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**Title:** Surviving embryogenesis : the extraembryonic serosa protects the insect egg against desiccation and infection

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Thesis:

**Surviving embryogenesis:**

The extraembryonic serosa protects the insect egg against desiccation and infection.

# Propositions

by Chris Jacobs

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1. Without a desiccation-proof egg, insects would have been less successful in terrestrial habitats (chapter 2).
2. The same processes affecting cuticular properties in adult insects also affect how desiccation-proof the insect egg is (chapter 3).
3. The *Tribolium castaneum* egg is just as capable as the adult beetle of inducing immune genes (chapter 4).
4. The serosal epithelium of *Tribolium castaneum* provides an excellent model for studying epithelial immunity (chapter 5).
5. The ability to induce an immune response in the serosal epithelium is costly and is obtained at the expense of developmental speed (chapter 6).
6. For a better understanding of the evolutionary forces driving diversification in immune responses, many more species need to be investigated (in terms not only of their immune responses, but also of ecology that drove the evolution of those responses).
7. The community of researchers studying the evolution of immunity should make a list of high priority species, covering diverse phyla, in order to focus their efforts on solving outstanding problems efficiently.
8. To avoid confusion, scientists should take better care when naming genes.
9. Nobody should be allowed to work on the same organism for his or her entire career.
10. Science communication should become a standard part of the Ph.D. curriculum.