Vector-borne disease reading group (Biol 7800)

Location: Zooooooooom

Time:

Instructor: Dr. Tad Dallas (tadallas@lsu.edu)

Office: A343 Life Sciences

Course Overview

This course is a graduate seminar focused on vector-borne disease, largely considering viral pathogens vectored by mosquitos. The plan below is subject to change and dependent on the interests of those enrolled in the course. However, the main goal is to introduce students to the wide breadth of things which influence vector-borne disease across host individuals, communities, and entire landscapes.

Course Goals

- Develop an understanding of terms surrounding vector-borne disease and disease in general (e.g., vectorial capacity)
- Acknowledge the different scales and filters of viral emergence (spatial resolution and scale) and infection (from individual to population)
- Gain experience reading and synthesizing primary literature
- Be able to explore and think critically about the congruence between models and reality

Disability services

My goal is to help you learn. Students who have any difficulty (either permanent or temporary) that might affect their ability to perform in class can reach out to the LSU Disability Services staff.

More information on registering a disability is available at LSU Disability Services, located at 124 Johnston Hall. Contact the Center by telephone at 225-578-5919 or via email at `disability@lsu.edu`.

Grading

Your grade is based largley on your participation in discussion, as well as your leadership of 2-3 weeks of discussion. Each week will be led by two discussion leaders, who will facilitate the exploration of the material and provide context and examples where appropriate.

Schedule

Week	Topic	Paper DOI
1	Vector-borne disease model intro	10.1098/rsfs.2019.0047
2	Vector-virus prediction	10.7554/eLife.22053 & 10.1002/ecs2.3157
3	Reservoir host prediction and competence	10.1016/j.tree.2020.08.014
4	Viral emergence	10.1016/j.pt.2017.12.004 & 10.1089/vbz.2018.2432
5	Spatial disease prediction	10.1002/ecs2.3157
6	Scaling of host competence	10.1016/j.pt.2018.12.002
7	Thermal performance curves	10.1111/ele.13335
8	Individual variation	10.1086/701169 & 10.3389/fevo.2020.00189
9	Impact of land use	10.1016/j.baae.2017.09.012
10	Impact of climate	10.1017/s0022172400027108
11	Climate change	10.1093/icb/icw049
12	Host viremia/vector susceptibility	10.1093/jmedent/43.3.623
13	Host phylogenetic effects	10.1098/rstb.2019.0296
14	Genetics of host resistance	10.1016/j.pt.2018.04.011
15	flex week/student ideas	–