

**Tuskegee University
College of Veterinary Medicine**

Doctoral Degree (PhD) in Interdisciplinary Pathobiology (IDPB)

Contact Information:

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Degree Offered: Doctoral Degree (PhD) in Interdisciplinary Pathobiology (IDPB)

The Interdisciplinary Pathobiology graduate program at the College of Veterinary Medicine produces competent academicians and investigators in the areas of food safety, microbiology, infectious diseases, cancer cell biology, cancer, reproductive biology, developmental biology and pathology, risk analysis/epidemiology, nanobiotechnology, toxicology, and other areas of faculty expertise.

Admission Requirements:

- Applicants are expected to have completed the M.S. degree or professional degrees (DVM, MD, DDS, MPH, etc.) from an accredited college or university. Other interested applicants will also be considered on case-by-case basis to assess their preparation for an advanced degree.
- Cumulative GPA of 3.0 or better
- Completed Online Application and Application Fee
- Competitive GRE scores
- Personal Statement
- Three (3) Recommendation Letters
- Resume or Curriculum Vitae
- Official Transcripts from all colleges/universities (International Students must have transcripts validated through World Education Services – WES or ETS)
- TOEFL (International students only; waived if the language of instruction is English)
- Affidavit of Support and Bank Statement (International students only)
- Virtual interviews may be conducted before admission decisions are made.

Graduation Requirements:

- Core Courses: 16 credit hours
- Elective Courses: 14 credit hours
- **Total Course Work: 30 credit hours**
- **Total Research/Dissertation: 30 credit hours**
- **Admission** to Candidacy
- **Passing** of the Final Oral Examination
- Submission of a **Final Copy of the Dissertation** approved by the major advisor and endorsed by the student Graduate Advisory Committee

- Publication of **at least one first-author peer-reviewed** manuscript
- Presentation of **at least one Abstract or Poster** at a regional or national conference
- Student Advisory Committee determines if a student Dissertation work is **qualitatively and quantitatively satisfactory** enough for the student to schedule final public defense and oral examination

Advisory Committee:

During the second semester of his/her study in the IDPB, PhD program, the student and his/her Major Professor must form an Advisory Committee consisting of a minimum of four members including the Major Professor. Inclusion of 1-2 external faculty with expertise in the subject area is highly encouraged. The Advisory Committee shall also serve as the Examination Committee.

Admission to Candidacy:

Admission to Candidacy for students who are enrolled in the PhD in Interdisciplinary Pathobiology will require the following:

1. Completion of the minimum course credit hours required for the PhD program (a minimum of 15 credits for those starting with a Master's degree, or 30 course credits in all other cases).
2. Successful public oral defense of the PhD research proposal. The Advisory Committee will meet after the proposal defense presentation to determine if the student may be admitted to the Candidacy or need to defend the proposal again. Students who fail the qualifying examination after two attempts may apply for a master's degree in any of the established programs at Tuskegee University. In such cases, the student will have to meet the admission and other requirements of the master's degree Graduate Program.
3. The PhD research proposal will be written and submitted to the Advisory Committee in the form of a standard Research Grant proposal. This writing exercise will serve students as one way to learn how to write a grant proposal, and critically design experiments. Optionally, the written proposal may be submitted to an external funding opportunity for fellowship.

Seminars:

A student pursuing the PhD in Interdisciplinary Pathobiology (IDPB) must present **at least two seminars**. Seminar courses introduce practical examples of proper conduct of research, issues with copyright violation, plagiarism, interpretation of published work among other academic requirements including discussions on basic research methods, and a review of current research topics. Oral presentations are required.

Rotations:

IDPB PhD students, in consultation with the major advisor/s, will have the options to rotate among research labs. The options will be:

- Student knows well what to study/research, and elects not to rotate among the labs
- Student has identified their research lab, but elects to rotate in at least one other lab
- Student has not decided what research to pursue, and rotates in 2 or 3 labs before making decision

IDPB students may elect, in consultation with the major advisor/s, to be teaching or laboratory assistants in TUCVM for 1-2 semesters over the period of their graduate studies. Students will not be paid for these assistantships, but the experiences will be valuable for their professional development.

Dissertation:

- The final draft of the dissertation must be filed with the student's Advisory Committee at least 30 days before the date listed in the university calendar for final copies to be submitted during the semester in which the student expects to graduate. The student must present to the Dean of Graduate Programs a "TU GRAD-009: [Preliminary Approval of Thesis/Dissertation](#)" bearing the signature of the Major Professor/Advisor **before** the final oral examination may be scheduled and before copies of the dissertation are distributed to members of the Examining Committee.
- After the "Preliminary Approval" form has been signed, it should be submitted to the Dean of Graduate School before the final examination is scheduled and before the final draft of the dissertation is prepared for final approval. Approval of the dissertation in its final form rests with the Examining Committee.
- Acceptable **Dissertation formats** include the compilation of both published and unpublished work in standard sequence of written sections in APA style.
- Final copies of the Dissertation are uploaded to **ProQuest** following instructions by the Graduate School (<https://drive.google.com/file/d/1CN34QF-39CDVQ6gD-ZcM05Q4LyV2Weja/view>)

Research and Dissertation (IDPB-0800):

- Credit Hour Requirement: Graduation from the Interdisciplinary Pathobiology (IDPB) PhD program requires completion of 30 credit hours of research under IDPB-0800 (Research & Dissertation) or an equivalent course approved by the student's major advisor.
- Course Registration: Students may register for 1–12 credit hours per semester under IDPB-0800. Enrollment is restricted to students in the IDPB program actively engaged in dissertation research.
- Supervision and Evaluation: Research must be conducted under the supervision of the student's major professor. At the end of each semester, the major professor will assign a grade (A, B, C, D, or F) based on the student's research performance.
- Incomplete Grades ('I'):
 - A grade of 'I' (Incomplete) may be assigned when the student has not completed the research work consistent with the registered credit hours or is unable to finish the research before grades are due.
 - The major professor/advisor must notify the student if an 'I' is assigned.
 - An "I" grade may be assigned for research and changed to an appropriate letter grade (A-D) **only after** the student defends his/her dissertation.

