

# M. Andrew Jansen

## Curriculum Vitæ

Updated: March 24, 2018

### *Personal Information*

**Position** Ph.D. Candidate  
**Address** School of Life Sciences, PO Box 874501, Arizona State University, Tempe, AZ 85287-4501, USA  
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### *Research Interests*

Insect evolution, biomechanics, and systematics, with emphasis on weevils (Coleoptera: Curculionoidea: Curculionidae); mathematical and finite element modeling of insect cuticle; structural adaptation and morphological optimization; mechanical behavior of biomaterials; biomimetic design of robotic systems and materials.

### *Education*

**2014 - 2017** Ph.D. Candidate, Arizona State University, Evolutionary Biology.  
**2012 - 2014** M.Sc., Arizona State University, Biology.  
**2007 - 2011** B.S., University of Florida, Entomology and Nematology.

### *Peer Reviewed Publications*

- Jansen, M.A.**, Luck, K., Campbell, J., Amor, H.B., & D. Aukes. 2017. Bio-inspired robot design considering load-bearing and kinematic ontogeny of Chelonioidea sea turtles. In *Biomimetic and Biohybrid Systems*. p. 216-229
- Luck, K., **Jansen, M.A.**, Campbell, J., Aukes, D., & H.B. Amor. 2017. From the lab to the desert: fast prototyping and learning of robot locomotion. *Proceedings of Robotics: Science and Systems*. 13: p. 75-83.
- Jansen, M.A.**, Singh, S.S., Chawla, N., & N.M. Franz. 2016. A multilayer micromechanical model of the cuticle of *Curculio longinasus* Chittenden, 1927 (Coleoptera: Curculionidae). *Journal of Structural Biology*. 195: p. 139-158.
- Singh, S.S., **Jansen, M.A.**, Franz, N.M., & N. Chawla. 2016. Microstructure and nanoindentation of the rostrum of *Curculio longinasus* Chittenden, 1927 (Coleoptera: Curculionidae). *Materials Characterization*. 118: p. 206-211.
- Jansen, M.A.** & S.E. Halbert. 2016. Key to Florida Alydidae (Hemiptera: Heteroptera) and selected exotic pest species. *Insecta Mundi*. 0476: p. 1-14.
- Jansen, M.A.** & N.M. Franz. 2015. Phylogenetic revision of *Minyomeres* Horn, 1876 sec. Jansen & Franz, 2015 (Coleoptera, Curculionidae) using taxonomic concept annotations and alignments. *ZooKeys*. 528: p. 1-133.

### *Manuscripts in Preparation*

- Jansen, M.A.** & N.M. Franz. Descriptions of four new species of *Minyomeres* Horn, 1876 (Coleoptera: Curculionidae), with notes on their distribution and phylogeny. *In preparation*.

# Products Developed

## C-Turtle

**Website** <https://sites.google.com/view/c-turtle/>

**Design** [Version 1.0 Cut-files](#)

**License** [Attribution 4.0 International](#) (CC BY 4.0)

## Patent Applications

Aukes, D., Amor, H.B., Luck, K., **Jansen, M.A.**, & J. Campbell, *inventors*; Arizona State University, Skysong Innovations, *assignee*. 2017. United States provisional patent application for systems and methods for rapid-prototyped robotic devices. *US Patent Application No. 62/597,276*. Filed 11 December.

## Featured Media

Adams, D. 2017. "An army of these odd-looking robotic 'turtles' might help rid the world of landmines". *Digital Trends*. [26 May](#).

Ander, J. 2017. "Landmine-clearing Pi-powered C-Turtle". *Raspberry Pi Official Blog*. [26 July](#).

Coledey, D. 2017. "These flat-pack turtlebots will crawl across minefields for safety's sake". *Tech Crunch*. [25 May](#).

Crookes, D. 2017. "C-TURTLE". *The MagPi Magazine*: Issue 63 [1 November](#).

DeLisle, J.J. 2017. "Raspberry-Pi-powered turtle robot learns to navigate new terrains on its own - From planetary exploration to swarm robotic landmine sensing, C-Turtle's possibilities are endless". *Electronic Products*. [11 August](#).

Fagan, K. 2017. "The landmine-detecting robot 'turtle'". *BBC News*. [22 July](#).

Horse, J. 2017. "Raspberry Pi used to create C-Turtle, landmine clearing robot". *Geeky Gadgets*. [27 July](#).

Kety, S. 2017. "'C-Turtle', the 3D printed robot whose movements are similar to a sea turtle". *3D Adept News*. [16 August](#).

Koslow, T. 2017. "Out of the shell - C-Turtle: the paper turtle robot that can detect landmines". *All3DP*. [20 August](#).

