

Assistant Professor of Entomology – Neurobiology
Department of Entomology, Texas A&M AgriLife

Position Title: Assistant Professor of Entomology

Appointment: The Department of Entomology, College of Agriculture and Life Sciences at Texas A&M University, invites applicants for one full-time, tenure-track Assistant Professor position with a nine-month academic appointment specializing in Arthropod Neurobiology, located on the Texas A&M campus in College Station, TX. Candidates should have a strong record of scholarly achievement, including peer-reviewed journal publications, demonstrated success in securing grants, or a strong potential to secure extramural funding. This position has duties in Research, Teaching, and Service with approximately a 60%, 30%, and 10% distribution of effort, respectively. However, the appointment may change in accordance with Departmental needs. The anticipated start date is August 01, 2026.

Qualifications: Ph.D. or equivalent in Neuroscience, Biology, Entomology, or a closely related discipline required, or candidates who have completed all Ph.D. requirements except the dissertation will be considered, provided they demonstrate clear progress toward completion of the Ph.D.

Preferred qualifications: Demonstrated record of high-impact, peer-reviewed research articles. Evidence of ability (or strong potential) to secure external research funding. Excellent written and oral communication skills. Experience or clear potential for effective teaching and mentoring of graduate and undergraduate students. Candidates should have hands-on research experience in arthropod neurobiology (e.g., electrophysiology, imaging, neurogenetics) and an interest in applying neurobiological approaches to agricultural, ecological, or public health problems. Postdoctoral experience in a subdiscipline of neurobiology is highly preferred. The successful candidate will demonstrate both technical expertise and creativity in developing an independent, externally funded research program.

Justification:

Ticks are blood-feeding ectoparasites that attack livestock, wildlife, humans, and companion animals. Ticks are active year-round in Texas depending on species and developmental stage, and they are vectors of a broad range of pathogens capable of producing clinical diseases. Heavy tick infestations are known to negatively impact animal growth, productivity, reproduction, and wellbeing of livestock, companion animals, and wildlife. Ticks and tick-borne diseases threaten the biosecurity and economic sustainability of ranching enterprises. Texas ranks first among states with the largest inventory of cattle and calves (12.5M head in 2022), having an estimated value of \$13.8 billion and the largest annual economic impact of all agricultural commodities in Texas. Native and exotic hoof stock are complimentary economic components of many ranching operations. Deer breeding and hunting enterprises in Texas are estimated to generate \$652 million in annual economic activity. Interactions of cattle and wildlife on Texas landscapes create challenges for development and implementation of effective integrated tick management systems. Ten of 52 known species of ticks in Texas are annual parasites of cattle and wildlife.

Two tick species are of critical importance to the cattle industry of Texas and the U.S. southern region. Cattle fever ticks, *Rhipicephalus (Boophilus) microplus*, and *R. (B.) annulatus*, are vectors of two pathogens causing bovine babesiosis, collectively known as Texas cattle fever, that is highly fatal in naïve cattle. Once found throughout the southern region, cattle fever ticks and Texas cattle fever were eliminated by the mid-20th century through state-federal eradication programs. Both ticks and pathogens remain in Mexico and pose

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constant threats of reintroduction to Texas. Cattle fever tick incursions and outbreaks into Texas are becoming more frequent and difficult to eliminate due to wildlife involvement, changes in land use, climate oscillations in wet-dry periods, brush invasion, and human interactions. A single tick outbreak in Live Oak County resulted in more than 2,400 quarantined premises in 67 counties with trace out investigations resulting in almost 1.2M acres outside the permanent quarantine zone along the Texas/Mexico border (additional 184,602 acres). Substantial portions of Willacy and Cameron Counties are presently under quarantine and involve complications with nilgai antelope and white-tailed deer as alternate hosts. Without effective anti-babesia vaccines or drugs for treating infection, disease prevention is focused on elimination of cattle fever ticks. Cattle carrying *Babesia* that are moved from Mexico to Texas feed lots pose no threat if tick vectors are absent. Texas is the entry point of cattle fever ticks into the U.S. and the goal is to prevent re-establishment of fever ticks across the southern region where there are more than 400,000 cattle producers at risk. This region produces the stock for more than 1/3 of all U.S.-fed beef.

On the horizon, is an expansion of the Asian longhorned tick, *Haemaphysalis longicornis*, into Texas. This species was discovered on a New Jersey sheep farm in 2017 and has spread to 20 states. Species distribution modeling indicates that half of Texas has climate supportive of this tick. Parthenogenic reproduction enables large populations to be produced quickly. Cattle are directly impacted by heavy tick burden and transmission of *Theileria orientalis* Ikeda.

The needs and opportunities to discover, develop and implement new technologies, tactics and strategies for tick surveillance and suppression are great. These include, but are not limited to improvements to tick surveillance, new tick control tactics, integration of complimentary measures for development, and implementation of integrated systems for tick suppression.

