasa Raju Teluguakula, BSc, MSc, PhD

Research Associate: Yurong Liang, BS, PhD; M. Cristina Munteanu, MS, PhD; Pulavendran Sivasami, MS, PhD

Post-Doctoral Fellows: Allison Campolo, PhD; Kalyani Ektate, BVSc, MVSc, PhD; Fang Hau, PhD; Sri Nandhini Sethuraman, BVSc, MVSc, Kishor Vaddadi, PhD; Lingyan Wang, BS, MS, PhD

Graduate Teaching Associates: Harshini Ashar, BVSc, MVSc; Bridgette French-Harbison, BS, MS; Girish Patil, MVSc; Mohit Singh, MVSc; Kun Song, BS; Joshua VanOsdol, BS; Nishani Wijesekera, BVSc; Dao Xu, BS

Graduate Research Associates: Gayan Bamunuarachchi, BS; Mike Gorbet, BS; Sugandhika Gothami, BS; Wenzhuo Hao, BS, MS; Kong Lin, BS; Stacey Herriage, BA; Robert Jeyasingh, BVSc; Kirstin Hester, BS; Raisa Monteiro, BVSc; Shannon Remerowski, BS, DVM; Oluwayemisi Semola, U; Lakmini Senavirathna, BS

Staff: Montana Fulton, RVT; Dallas Karcher, BS; Erin Langford-Loftis, BS; Christopher H. Pivinski, BS; Lana Schler, BS

***Board Certification in Specialty Area**

Veterinary Clinical Sciences

Daniel J. Burba, DVM, DACVS, McCasland Professor of Biomedical Laser Surgery and Department Head

The Department of Veterinary Clinical Sciences is one of four academic departments at the CVM. The Veterinary Clinical Sciences faculty are an integral part of the Boren Veterinary Medical Hospital. The faculty train veterinary students through hands-on experience and provide the highest quality of care to clients and patients. In addition to training veterinary students, there are several residents and interns in various sections of the hospital who are guided by the VCS faculty.

Visit the Veterinary Medical Hospital webpage (<https://cvhs.okstate.edu/veterinary-medical-hospital/>) to learn more about the faculty and staff and the services they provide.

Internship and Residency Programs

The department offers graduate professional programs (internships and residencies). Internships are one-year post-DVM clinical programs in exotic, small animal critical care, shelter surgery, small or large animal medicine and surgery.

Internships are designed in part to prepare DVM graduates for residencies or graduate academic programs. Currently, internships are offered in small animal medicine and surgery rotating, equine internal medicine and surgery rotating, small animal emergency and critical care, equine surgery & sports medicine, farm animal medicine & surgery, small animal surgery specialty, shelter surgery and medicine, and zoological medicine.

Residencies are three-year clinical programs in various disciplines designed in part to prepare for specialty board certification. Currently, residencies are offered in small animal surgery, equine internal medicine, food animal medicine and surgery, ophthalmology and theriogenology. Graduate academic programs may be available in association with residencies.

Application Procedure

Most open positions are listed in the Veterinary Internship/Residency Matching Program at www.virmp.org (<http://www.virmp.org>) and applications are submitted through the VIRMP. Some programs may be offered outside the match.

Faculty

*Daniel J. Burba, DVM, DACVS, McCasland Professor of Biomedical Laser Surgery and Department Head

Regents Professor and Endowed Chairs: Kenneth Bartels, DVM, MS, and Cohn Family Chair for Animal Care (emeritus); *Melanie Boileau, DVM, MS, DACVIM, and Clinical Professorship in the College of Veterinary Medicine; *Daniel J. Burba, DVM, DACVS, and McCasland Endowed Chair; *Danielle Dugat, DVM, MS, DACVS, Cohn Family Chair for Animal Care; G. Reed Holyoak, DVM, PhD, DACT, and Bullock Professor; *Michael D. Lorenz, DVM, DACVIM, and Regents Service Professor (emeritus); *Lara Sypniewski, DVM, DABVP, and Henthorne Clinical Professorship