Lavars, N. 2017. "Turtle-bot teaches itself to waddle through the desert". *New Atlas*. [26 May](#).

Ludacer, R. 2017. "Researchers are using robotic sea turtles to find land mines". *Tech Insider*. [10 June](#).

Ray, A. 2017. "A new turtle explorer - This \$70 robot that mimics a sea-turtle may eventually reach Mars". *Quartz*. [15 August](#).

Massaouden, L. 2017. "C-Turtle, le robot tortue en carton qui doit un jour explorer Mars". *Mashable avec France 24*. [25 August](#).

Mathews, L. 2017. "Robotic Turtles With Raspberry Pi Brains Are Sniffing Out Land Mines". *Geek.com*. [27 July](#).

Sabin, D. 2017. "This crawling C-Turtle robot could hunt for landmines". *Inverse*. [26 May](#).

Reynolds, M. 2017. "Robotic turtles can be used to detect landmines in the desert". *New Scientist Magazine*: Issue 3127. [24 May](#).

Sant, J.V. 2017. "ASU Robotics turns to nature for inspiration". KPHO Broadcasting Corporation: *3TV/CBS5*. [5 June](#).

Scott, C. 2017. "Partially 3D printed C-Turtle robots crawl and adapt in the desert". *3Dprint.com*. [17 August](#).

Seckel, S. 2017. "Technology comes from collaboration between computer science, mechanical engineering and biology". *ASU Now*. [25 May](#).

Seckel, S. 2017. "ASU-designed C-Turtle robot teaches itself to get around". *ASU Now*. [25 May](#).

Wehner, M. 2017. "These robotic turtles could save your life". *New York Post*. [25 May](#).

Unknown - 'Hackster Staff'. 2017. "Nature-inspired C-Turtle robot waddles the desert with ease". *Hackster*. [26 May](#).

Unknown - 'Gadget Junkie'. 2017. "C-Turtle: cardboard turtle robot with Raspberry Pi". *gadgetify*. [27 July](#).

Unknown - 'Robot Man'. 2017. "C-Turtle cardboard robot turtle learns to navigate different terrains". *Robotic Gizmos*. [27 July](#).

## Conference Presentations

- Jansen, M.A.**, Chawla, N., & N.M. Franz. 2017. "Fracture mechanics and evolution of resilient cuticle in the rostrum of *Curculio* Linnaeus, 1758". Annual Meeting of the Entomological Society of America, Denver, CO.
- Jansen, M.A.** & N.M. Franz. 2017. "Evolutionary mechanics of the rostrum in *Curculio* Linnaeus, 1758". Annual Meeting of the Willi Hennig Society, St. Petersburg, FL.
- Jansen, M.A.** & N.M. Franz. 2016. "Why the long face? Insights into the mechanical behavior of the rostrum in the genus *Curculio* Linnaeus, 1758". International Congress of Entomology, Orlando, FL.
- Jansen, M.A.**, Singh, S.S., Chawla, N., & N.M. Franz. 2015. "Mechanical Behavior of the Rostrum of *Curculio* Linnaeus, 1758 (Coleoptera: Curculionidæ)". Annual Meeting of the Entomological Society of America, Minneapolis, MN.
- Jansen, M.A.** & N.M. Franz. 2014. "A phylogenetic revision of *Minyomeres* Horn, 1876, and *Piscatopus* Sleeper, 1960 (Coleoptera: Curculionidæ: Entiminae: Tanymericini)". Annual Meeting of the Entomological Society of America Pacific Branch, Tucson, AZ.
- Jansen, M.A.** & N.M. Franz. 2013. "A phylogenetic revision of *Minyomeres* Horn, 1876, and *Piscatopus* Sleeper, 1960 (Coleoptera: Curculionidæ: Entiminae: Tanymericini)". Annual Meeting of the Entomological Society of America, Austin, TX.
- Jansen, M.A.** & N.M. Franz. 2013. "A phylogenetic revision of *Minyomeres* Horn, 1876, and *Piscatopus* Sleeper, 1960 (Coleoptera: Curculionidæ)". 12th Biennial Conference of Science and Management on the Colorado Plateau, Flagstaff, AZ.

## Society Memberships

- 2013 - 2018** Entomological Society of America, Pacific Branch  
**2013 - 2018** Coleopterists Society

## Awards Received

- 2017** \$6,000.00 - ASU Evolutionary Biology Doctoral Program Summer Fellowship  
**2016** \$400.00 - ASU School of Life Sciences Fall Travel Award

## Academic Service

### Manuscript Reviewer

Coleopterists Society Monographs (Patricia Vaurie Series)  
The Pan-Pacific Entomologist  
Zootaxa

### Book Chapter Reviews

"Weevils (Coleoptera: Dryophthoridæ, Brachyceridæ, Eirrhinidæ, Curculionidæ) of the Prairie Ecozone in Canada".  
Robert S. Anderson, Patrice Bouchard, & Hume Douglas. In Volume 4 of *Arthropods of Canadian Grasslands*.

