

University of Groningen

In the heat of the moment

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PROPOSITIONS

Accompanying the thesis

In the heat of the moment

How *Drosophila melanogaster's* response to temperature is modulated by sensory systems, social environment, development, and cognition

1. The interaction of various thermosensory neurons, including *TrpA1* and *Gr28b(D)*, control the response of *Drosophila* to increasing temperatures in a manner that resembles basic enzyme kinetics (this thesis).
2. *Drosophila* species from different geographic origins show different thermal performance curves (this thesis).
3. *Drosophila* possesses a sexually dimorphic response to thermal stress determined, at least partially, by a fly's social context: grouped males and masculinized females increase their activity, while females and feminized males behave similarly to single flies (this thesis).
4. The mechanosensory interactions with other females are a relevant component of female flies' response to thermal stress. Flies seek each other even when their touch sensation has been eliminated (this thesis).
5. Flies' social experience during development and testing affect overall locomotor performance, including speed and characteristics of encounters at different temperatures (this thesis).
6. Although offspring's environmental temperature is the main contributor to adult performance, the maternal environment causes subtle differences most likely linked to carry over effects (this thesis).
7. Flies adjust their behaviour to better respond to predictable changes in temperature and reduce their exposure to high temperatures. However, they do not seem to associate temporal cues related to the changes to coordinate their reaction (this thesis).
8. Although differences exist, let us never forget that “men are from Earth, women are from Earth, (and we must) deal with it.” George Carlin
9. "It is unavoidable for a fly researcher to bring work home in the summer." R.J. Moratore
10. "Research is what I'm doing when I don't know what I'm doing." Wernher Von Braun

- Andrea Soto Padilla