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(emeritus); *Mark Neer, DVM, DACVIM (emeritus); *Richard Shawley, DVM, MS, DACVA (emeritus)

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Assistant Professors: Andreza Conti Patara, DVM, MS, MBA, PhD; *Katelyn Fentiman, DVM, MS, DACVO; *Dale Kelley, DVM, MS, PhD; *Emily McCool, DVM, MS, DACVO; *Fabio Pinaffi, DVM, MS, PhD; *Megan Williams, DVM, DACVS

Clinical Professor: *John Gilliam, DVM, MS, DAVBP, DACVIM; *Marjorie Gross, DVM, MS, DACVA (emeritus); *Robert Streeter, DVM, MS, DACVIM; *Lara A. Sypniewski, DVM, DABVP

Clinical Associate Professor: Kimberly D. Carter, DVM; *Paul DeMars, DVM, DABVP; Katrina Meinkoth, DVM (emeritus)

Adjunct Associate Professors: *Drew Hanzlicek, DVM, DACVIM; *Cheryl Lopate, DVM, MS, DACT; *Mark Munson, MD; Daqing Piao, PhD; *Gary Spodnick, DVM, DACVS

Clinical Assistant Professors: Rosslyn Biggs, DVM; Li-Jen Chang, BVM, MVM, CVA, PhD; Brandy L. Close, PhD, MeD; Sarah Peakheart, DVM; *Asitha Vasudevan Pillai, DVM, MS; Brandon M. Raczkoski, PhD

Adjunct Assistant Professors: Jason Anton, DVM; *Kay Backues, DVM, DACZM; Derek Burney, DVM; *Jennifer D'Agostino, DVM, DACZM; *David Russell, DVM DACVD

Adjunct Clinical Instructors: *Tiffany Granone, DVM, DACVAA; Mark Higgins; Tracei Holder, DVM; Mike Jones, DVM; Kevin Long, DVM; Jarrod Roach, DVM; Mark Shackelford, DVM

Lecturers: Kelsey, Jurek, DVM; Jennifer Wyrick, DVM

Residents: Evan Crisman, VMD Equine Internal Medicine (2020-23); Laura May, DVM ABVP Food Animal (2021-23); Sheila Megehee, DVM Theriogenology (2021-24); Megan, Righi, DVM ACVIM/Food Animal (2022-25); Justin Roscoe, DVM Theriogenology (2022-25); Brittnee Saylor, DVM Equine Surgery; (2022-25); Taylor Strickland, DVM Food Animal (2022-25); Elizabeth Soler, DVM Ophthalmology (2020-23); Paul Wallace, DVM Equine Surgery and Sports Med (2022-25); Alex Wittorff, DVM Theriogenology (2022-25)

Interns: Kaitlyn Crocker, DVM, Small Animal Rotating; Greta Doden, DVM, Exotics and Zoological Medicine; Julie Fifthian, DVM, Small Animal Rotating; Hugo Gonzalez, DVM, Exotics and Zoological; Daneeya Guthrie, DVM, Small Animal Rotating; Hanna Kunzman; DVM, Small Animal Rotating; Elizabeth Larsen, DVM, Equine Surgery & Sports Medicine Specialty; Carley Long, DVM, Equine Medicine and Surgery Rotating; Hannah Maxwell, DVM, Theriogenology; Jamie Ortman, DVM, Emergency Critical Care Specialty; Juliia Rau, DVM, Junior Surgery; Jonna Whetzel, DVM, Emergency Critical Care; Gregory Yoast, DVM, Small Animal Surgery Specialty; Angela Yoon, DVM, Ophthalmology Specialty

