

# Curriculum Vitae

## U Kei Cheang

<b>Home Address</b>	2205 Hoffnagle St Philadelphia, PA 19152 Home: (215) 253-3895 Mobile: (267) 312-9562 u.kei.cheang@gmail.com	<b>University Address</b>	MEM Department 3141 Chestnut St Philadelphia, PA 19104 Lab: (215) 895-3632 ukc23@drexel.edu
---------------------	---	---------------------------	---

---

**Education**      *B.S./M.S.*, Mechanical Engineering, Drexel University, 3.66 GPA, June 2010

**Honors and Awards**

Albert Soffa Endowed Scholarship, 2006 - 2010  
Anthony Digneo Endowed Scholarship, 2009 - 2010  
Augusta Hess Scholarship, 2007 - 2010  
Dean's List, 2005 - 2010  
DU Endowed Scholarship, 2005 - 2010  
PHEAA Academic Excellence Scholarship, 2005 - 2008

**Experience**      **Drexel University**, Philadelphia, PA  
*Research Assistant, BAST Lab*, March 2008 – March 2009, September 2009 – present  
Researched microactuated systems using bacterial flagella. Worked in collaboration with University of Pennsylvania GRASP Lab. Designed control systems using Galvanotaxis, phototaxis and chemotaxis. Modeled artificial swimming robot in fluctuating fluid. Fabricated microstructures using microfabrication techniques. Used microscopy methods to study mechanical properties of flagellated bacteria. Studied induced bulk flow due to collective flagellar motion.

**ECRI Institute**, Plymouth, PA

*Project Engineer, Health Device Group*, March 2009 – September 2009

Evaluated and assessed medical devices on the market. Tested devices such as defibrillators, ventilators, infusion pumps and endoscopic systems for clinical practicality. Led project on elastomeric infusion pumps products. Persuaded vendors to participate in product evaluation. Developed detailed test methods and criteria. Co-author in the 2010 issue on elastomeric infusion pumps in the monthly Health Devices journal (in review).

**Metrologic Instrument Inc.**, Blackwood, NJ

*Mechanical Engineer, Automation Department*, September 2006 – March 2007

Designed and developed systems for scanner testing purposes. Worked with various machine shop equipment. Modeled designs using CAD and solid modeling. Tested designs for quality performance. Assisted in inventory management.

**Teaching Experience**      **Drexel University**, Philadelphia, PA  
*Teaching Assistant, Department of Mechanical Engineering*  
*Fluid Dynamics I (MEM 320)*

*Mechanical Behavior of Materials (MEM 380)*

*Thermodynamic Analysis I (MEM 310)*

*Fuel Cell Engines (MEM 380, Special Topic)*

Led recitations, created and graded homework, provided help to students during office hours, and proctored midterm and final exams. Organized, coordinated, and graded design projects.

*Substitute Teaching Assistant, College of Engineering*

*Introduction to Thermodynamics (ENGR 210)*

Led recitations and proctored exams.

<b>Mentorship</b>	<p><b>Summer Mentorship Program:</b> Mentored one high school student in the College of Engineering Summer Mentorship Program for direct involvement in emerging research topics.</p> <p><b>Hess Scholar Program:</b> Mentored two students in Hess Honors Scholars program for research-related projects for course credit.</p>
<b>Specialized Skills</b>	<p><b>Computer:</b> ADAMS, ANSYS, AutoCAD, COMSOL, LabVIEW, Maple, MATLAB, Pro/ENGINEER, SolidWorks.</p> <p><b>Laboratory:</b> Proficient with microscopy. Experienced with fluorescent microscopy. Experienced with photolithography and soft lithography. Experienced in bacterial cell culture.</p> <p><b>Fabrication:</b> Experienced with machining. Familiar with various types of general machine shop equipment.</p> <p><b>Language:</b> Multilingual in Cantonese, Mandarin, and English.</p>
<b>Community Involvement</b>	<p>Independent philanthropy project, Drexel University. Organizing a student organization to promote philanthropy. Pending recognition from Drexel's Office of Campus Activity. Drafted organization constitution and presided preliminary meetings.</p> <p>Volunteered in the annual event Philly Cares Day, Philadelphia, PA. Helped clean up elementary public schools. Worked on playground improvements. <i>Fall 2009</i></p> <p>Panel Member in a Panel and Question Session for College of Engineering, Drexel University. Took questions from incoming freshman regarding my experience as an undergraduate researcher. <i>Spring 2008</i></p> <p>Volunteered classroom assistant for The Caring Center, Philadelphia, PA. Assisted teachers to implement classroom activities. Taught arts and crafts to children. <i>Spring 2006</i></p>
<b>Current Projects</b>	<p>Biologically Inspired Robotic Microswimmers Control of <i>Tetrahymena Pyriformis</i> as a Microfluidic Workhorse Control of Microbiobots Powered by Bacteria</p>
<b>Publications/ Presentations</b>	<p>D. H. Kim, E. B. Steager, <u>U K. Cheang</u>, D. Byun, H.C. Park, M. J. Kim, <i>Comparing feature-based tracking method with region-based tracking method for Control of Microbiorobots</i>. Microfluidics and Nanofluidics, in review, 2009.</p> <p>A. A. Julius, M. S. Sakar, E. B. Steager, <u>U K. Cheang</u>, M. J. Kim, V. Kumar, G. J. Pappas, <i>Harnessing Bacterial Power for Micro scale Manipulation and Locomotion</i>, in <i>IEEE ICRA</i>. 2009: Kobe, Japan.</p> <p><u>U K. Cheang</u>, E. Steager, M. J. Kim, <i>The Control of Biologically Inspired Microrobots Using Bacterial Galvanotactic Response</i>, in <i>Hess Research Seminar</i>. 2009.: Philadelphia, PA.</p> <p>E. B. Steager, <u>U K. Cheang</u>, M. J. Kim, <i>Galvanotactic control of self-powered microstructures</i>, in <i>ASME IMECE</i>. 2008: Boston.</p> <p>E. B. Steager, <u>U K. Cheang</u>, M. S. Sakar, A. A. Julius, V. Kumar, G. J. Pappas, M. J. Kim, <i>Bacterial surface morphology for self-powered bacterial robots</i>, in <i>UKC</i>. 2008: San Diego, CA, U.S.A.</p>