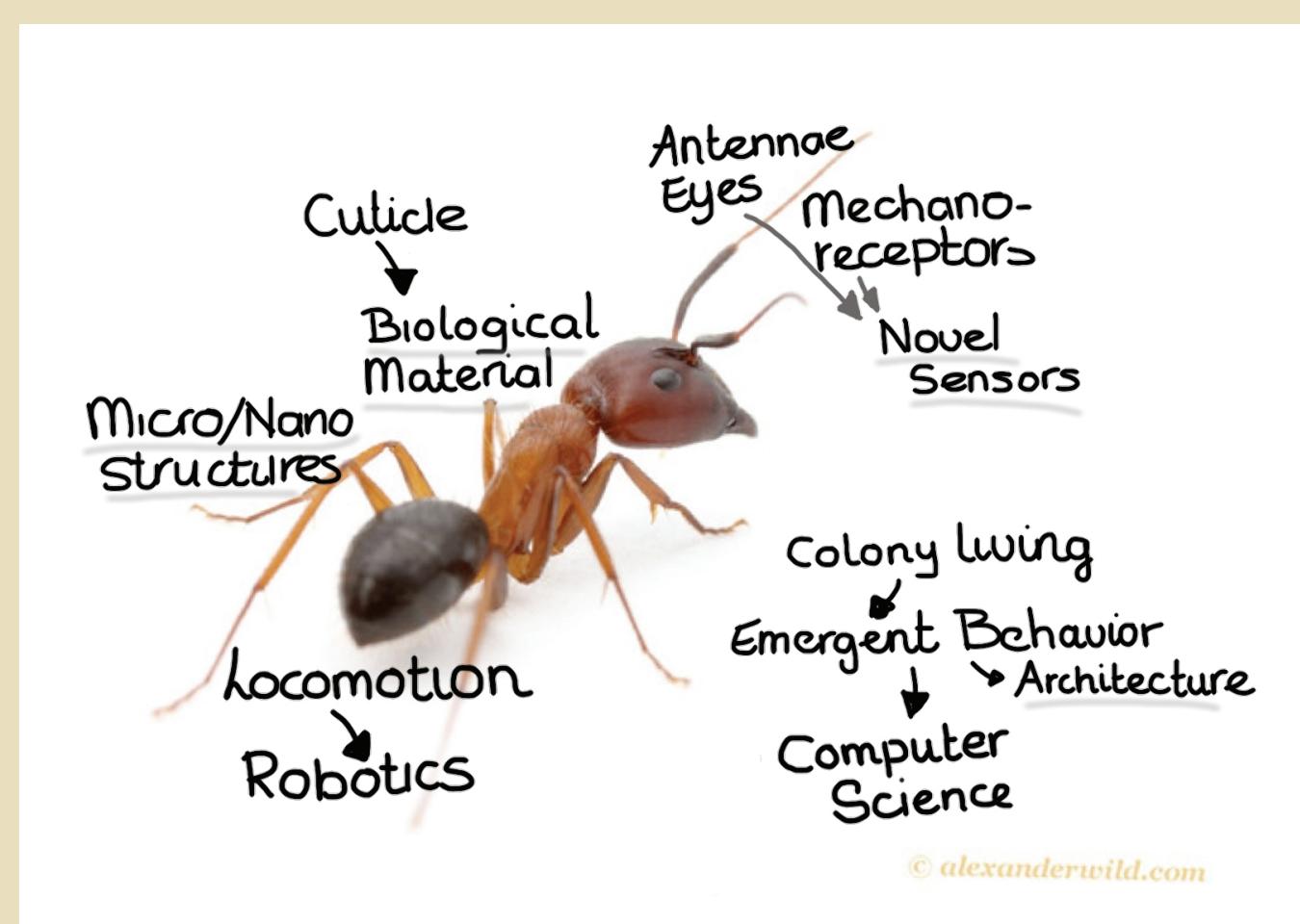


Bioinspiration

For the last 5 years I have been developing modules and courses on **BIOINSPIRATION** (also called biomimicry) and often I refer to insects in these courses.

Bioinspiration = innovation through imitation of nature & interdisciplinary collaborations.