***Board Certification in Specialty Area**

Veterinary Pathobiology

Theresa E. Rizzi, DVM, DACVP—Clinical Professor and Department Head

The Department of Veterinary Pathobiology delivers state-of-the-art research, instruction, and diagnostic service for the disciplines of bacteriology, immunology, parasitology, pathology, virology, epidemiology and public health. The Pathology Department is the proud home of the National Center for Veterinary Parasitology, and the academic home of the University's Director of Animal Resource Unit and University Attending Veterinarian, and faculty associated with the Oklahoma Animal Disease Diagnostic Laboratory. Departmental faculty participate in research sponsored by the NIH, USDA and other government-sponsored research units as well as private industry focused on infectious diseases important in animals and people. The department is actively engaged in training the next generation of veterinarians, veterinary specialists, and scientists, publishing basic and applied scientific works and presenting findings at scientific and educational platforms throughout the world.

Residency Programs

Residency Coordinators: Dr. Valerie McElliott, Anatomic Pathology, and Dr. James H. Meinkoth, Clinical Pathology

Residency programs in anatomic and clinical veterinary pathology are offered. Candidates must have a DVM degree or equivalent. The anatomic and clinical pathology residency programs are three years with options to enter the PhD program. The programs are designed for those interested in diagnostic veterinary pathology and board certification by the American College of Veterinary Pathologists. Residency training occurs through the Veterinary Medical Teaching Hospital and through the Oklahoma Animal Disease Diagnostic Laboratory. The program involves extensive diagnostic casework primarily of domestic animals and includes weekly case conferences and seminars. In addition, abundant archived materials are available for the specialty board preparation.

Application Procedure

Usually one new residency training position is available each year in anatomic pathology and one new residency position every 1-2 years in clinical pathology. Open positions are listed at the ACVP website (<https://www.acvp.org/>) and in the "Educational Opportunities" section of the Journal of the American Veterinary Medical Association.

Faculty

Regents Professors and Endowed Chairs: *Anthony W. Confer, DVM, PhD, DACVP (emeritus) and Walter R. Sitlington Endowed Chair; Clinton J. Jones, PhD, Regents Professor and Sitlington Endowed Chair; *Susan Little, DVM, PhD, DAVPC-Parasitology, Regents Professor and Krull/Ewing Endowed Chair

Professors: *James H. Meinkoth, DVM, PhD, DACVP; Mason Reichard, PhD; *Jerry Ritchey, DVM, PhD, DACVP; *Timothy Snider, DVM, PhD, DACVP

Clinical Professor: *Theresa Rizzi, DVM, DACVP

Associate Professors: Tom Oomens, PhD; *Akhilesh Ramachandran, BVSc&AH, PhD, DACV; *Jared Taylor, DVM, MPH, PhD, DACVIM, DACVPM

Clinical Associate Professor: *Asheley Wathen, DVM, MPH, DACLAM

Assistant Professors: *Fernando Vicoso Bauermann, DVM, PhD; *Valerie McElliott, DVM, PhD, DACVP; *Craig Miller, DVM, PhD, DACVP; *Sunil More BVSc & AH, MVSc, PhD; *Jennifer Rudd, DVM, PhD, DACVM; *Ruth C. Scimeca BVSc, MS, PhD, DAVPC-Parasitology; *Giselle Cino, DVM, PhD, DACVP; Mayara Maggioli, DVM, PhD

Clinical Assistant Professor: *Susan E. Fielder, DVM, MS, DACVP; *Brianna Taylor, DVM, MS, DACVP

Associate Research Professor: Edmour Blouin, PhD (emeritus)

Assistant Research Professor: Kelly Harrison, PhD; Jeff Ostler, PhD

Lecturer: Katheryn Duncan, DVM, PhD

Residents: Dah Jiun Fu, DVM; Alys Harshbarger, DVM; Alexa Hunter, DVM; Scott Mitchell, DVM; Stacy Woods, DVM