General Duties and Responsibilities: The incumbent faculty member will have primary responsibility for developing an internationally recognized and extramurally funded research program in livestock Neurobiology that elucidates new discoveries and methodologies that have significant positive impacts on the scientific discipline with the ultimate goal of providing novel control methods for ticks and the pathogens they transmit. Secondly, the successful candidate may develop research programs in support of topics related to medical and wildlife Neurobiology and field crop mite pest management. The incumbent will be expected to develop strong ties with other faculty at Texas A&M, particularly with colleagues in the College of Veterinary Medicine and Biomedical Sciences, at other institutions of higher education in Texas, USDA laboratories working on ticks and tick-borne diseases, and various state agencies and commissions who are tasked with monitoring ticks and tick-borne diseases.

The individual selected is expected to work closely with faculty colleagues in AgriLife Extension who have statewide responsibilities regarding livestock insects and other arthropods. This close affiliation with AgriLife Extension and AgriLife Research faculty in Entomology and with faculty in allied departments in the College of Agriculture and Life Sciences (Animal Science, Rangeland, Wildlife and Fisheries, Ecology and Conservation Biology), the College of Veterinary Medicine and Biomedical Sciences, and with the Health Science Center in the case of tick-borne human pathogens is envisioned to expand the research opportunities for the successful candidate. The candidate is expected to engage in development, testing, demonstration, and implementation of new technologies supporting integrated approaches to tick management. There are additional state agencies and federal labs that will need to be engaged with the research program of the candidate for tick species that are highly regulated and for the adoption of new methods to use in support of the state-federal cattle fever tick eradication program.

With regard to classroom teaching, there is currently a graduate course, *Neurobiology*, ENTO 617, 4cr, offered on an alternate year basis that we expect the incumbent to teach. Additionally, teaching an annual undergraduate course in Medical and/or Veterinary Entomology is expected. A typical teaching appointment in the Department of Entomology is teaching at least one 3-credit undergraduate course each year and one graduate level course offered on an alternate year basis. Assignment of courses is done by the Department Head in consultation with the Associate Department Head for Academic Programs. The Department offers two baccalaureate degrees, one in Entomology (ENTO) and one in Forensic and Investigative Sciences (FIVS). Graduate degrees include M.S. and Ph.D. programs in Entomology and individual faculty may be affiliated with university-wide interdisciplinary degree programs in genetics, neurobiology, biotechnology, and ecology & evolutionary biology, etc. Teaching also involves mentoring of undergraduate researchers, M.S. and Ph.D. students, and post-docs, as appropriate, and is expected of all faculty.

Resources: Texas A&M University is a public, land-grant institution with high-quality academic units conducting research in critical areas impacting Texans. The successful candidate will be offered a competitive salary, startup package, and laboratory space, as well as access to facilities associated with Entomology, Texas A&M AgriLife Research, and the College of Agriculture and Life Sciences. The candidate will have opportunities to collaborate with a broad range of TAMU System researchers and Extension members around the state. A generous benefits package accompanies all faculty positions with respect to access to health care, sick leave, and retirement benefits (see: <http://employees.tamu.edu/benefits/>).

A 1,700 sq. ft. Entomology Tick Laboratory located within the Veterinary Medical Research Park is a shared facility primarily for tick rearing and colony maintenance using livestock and poultry species under IACUC approved AUPs. It provides wet and dry-use spaces, an animal room for tick rearing with 6-elevated animal stalls, feed storage, a tick colony room, freezer storage, and office space for staff and students. The Entomology Tick Lab also has outside paddocks and facilities for handling cattle and other large animals.

Service and core research facilities are available through Texas A&M University <https://vpr.tamu.edu/research-resources/core-facilities/> and through Texas A&M AgriLife Research <https://agriliferesearch.tamu.edu/research-facilities-and-service-centers/>. Texas A&M also has a Global Health Research Complex with capability for animal biosafety level 3 and an arthropod containment level 3 insectary.

Administrative Relationship: Supervision will be provided by the Department Head of Entomology and the Vice Chancellor and Dean of Agriculture and Life Sciences. The incumbent faculty member shall exhibit collegiality to all faculty, staff, students, clientele groups, and local administrators. Additionally, the candidate is expected to cooperate and collaborate with faculty (independent of affiliation) as appropriate to the successful execution of their general duties and responsibilities and in support of the Department of Entomology mission and goals.

Application: Applications will only be accepted through *Interfolio* <https://apply.interfolio.com/176536>. Applicants must submit: (1) a cover letter of interest, (2) curriculum vitae, (3) a personal statement to include philosophy and plans for research, teaching, and service (up to six pages total), and (4) contact information for three professional references (to be contacted at a later stage). Please provide a complete mailing address, email and phone number, and a brief statement of how each referee knows the candidate. Packages should be submitted by November 20, 2024. Review of applications will begin after this date and continue until the position is filled. For questions regarding this position, email inquiries to the attention of Dr. Anjel Helms, Search Committee Chair, Department of Entomology via Teresa Gold (teresa.gold@ag.tamu.edu).

Visit <http://entomology.tamu.edu> for more information about the department.

Texas A&M University is an Equal Opportunity/Affirmative Action/Veterans/Disability Employer committed to diversity. Texas A&M University is aware that attracting and retaining exceptional faculty often depends on meeting the needs of two careers and having policies that contribute to work-life balance. For more information, visit <https://employees.tamu.edu/ocrm/eeo>