Insects lend themselves very well to the topic of bioinspiration. Just consider an ant:



To support these teaching activities I started a blog in February 2013 about insect-inspired technology, entitled:

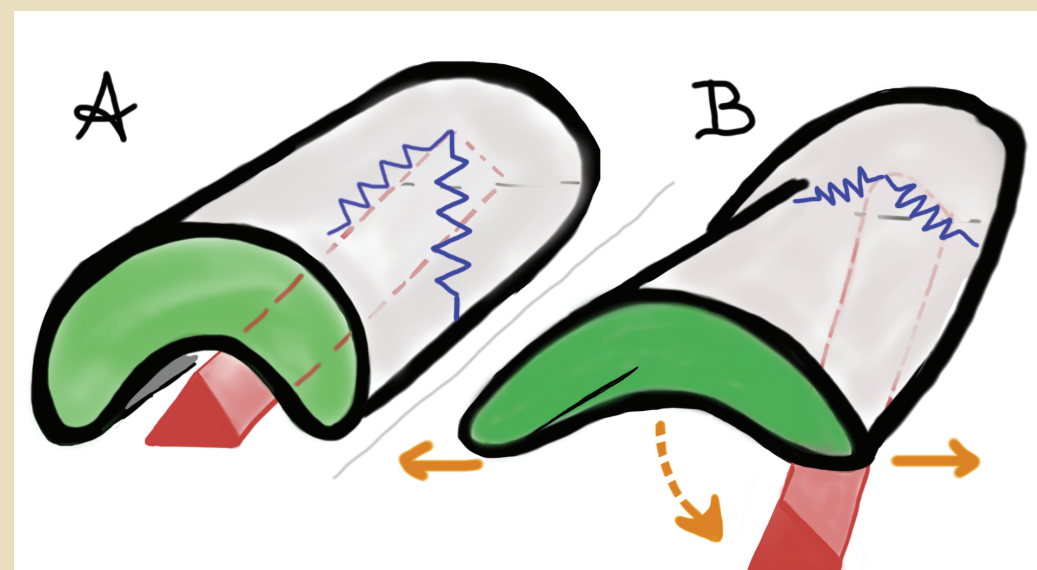
“Insects Did It First. Can Engineers Do better?”

Examples of blog-posts

1. Why/How to teach students who are not entomologists about insects.

2. Jump! Go Ahead, Jump, Little Springtail - about the jumping-mechanism found in Collembola.

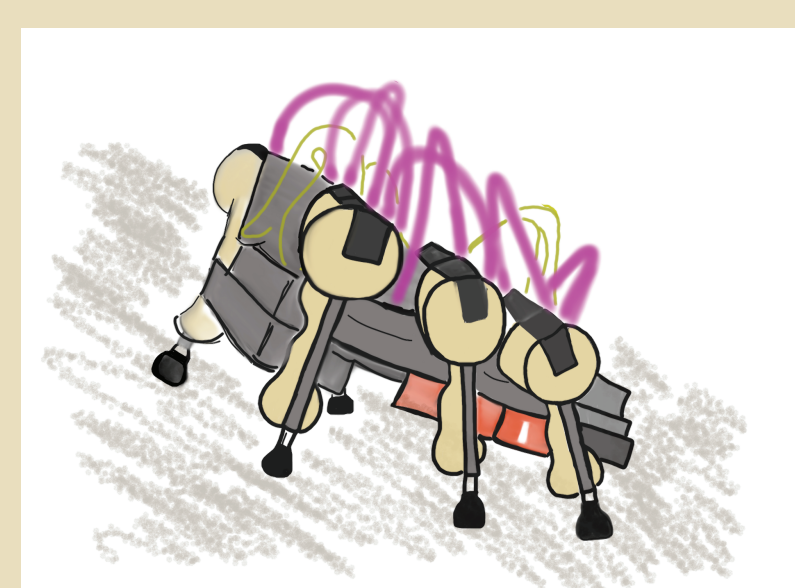
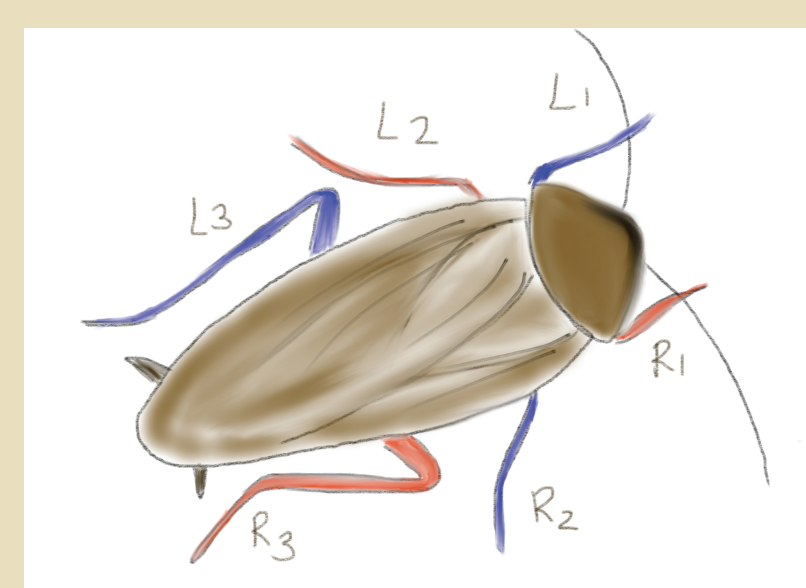
Art work for Collembola jumping mechanism post