Graduate Teaching Associates: Patil Basavaraju, BVSc; Sachithra Gunasekara, BS; Megan Lineberry, BS; Jeeviya Murugesan, BVSc; Vanessa Santos, BS; Miruthula Selvan, BVSc; Erin Stayton, DVM; Pabasara Weeraratne, MS; Nishani Wijesekera, BVSc

Graduate Research Associates: Pramila Lamichhane, MS; Mego Terhuja, BVSc, MVSc; Brittanie Peake, BS

***Board Certification in Specialty Area**

Physiological Sciences

*Board Certification in Specialty Area

Martin Furr, DVM, Ph.D., Department Head

The Department of Physiological Sciences at Oklahoma State University contributes substantially to the teaching, research and service components of the College of Veterinary Medicine.

The department currently has 18 tenure/tenure-track, ten adjunct and four research track faculty members, three postdoctoral fellows and approximately 18 graduate students.

Teaching responsibilities within the department include the areas of veterinary morphology, physiology, pharmacology and toxicology, providing professional coursework leading to the DVM degree and graduate coursework leading to the Masters and Doctor of Philosophy degrees. Departmental faculty have a wide range of research interests including neurotoxicology, lung biology, enzymology of drug metabolism, exercise physiology, reproductive physiology, therapeutics, comparative aging, cardiovascular physiology, raptor biology and cetacean biology. Extramural funding in support of research from agencies including NIH, DoD, USDA, American Cancer Society and others totals over \$2 million annually.

Faculty

Martin Furr, PhD—Professor, Department Head and Assistant Dean - Professional Programs

Regents Professors: Lin Liu, BS, PhD (Lundberg-Kienlen Professor of Biomedical Research); Carey N. Pope, PhD (Sitlington Chair in Toxicology)

Professors: Nicholas L. Cross, PhD (emeritus); *Michael S. Davis, DVM, MS, PhD (Oxley Chair in Equine Sports Medicine); Veronique Lacombe, DVM, PhD, Diplomate ACVIM, Diplomate ECEIM; Jerry R. Malayer, PhD; Lara K. Maxwell, DVM, PhD; Charlotte L. Ownby, MS, PhD (emeritus); Ashish Ranjan, BVSc, PhD (Kerr Endowed Chair); Alastair G. Watson, BVSc, PhD (emeritus)

Associate Professors: Jill Akkerman, DVM, PhD; Guangping Chen, MS, PhD; Myron Hinsdale, DVM, PhD; Sudahkar Jha, PS, MS, PhD; James W. Lish, MS, PhD (emeritus); Pamela G. Lovern, BA, PhD; Joseph P. McCann, PhD (emeritus); *Sandra E. Morgan, MS, DVM (emerita); Larry E. Stein, PhD (emeritus)

Assistant Professors: Joshua Butcher, M.S., PhD; Madhan Subramanian, BVSc, PhD; Xufang Deng, BS, MS, PhD

Teaching Associate Professor: Deon van der Merwe, BVSc, MSc, PhD, ERT

Teaching Assistant Professor: Garish Patil, PhD

Assistant Research Professors: Chaoqun Huang, MD, PhD

Research Associate: Yurong Liang, BS, PhD

Research Scientist: Danny Maples, PhD; Akansha Singh, PhD

Post-Doctoral Fellows: Chaitanya Gandikota, PhD; Kishor Vaddadi, PhD;

Graduate Teaching Associates: Raisa Monteiro, BVSc; Bhuvana Plakkot, BVSc, MVSc; Sai Narayan Sankara, BVSc, MVSc; Yemi Semola, MS; Shoroq Shatnawi, BS, MS; Mahesh Sivasubramanian, BVSc

Graduate Research Associates: Kainat Ahmed, BVSc, MVSc; Landon Butler, BS; Quanjin Dang, BS; Matthew Gallman, BS; Mike Gorbet, BS; Sankha Hewawasam, BS; Samuel Jeyasingh, BVSc; Rudy Montayre, BS; Emily Nunan, BS; Bhuvana Plakkot, MVSc; Chakravarthi Rajamohan, BVSc; Matthew Rochowski, BS; Richa Tiwari, BVSc, MBS; Natasha Williams, BVSc, BS; Zhengyu Zhu, BVSc

