**Robert B. MacCurdy**
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**Education**

Cornell University
M.S. Mechanical Engineering, August 2013
PhD Mechanical Engineering, May 2015

Cornell University/Ithaca College
B.S. / B.A. cum laude, May 1999
Electrical Engineering / Physics

**Research Interests**

***Automated Design & Fabrication of Robots*** algprac1 2-5(v)Tj1(v)2-5(n217-13(96 Tf1 -7( )-14et595.71 -7((an)4v)2-5(n)6it)6(ia 1 3611 350.7

My research vision, summarized as **Robots Creating Robots**, is to transform the way that robots are designed and fabricated. Building robots via conventional practice requires painstaking design and assembly steps that rely heavily on human intuition and individual expertise. I develop algorithms and fabrication techniques that automate the design and pro3(co)-7(n)6(v)2-5(n)6( )]TJ1 0 0 1 79.224 5ti 0 1 71 79.1 0 0(04 62aT0 9.96(p)-5(6e)-3(p)-5(6e)-3(.26 Tm[te ol0 1 79xs3.267d

**Publications**

**Journal Articles**

- MacCurdy, R. & Lipson, H. ñHybrid Printing: Modular 3D Printing of Integrated Electromechanical Systemsò (in-submission)
- MacCurdy, R.; McNicoll, A. & Lipson, H. ñA System for 3D Printing Functional Machines with Digital Materialsò (in-submission)
- Cellucci, D., MacCurdy, R., Lipson, H., Risi, S. ñ1D Printing of Recyclable Robotsò, (in-submission)
- Maggini, I., Kennedy, L., Macmillan, A., Elliott, K., MacCurdy, R., Pritsos, C., Dean, K., Guglielmo, C. ñTrouble on takeoff: light feather oiling impairs escape performance of shorebirdsò (in-review, Ecotoxicology and Environmental Safety)
- MacCurdy, R., Bijleveld, A., Gabrielson, R., Cluderay, J., Spaulding, E., Oudman, T., van Gils, J., Dekinga, A., Piersma, T., Winkler, D. ñAutomatic, intensive wildlife radiotrackingò (in-submission)
- Bijleveld, A., MacCurdy, R., Chan, Y., Penning, E., Gabrielson, R., Cluderay, J., Spaulding, E., Dekinga, A., Holthuijsen, S., ten Horn, J., Brugge, M., van Gils, J., Winkler, D., Piersma, T. ñUnderstanding spatial distributions: Negative density-dependence in prey causes predators to trade-off prey quantity with qualityò *Proc. R. Soc. B*, 2016, 283, 20151557
- Shafer, M., MacCurdy, R., Shipley, J., Winkler, D., Guglielmo, C., and Garcia, E. ñThe case for energy harvesting on wildlife in flight,ò *Smart Materials and Structures, IOP Publishing, 2015, 24, 025031*
- MacCurdy, R.

- MacCurdy, R., Gabrielson, R., Spaulding, E., Purgue, A., Cortopassi, K., Fristrup, K., "Real-Time, Automatic animal tracking using direct sequence spread spectrum" *Proceedings of European Wireless Technology Conference*, EuWiT, Amsterdam, 2008
- MacCurdy, R., Reissman, T., and Garcia, E., ñEnergy Management of Multi-Component Power Harvesting Systemsò, *Proceedings of SPIE Conference on Smart Materials and Structures*, #6928, 2008
- Reissman, T., MacCurdy, R., Garcia, E., ñExperimental Study of the Mechanics of Motion of Flapping Insect Flight Under Weight Loadingò, *Proceedings of ASME SMASIS Conference*, SMASIS, #661, 2008
- MacCurdy, R., Reissman, T., Winkler, D., and Garcia, E., ñ

NSF Young Professional Workshop on Exploring New Frontiers in Cyber-Physical Systems (**travel award: $500**). March 2014.
First Prize in AAAI Video Competition for video: "Unshackling Evolution: Evolving Soft Robots with Multiple Materials and a Powerful Generative Encoding", 2013
Advised student team that won 1st place award at the AIAA Region I-NE Student Conference, 2009
Runner-up for Best Paper prize at the European Wireless Technology Conference in Amsterdam, 2008.
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**Recreation**: Expert Downhill Skier and Instructor, Snowboarding, Mountain Biking, Backpacking, Rock Climbing & Mountaineering, Windsurfing, Kite-boarding, Canoeing, Kayaking, Hockey

**References:**

Prof. Daniela Rus (Postdoctoral supervisor)
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Prof. Hod Lipson (PhD adviser)
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Prof. David Winkler (collaborator and PhD committee member)
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Dr. Kurt Fristrup (previous supervisor at Cornell Lab of Ornithology)
Senior Research Scientist/Scholar
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