3. Going microtubular - about what we can learn from the insect respiratory system for advanced microfluidics design.

4. The termite mound: A not-quite-true popular bioinspiration story - about how the Eastgate Building in Harare is based on incorrect biology.

5. The Dawn of the Coprophages - a history of insect-inspired robots.



Art work for bioinspired robots post

Insects Did It First

Can Engineers Do It Better?

Why blog as an entomologist?

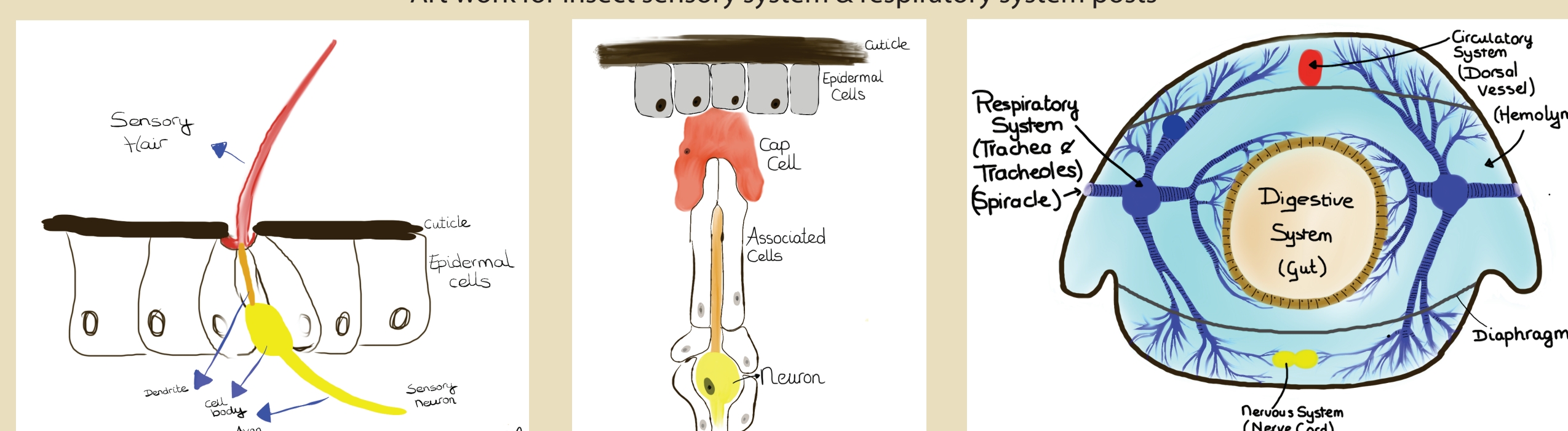
Using this particular blog as an example I came up with various reasons. Some of these reasons are specific to my situation as a research scientist and lecturer at a major research university.

1. **Promote insects to non-entomologists.** Since insects are so diverse and occupy many different niches they have many adaptations that can inspire innovative technologies, and thus make the worthwhile study-animals for non-entomologists.

2. **Promote engineering/technology to biologists.** Fruitful collaborations can come from engineers and biologists working together on basic scientific questions but also to help develop innovative technologies.

3. **Create course content** for Engineering and Biology courses on Bioinspiration, Insect Physiology Course, Bioinspiration Outreach Modules for Middle and High Schools, and soon for a Bioinspiration MOOC.