Staff: Emma Dillsaver, BS; Dallas Karcher, BS; Erin Langford-Loftis, BS; Brittanee Peake, BS; Christopher H. Pivinski, BS; Lana Schler, BS; Jessica Schultz, MS, BS

Degree Programs

Graduate Programs

- Comparative Biomedical Science, MS (p. 3148)
- Comparative Biomedical Science, PhD (p. 3149)

Professional Programs

- Veterinary Medicine, DVM (p. 3150)

Comparative Biomedical Sciences, MS

Requirements for Students Matriculating in or before Academic Year

2022-2023. Learn more about Graduate College Academic Regulation 7.0 (p.).

Total Hours: 30

Code	Title	Hours
Required Courses		
CBSC 5013	Comparative Biomedical Sciences I	3
CBSC 5023	Comparative Biomedical Sciences 2: Pathobiology	3
STAT 5013	Statistics for Experimenters I	3
CBSC 6110	Seminar	2
CBSC 5000	Master's Research and Thesis	6
Hours Subtotal		17
Electives		
Select 13 hours of approved electives		13
Hours Subtotal		13
Total Hours		30

Graduate College Master's Program Requirements

Learn more about Graduate College 2022-2023 Master's Degree Program Requirements (p. 2766). Check the General Graduate College academic regulations for minimal GPA, language proficiency and other general requirements.

Comparative Biomedical Sciences, PhD

Requirements for Students Matriculating in or before Academic Year

2022-2023. Learn more about Graduate College Academic Regulation 7.0 (p.).

Total Hours: 60

Code	Title	Hours
Required Coursework		
CBSC 5013	Comparative Biomedical Sciences I	3
CBSC 5023	Comparative Biomedical Sciences 2: Pathobiology	3
STAT 5013	Statistics for Experimenters I	3
STAT 5083	Statistics for Biomedical Researchers	3
CBSC 6110	Seminar	3
Forty-five hours from:		45
CBSC 6000	PhD Research and Dissertation	
Total Hours		60

Graduate College Doctor of Philosophy (PhD) Requirements

Learn more about Graduate College 2022-2023 Doctor of Philosophy (PhD) Degree Program Requirements (p. 2766). Check the General Graduate College academic regulations for minimal GPA, language proficiency and other general requirements.

Veterinary Medicine, DVM

Total Hours: 165

Year One

Code	Title	Hours
Degree Requirements		
<i>Fall Semester</i>		
VMED 7114	Veterinary Physiology I	4
VMED 7113	Veterinary Physiology II	3
VMED 7123	Veterinary Histology	3
VMED 7144	Gross and Developmental Anatomy	4
VMED 7152	Zootechnology	2
VMED 7162	Orientation to the Veterinary Medical Profession	2
Hours Subtotal		18
<i>Spring Semester</i>		
VMED 7221	Epidemiology and Evidence-Based Medicine	1
VMED 7223	Veterinary Parasitology I	3
VMED 7235	Veterinary Physiology III	5
VMED 7243	Comparative Anatomy	3
VMED 7253	Veterinary Immunology	3
VMED 7264	General Pathology	4
Hours Subtotal		19
Total Hours		37

Year Two

Code	Title	Hours
Degree Requirements		
<i>Fall Semester</i>		
VMED 7311	Introduction to Clinics I	1
VMED 7323	Veterinary Parasitology II	3
VMED 7333	Pharmacology I	3
VMED 7342	Clinical Anatomy	2
VMED 7354	Veterinary Bacteriology and Mycology	4
VMED 7363	Clinical Pathology	3
Select three hours of electives.		3
Hours Subtotal		19
<i>Spring Semester</i>		
VMED 7412	Anesthesiology	2
VMED 7413	Food Safety and Public Health	3
VMED 7432	Pharmacology II	2
VMED 7443	Diagnostic Imaging	3
VMED 7454	Veterinary Virology	4
VMED 7482	Hemolymphatic and Oncology	2
Select four hours of electives.		4
Hours Subtotal		20
Total Hours		39