Additional information is available in **TUCVM Graduate Program Supplement Manual** and the **Tuskegee University Graduate Handbook**.

Courses and Electives for the IDPB PhD Program:

Required Courses

Course	Semester	Course Number	Credit	Coordinator/s
Bio Statistics I	Fall	EVSC-0500	3	Gautam/Chen/multiple
Bio Statistics II/Biomed Stats	Spring	EVSC-0501/ MBIO 0660	3	Gautam/Chen//Lloyd/Oranye
Integrative Biochemistry I	Fall	IBSC-0603	4	Alexander/Jaynes
Molecular and Cell Biology/Integrative Biochem II	Spring/Fall	IBSC-0604 (Spring) or -0605 (Fall)	4	Alexander/Jaynes/Bradford
Graduate Seminar I	Fall	MBIO-0600	1	Samuel
Graduate Seminar II	Spring	IDPB-0602	1	Samuel
Ph.D. Research/Dissertation	All Semesters	IDPB-0800	30	Major Advisor/s
Candidate for Degree	After Defense	IBSC-0754	R	

List of Suggested Elective Courses

Course	Semester	Course Number	Credits	Coordinator
Int Mol, Cell, Org Sys Eco Biosc	Fall	IBSC-0605	4	Alexander/Davidson
Int Mol Cell Org Sys Pop Eco	Spring	IBSC-0606	4	Alexander/Bradford
Advanced Epidemiology	Spring	MBIO-0661	3	Dibaba/
Proposal Writing and Grant Management	Fall	MSPH-0700-01	2	Inquire/Check Catalog
Introduction to Bioinformatics	Fall	IBSC-0540	4	Inquire/Check Catalog
Special Problems in Biomedical Sciences	All Semesters	ANAT-0506	2-6	Puri/Wirtu/et al.
Special Problems in Toxicology	All Semesters	PHSI-523A	2	Lanell Ogden
Research in Pathology or Parasitology	All Semesters	PATH-0700	1-5	Multiple
Special Problems in Clinical Pathology	All Semesters	PATH-0631	2	Etzioni et al.
Integr. Biosc. Lit Review	Fall (inquire)	IBSC-0710	2	Alexander/Martinez
Special Problems in Microbiology	All Semesters	MBIO-0521	2	Woubit/ Teshome/Nashar
Special Problems in Vet. Pathology	All Semesters	PATH-0630	3	Multiple/Casimir/Philips/et al.
Special Problems in Epidemiology	All Semesters	MBIO-0666	3	Asseged B Dibaba
Research in Pathobiology/Special Problems	All Semesters	MBIO-0700	1-6	Samuel/multiple
Advanced Immunology	All Semesters	MBIO-0523	2	Nashar/Samuel/Faraj
Special Problems / Topics	All Semesters	IDPB-0603	2-4	Multiple
Advanced Virology	inquire	IDPB-0601	2	Nashar
Multivariate Methods/Analysis	Fall	MSPH-625	3	Dibaba/Public Health faculty
Risk Analysis and Modeling	inquire	PATH-0669	3	Public Health faculty
Emerging Zoonoses and Foreign Animal Diseases	Spring/inquire	VMED-0872	2	Samuel/Abebe
Applied Stat and Machine Learning	Spring	AGSC-0501	3	Rui Chen (CAENS)
Food Safety	Spring	MBIO-0518	3	Ehsan Abdalla
Machine Learning & Data Mining	Fall	ISCS-0535	3	CBIS please check/inquire
Integrative Lab Techniques	Fall	IBSC-0650	6	Osagie Idehen
Scientific Communications	Fall	IBSC-0611	2	Inquire/Check Catalog

PhD Graduate Students may choose *Electives* from
 Doctor of Veterinary Medicine (DVM) Professional Program Curriculum (**only Years 1-2 courses**)

PLEASE CONSULT WITH YOUR ADVISOR AND CONTACT COURSE FACULTY FOR REQUIREMENTS or PERMISSION TO TAKE ANY ELECTIVE AMONG THE FOLLOWING COURSES

Year 1: Veterinary Curriculum Courses

Semester 1	FALL	Credit Hours
VMED 803	Veterinary Physiology I	4

Semester 2	SPRING	Credit Hours
VMED 808A	Veterinary Physiology II	4
VMED 809A	Veterinary Immunology	2
VMED 810A	Public Health and Evidence-Based Epidemiology	3

Year 2: Veterinary Curriculum Courses

Semester 3	FALL	Credit Hours
VMED 814	Veterinary Pathology I	4
VMED 815	Clinical Pathology	3
VMED 816A	Introduction to Pharmacology	2
VMED 817	Clinical Toxicology	2
VMED 818	Veterinary Nutrition	1
VMED 819A	Bacteriology, Mycology & Clinical Microbiology	3
VMED 820A	Parasitology	3

Semester 4	SPRING	Credit Hours
VMED 823A	Endocrinology	2
VMED 824	Veterinary Pathology II	4
VMED 825A	Virology and Clinical Microbiology II	3
VMED 827	Principles of Anesthesia and Surgery	2
VMED 828A	Clinical Pharmacology	3