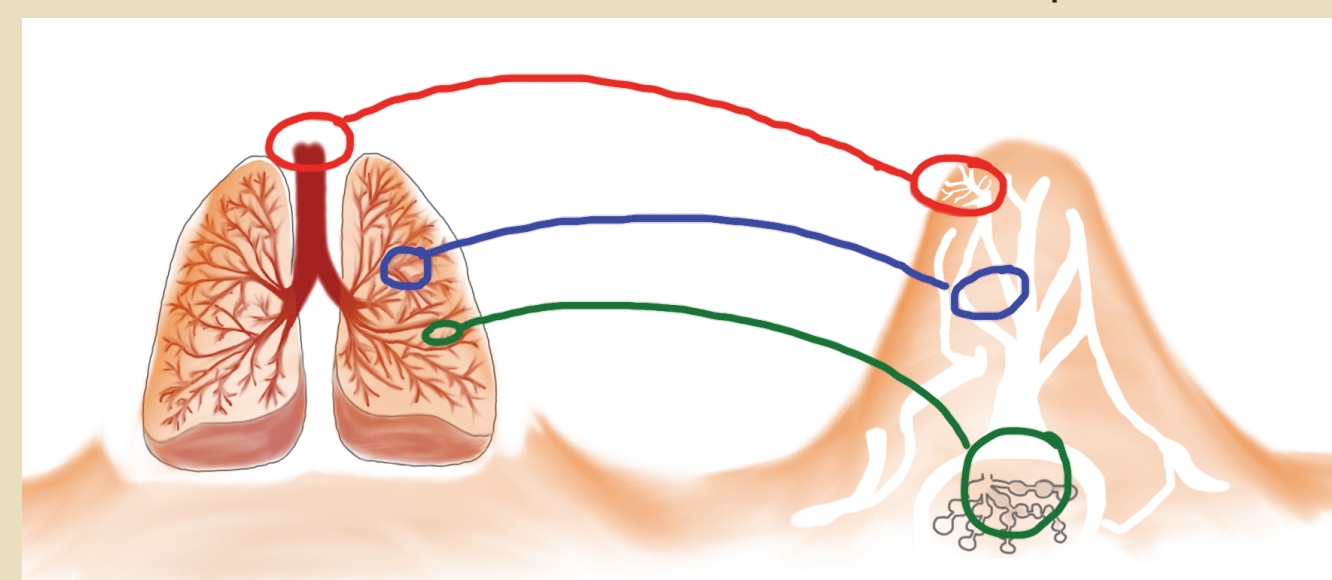
Art work for insect sensory system & respiratory system posts



4. **Promote engineering and biological research** done at the University of Illinois at Urbana-Champaign in general, and research within the Department of Entomology in particular.

5. **Reach general public.** Many people outside of academia may have never thought about the connection between insects and technology. More people have probably read my blog than any of my peer-reviewed articles combined.

Art work for termite mound/architecture post



6. **A blog invites commentary.** You are able to highlight both good and not-so-good research and thus help dispel misinformation.

7. **Become a better writer.** I still have a long way to go but with every post I feel more confident.

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How I have benefited from blogging

I. Blog-posts can be used as course content that is easily updated. Writing a post is not much more work than creating an effective power point presentation. A blog post is especially useful in online and blended courses.

II. I learn more about topics that are not in my research area. To explain entomological topics outside of my research area (physiology) or engineering topics I need to dig deeper, and then often I find connections I was not aware existed.

III. Blogging sets an example for students. Students should “Broaden their Impact”, becoming better writers and promoting their research is important for their careers.

IV. Increased number of positive interactions with scientists who are not my departmental colleagues or research collaborators.

V. Social Media has made my scientific life richer. The blog’s success relies on self-promotion (yes, yikes) so it is important for me to engage.

VI. Blog is a vehicle to promote artists, such as Alex Wild (photography) and Nils Cordes (blog’s banner). I feel that the combining of art and science will help science communication. Through the blog I have also learned a lot about copyright issues, and started creating some of my own art.

VII. More exposure. Requests for interviews and speaking engagements have increased substantially. This was ultimately my goal - to promote insects, bioinspiration and the University of Illinois.

Blogging can also be difficult

i. Blogging can be incredibly **time consuming**. It is not a primary part of my job so it often has to wait until odd hours of the day.

ii. Blogging **requires some familiarity with technology**.

iii. A blog’s success **relies on self-promotion**, and who likes that?

iv. Difficult to determine how a blog **benefits the career** of a person like myself, someone who is outside of the traditional tenure track or does not have a governmental research position.

Future

- Continue blogging because of all the reasons listed here as benefits.
- Increase frequency of posts. For this I could use your help. What do you think would be a neat entomological topic to cover as a bioinspiration blog post? Share your ideas via the post-its provided.