Year Three

Code	Title	Hours
Degree Requirements		
<i>Fall Semester</i>		
VMED 7502	Ophthalmology	2
VMED 7533	Toxicology	3
VMED 7563	Musculoskeletal Systems	3
VMED 7583	Dermatology & Endocrinology	3
VMED 7674	Theriogenology	4
VMED 7592	Junior Surgery I	2
Select three hours of electives.		3
Hours Subtotal		20
<i>Spring Semester</i>		
VMED 7601	Junior Surgery II	1
VMED 7564	Alimentary System	4
VMED 7612	Clinical Neurology	2
VMED 7614	Cardiopulmonary System	4
VMED 7652	Introduction To Clinics II	2
VMED 7662	Urinary System	2
VMED 7781	Professional Veterinary Medicine	1
Select three hours of electives		3
Hours Subtotal		19
Total Hours		39

Year Four

CORE ROTATIONS

Code	Title	Hours
Rotations - 14 Rotations³		
VCS 7002	Anesthesiology I	2
VCS 7042	Small Animal Primary Care I	2
VCS 7072	Diagnostics I	2
VCS 7082	Equine Medicine I	2
VCS 7142	Externship I	2
VCS 7152	Externship II	2
VCS 7162	Externship III	2
VCS 7222	Food Animal Medicine and Surgery I	2
VCS 7272	Small Animal Emergency and Critical Care I	2
VCS 7372	Radiology I	2
VCS 7392	Small Animal Internal Medicine I	2
VCS 7422	Small Animal Surgery I	2
VCS 7442	Surgical Fundamentals in Shelter Patients I	2
VCS 7912	Grand Rounds	2
14 Rotations		
Total Hours		28

SMALL ANIMAL EMPHASIS

Code	Title	Hours
<i>Emphasis - 4 Rotations¹</i>		
VCS 7052	Small Animal Primary Care II	2
VCS 7402	Small Animal Internal Medicine II	2
VCS 7452	Ultrasound/Clinical Pathology II	2

Select one of the following: 2

VCS 7342	Ophthalmology II	
VCS 7472	Zoological Medicine II	

Hours Subtotal 8

*Electives*¹

Select 7 rotations from the following:

VCS 7000	Clinical Sciences Elective III	
VCS 7012	Anesthesiology III	
VCS 7062	Small Animal Primary Care III	
VCS 7172	Externship IV	
VCS 7182	Externship V	
VCS 7192	Externship VI	
VCS 7582	Externship VII	
VCS 7262	Hospital Based Theriogenology III	
VCS 7282	Small Animal Emergency and Critical Care III	
VCS 7352	Ophthalmology III	
VCS 7362	Professional Development Experience III	
VCS 7412	Small Animal Internal Medicine III	
VCS 7432	Small Animal Surgery III	
VCS 7482	Zoological Medicine III	
VCS 7492	Applied Canine Exercise Physiology Elective III	
VCS 7532	Applied Diagnostic Medicine and Laboratory Investigations III	
VCS 7552	Public Health Practice for Veterinarians III-A	
VCS 7562	Public Health Practice for Veterinarians III-B	
VCS 7572	Advanced Small Animal Ultrasound III	

Hours Subtotal 14

Total Hours 22

MIXED ANIMAL EMPHASIS

Code	Title	Hours
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*Emphasis - 5 Rotations*¹

VCS 7232	Food Animal Medicine and Surgery II	2
VCS 7452	Ultrasound/Clinical Pathology II	2

