

# Daniel S Drew

PhD Candidate at the University of California, Berkeley  
Berkeley, CA

ddrew73@berkeley.edu  
www.danieldrew.me

## Education

### University of California, Berkeley

*PhD, Electrical Engineering and Computer Science*

California, USA

2013 - present

### Virginia Polytechnic Institute

*BSc, Materials Science and Engineering*

Virginia, USA

2009 - 2013

## Research Experience

### Autonomous Flying Microrobots

*PI: Kristofer S. J. Pister*

UC Berkeley

2013 - present

### Novel Embedded Systems Debugging and Development Tools

*PI: Bjoern Hartmann*

UC Berkeley

2013 - present

### A Low-Loss Voltage Actuated Switch Using Polymer-Metal Nanocomposite

*PIs: Vladimir Bulovic & Jeffrey Lang*

MIT

Summer 2012

### Design and Construction of a Reduced-Scale Railgun

*PI: Hardus Odendaal*

Virginia Tech

2011-2012

## Publications

- **Drew, D. S.**, Lambert, N., & Pister, K. S. (2018). Towards Controlled Flight of the Ionocraft, a Flying Microrobot Powered by Electrohydrodynamic Thrusters. *In Preparation*
- **Drew, D. S.**, & Pister, K. S. (2018). Takeoff of a Flying Microrobot with COTS Sensor Payload Using Electrohydrodynamic Thrust Produced by Sub-millimeter Corona Discharge. *Under Consideration*
- McGrath, W., **Drew, D.**, Warner, J., Kazemitabaar, M., Karchemsky, M., Mellis, D., & Hartmann, B. (2017). Bifirst: Visualizing and Checking Behavior of Embedded Systems across Hardware and Software. In Proceedings of the 30th Annual ACM Symposium on User Interface Software and Technology (pp. 299-310). ACM.
- **Drew, D. S.**, & Pister, K. S. (2017). Geometric Optimization of Microfabricated Silicon Electrodes for Corona Discharge-Based Electrohydrodynamic Thrusters. *Micromachines journal*, 8(5), 141.
- **Drew, D. S.**, & Pister, K. S. (2017). First takeoff of a flying microrobot with no moving parts. In Manipulation, Automation and Robotics at Small Scales (MARSS), 2017 International Conference on (pp. 1-5). IEEE. **Plenary Speaker, Best Paper Award Honorable Mention.**
- **Drew, D. S.**, Kilberg, B., & Pister, K. S. (2017). Future mesh-networked pico air vehicles. In Unmanned Aircraft Systems (ICUAS), 2017 International Conference on (pp. 1075-1082). IEEE.
- Contreras, D. S., **Drew, D. S.**, & Pister, K. S. (2017). First steps of a millimeter-scale walking silicon robot. In Solid-State Sensors, Actuators and Microsystems (TRANSDUCERS), 2017 19th International Conference on (pp. 910-913). IEEE.
- **Drew, D.**, Contreras, D. S., & Pister, K. S. (2017). First thrust from a microfabricated atmospheric ion engine. In Micro Electro Mechanical Systems (MEMS), 2017 IEEE 30th International Conference on (pp. 346-349). IEEE. **Speaker.**
- **Drew, D.**, Newcomb, J. L., McGrath, W., Maksimovic, F., Mellis, D., & Hartmann, B. (2016). The Toastboard: Ubiquitous Instrumentation and Automated Checking of Breadboarded Circuits. In Proceedings of the 29th Annual Symposium on User Interface Software and Technology (pp. 677-686). ACM. **Speaker.**

## Teaching Experience

|   |   |
|---|---|
| <b>Designing Information Devices and Systems (EE16A)</b><br><i>Content Development and Discussion Section Graduate Student Instructor</i> | UC Berkeley<br>Fall 2018                |
| <b>Interactive Device Design (CS294)</b><br><i>Graduate Student Instructor</i>  | UC Berkeley<br>Spring 2017, Summer 2017 |
| <b>Fundamentals of Materials Engineering (MSE2044)</b><br><i>Undergraduate Teaching Assistant</i>   | Virginia Tech<br>Spring 2012            |

## Grants, Awards & Press

### Grants

|  |            |
|--|------------|
| National Science Foundation Graduate Research Fellowship . . . . . | 2013-2018  |
| UC Berkeley EECS Chair's Excellence Award . . . . .                | 2013       |
| Materials Science and Engineering Merit Scholarship . . . . .      | 2011, 2012 |
| Robert C. Morris Jr. Freshman Merit Scholarship . . . . .          | 2009-2010  |

### Awards

|   |      |
|---|------|
| <i>Best Paper Honorable Mention</i> , MARSS Conference . . . . .                | 2017 |
| <i>Best Presenter</i> , Berkeley Sensor and Actuator Center IAB . . . . .       | 2014 |
| <i>Best in Undergraduate Poster Presentations</i> , SACNAS Conference . . . . . | 2012 |
| <i>Best in Undergraduate Poster Session</i> , AGMUS Conference . . . . .        | 2012 |

### Press

|   |      |
|---|------|
| <i>"The Sci-Fi Technology that Could Power Microrobots"</i> , Smithsonian Digital . . . . . | 2017 |
| <i>"ToastBoard"</i> , BerkeleyENGINEER Magazine . . . . .                                   | 2015 |

## Presentations

### Oral (*conference proceedings oral presentations noted in Publications section*)

|  |                          |
|--|--------------------------|
| Berkeley Sensor and Actuator Center IAB . . . . .                  | Spring 2017, Spring 2014 |
| Berkeley Artificial Intelligence Research (BAIR) Seminar . . . . . | Spring 2017              |
| Berkeley Institute of Design (BiD) Seminar . . . . .               | Fall 2016                |
| Robotics: Sciences and Systems (RSS) RoMA Workshop . . . . .       | Summer 2014              |
| Berkeley SWARM Lab Seminar . . . . .                               | Spring 2013              |

### Poster

|   |           |
|---|-----------|
| Berkeley Sensor and Actuator Center IAB . . . . .                   | 2013-2017 |
| TerraSwarm Research Seminar . . . . .                               | 2015-2017 |
| Ana G. Mndez University System (AGMUS) Research Symposium . . . . . | 2013      |
| SACNAS National Conference . . . . .                                | 2013      |

## Volunteering and Service

|  |           |
|--|-----------|
| Electrical Engineering Graduate Student Association, <i>Treasurer</i> . . . . .        | 2016-2017 |
| ReNUWit Ingenuity Lab, Lawrence Hall of Science, <i>Volunteer</i> . . . . .            | 2016-2017 |
| Electrical Engineering Graduate Student Association, <i>Social Chair</i> . . . . .     | 2015-2016 |
| Materials Engineering Professional Societies, <i>Class Relations Officer</i> . . . . . | 2010-2013 |