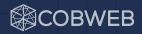
COBWEB

4

Complexity and Organized Behaviour Within Environmental Bounds



What is COBWEB?



The COBWEB program : gives students the opportunity to conduct their own research projects or assist with software development and the opportunity to work with other high school and undergraduate students.



Complexity and Organized Behaviour Within Environmental Bounds

The COBWEB system : COBWEB is an agent-based simulation model, meaning that the actions of each individual member of a population or component of a system can be represented in the model. Each member of the population can learn, and populations/systems can evolve novel strategies over time.



COBWEB's Pillars



COBWEB focuses on four main pillars:

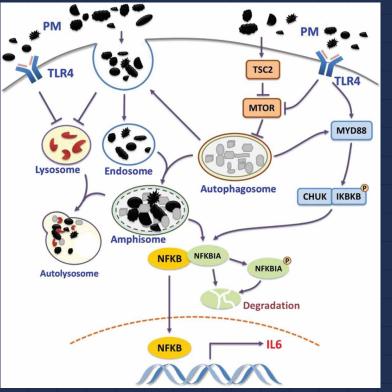
- **1 PROJECTS** : we are here to help translate your ideas and interests into a research project(s).
- **2 EVENTS** : we hope to plan research-related events/conferences on and off-campus.
- **OUTREACH** : after completing your potential project, we hope to provide opportunities to share your work with other students. COBWEB will also provide you opportunities to assist in the training of other students, during a workshop or one-on-one in the lab or in our help sessions.
- LEADERSHIP : COBWEB provides all members with an opportunity to take a leadership role in research or in other areas of the program.

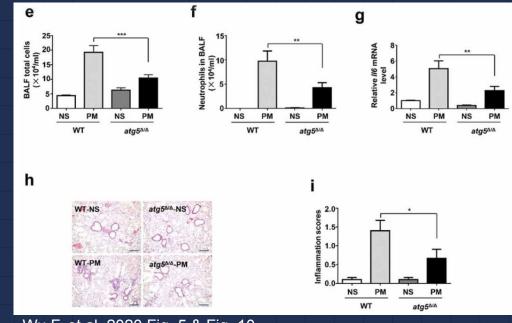


COBWEB Model Showcase



Particulate Matter Exposure Dysregulates Macroautophagy Pathway and Causes Airway Inflammation

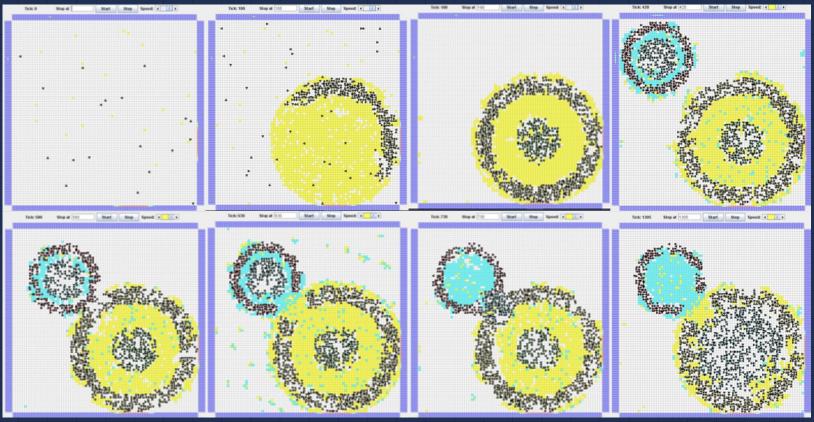




Wu F. et al. 2020 Fig. 5 & Fig. 10



COBWEB Simulation of Macroautophagy





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