Select one of the following: 2

VCS 7202	Field Services and Production Medicine II	
VCS 7252	Hospital Based Theriogenology II	
VCS 7312	Large Animal Theriogenology II-A	
VCS 7322	Large Animal Theriogenology II-B	

Select one of the following: 2

VCS 7052	Small Animal Primary Care II	
VCS 7402	Small Animal Internal Medicine II	

Select one of the following: 2

VCS 7342	Ophthalmology II	
VCS 7472	Zoological Medicine II	

Hours Subtotal 10

*Electives*¹

Select 6 rotations from the following:

VCS 7000	Clinical Sciences Elective III	
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VCS 7012	Anesthesiology III	
VCS 7062	Small Animal Primary Care III	
VCS 7102	Equine Medicine III	
VCS 7112	Equine Performance Medicine III	
VCS 7132	Equine Surgery and Sports Medicine III	
VCS 7172	Externship IV	
VCS 7182	Externship V	
VCS 7192	Externship VI	
VCS 7582	Externship VII	
VCS 7212	Field Services and Production Medicine III	
VCS 7242	Food Animal Medicine and Surgery III	
VCS 7262	Hospital Based Theriogenology III	
VCS 7282	Small Animal Emergency and Critical Care III	
VCS 7292	Large Animal Bovine Theriogenology III	
VCS 7302	Large Animal Equine Theriogenology III	
VCS 7332	Large Animal Theriogenology III	
VCS 7352	Ophthalmology III	
VCS 7362	Professional Development Experience III	
VCS 7412	Small Animal Internal Medicine III	
VCS 7432	Small Animal Surgery III	
VCS 7482	Zoological Medicine III	
VCS 7492	Applied Canine Exercise Physiology Elective III	
VCS 7532	Applied Diagnostic Medicine and Laboratory Investigations III	
VCS 7552	Public Health Practice for Veterinarians III-A	
VCS 7562	Public Health Practice for Veterinarians III-B	
VCS 7572	Advanced Small Animal Ultrasound III	

Hours Subtotal 12

Total Hours 22

EQUINE EMPHASIS

Code	Title	Hours
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*Emphasis - 4 Rotations*¹

VCS 7092	Equine Medicine II	2
VCS 7122	Equine Surgery and Sports Medicine II	2
VCS 7312	Large Animal Theriogenology II-A	2
VCS 7322	Large Animal Theriogenology II-B	2

Hours Subtotal 8

*Electives*¹

Select 7 rotations from the following:

VCS 7000	Clinical Sciences Elective III	
VCS 7012	Anesthesiology III	
VCS 7102	Equine Medicine III	
VCS 7112	Equine Performance Medicine III	
VCS 7132	Equine Surgery and Sports Medicine III	
VCS 7172	Externship IV	
VCS 7182	Externship V	
VCS 7192	Externship VI	
VCS 7582	Externship VII	

VCS 7212	Field Services and Production Medicine III	
VCS 7242	Food Animal Medicine and Surgery III	
VCS 7262	Hospital Based Theriogenology III	
VCS 7302	Large Animal Equine Theriogenology III	
VCS 7332	Large Animal Theriogenology III	
VCS 7352	Ophthalmology III	
VCS 7362	Professional Development Experience III	
VCS 7462	Ultrasound/Clinical Pathology III	
VCS 7482	Zoological Medicine III	
VCS 7492	Applied Canine Exercise Physiology Elective III	
VCS 7532	Applied Diagnostic Medicine and Laboratory Investigations III	
VCS 7552	Public Health Practice for Veterinarians III- A	
VCS 7562	Public Health Practice for Veterinarians III - B	
VCS 7572	Advanced Small Animal Ultrasound III	
Hours Subtotal		14
Total Hours		22

1

Program meets all the educational requirements for eligibility for DVM licensure in all 50 states.

For additional requirements, please refer to the College of Veterinary Medicine page (p. 3140) in the Catalog.