### Community Outreach

- 2013 - 2016** ASU - SoLS Night of the Open Door  
**2013 - 2016** ASU - IAFSE Engineering Open House  
**2014 - 2015** ASU - SoLS Graduate Partners in Science Education

## **Insect Identification Services**

**2017 - 2018** US Department of Agriculture - Tempe, AZ, USA  
**2017** Greater Good, Madrean Discovery Expedition - Cajón Bonito, SO, México  
**2014** Madrean Discovery Expedition - Patagonia, AZ, USA  
**2013** Madrean Discovery Expedition - Sierra la Púrica, SO, México  
**2013** US National Park Service, BioBlitz - Joshua Tree National Park, CA, USA  
**2012** Madrean Discovery Expedition - Sierra Aconchi, SO, México

## *Teaching Appointments*

<b>Course</b>	<b>Subject</b>	<b>Semester</b>
BIO 201	Human Anatomy and Physiology	Spring - 2017
BIO 281	Biology (1 <sup>st</sup> Semester)	Fall - 2016
BIO 182	Biology (2 <sup>nd</sup> Semester)	Summer - 2016
BIO 181	Biology (1 <sup>st</sup> Semester)	Spring - 2016
BIO 386	Entomology	Fall - 2015, 2014, 2013
BIO 282	Biology (2 <sup>nd</sup> Semester for Majors)	Spring 2014

## *Field and Museum Work*

### **Field Work**

<b>United States</b>	AZ, CA, CO, FL, GA, NM, NV, SC, TX, UT (2010-2017)
<b>Mexico</b>	SO (2012, 2013, 2017)
<b>Guatemala</b>	AV, BV, CM, CQ, ES, GU, HU, IZ, JA, PR, QC, QZ, SA, SO, SR, SU, TO, ZA (2014)

### **Collections Visited**

**ASUT** USA, Arizona, Tempe, Arizona State University, Hasbrouck Insect Collection  
**BYUC** USA, Utah, Provo, Brigham Young University, Monte L. Bean Life Science Museum  
**CASC** USA, California, San Francisco, California Academy of Sciences  
**CSCA** USA, California, Sacramento, California State Collection of Arthropods  
**CSDS** USA, California, Baker, Desert Studies Center  
**CSUC** USA, Colorado, Fort Collins, Colorado State University  
**CWOB** USA, Arizona, Green Valley, Charles W. O'Brien Collection  
**EMEC** USA, California, Berkeley, University of California, Essig Museum of Entomology  
**FSCA** USA, Florida, Gainesville, Division of Plant Industry, Florida State Collection of Arthropods  
**FSMC** USA, Florida, Gainesville, University of Florida, Florida Museum of Natural History  
**LBOB** USA, Arizona, Green Valley, Lois B. O'Brien Collection  
**MGCL** USA, Florida, Gainesville, University of Florida, McGuire Center for Lepidoptera and Biodiversity  
**NAUF** USA, Arizona, Flagstaff, Northern Arizona University  
**NMSU** USA, New Mexico, Las Cruces, New Mexico State University, Museum of Southwestern Biology  
**NVDA** USA, Nevada, Reno, Nevada State Department of Agriculture  
**RLAC** USA, California, El Dorado Hills, Rolf L. Aalbu Collection  
**SWRS** USA, Arizona, Portal, Southwestern Research Station  
**TAMU** USA, Texas, College Station, Texas Agricultural and Mechanical University  
**TTUZ** USA, Texas, Lubbock, Texas Tech University  
**UCDC** USA, California, Davis, University of California, R.M. Bohart Museum of Entomology  
**UCRC** USA, California, Riverside, University of California, Entomology Research Museum  
**UNMC** USA, New Mexico, Albuquerque, University of New Mexico  
**UMNH** USA, Utah, Salt Lake City, University of Utah, Utah Museum of Natural History  
**UVGC** Guatemala, Guatemala City, Universidad del Valle de Guatemala, Colección de Artrópodos

## *Employment History*

**2012** Museum Technician - Florida State Collection of Arthropods, University of Florida

**2012** Museum Technician - McGuire Center for Lepidoptera, University of Florida

**2011** Research Technician - Honeybee Research and Extension Laboratory, University of Florida

**2011** Research Assistant - Division of Insect Behavior, USDA-ARS, Gainesville, FL

**2009 - 2011** Senior Counsellor - Center for Precollegiate Education and Training, University of Florida