

## Corey E. Baker, Ph.D.

University of California - San Diego, Qualcomm Institute  
9500 Gilman Drive MC 0436, La Jolla, CA 92093  
Phone: 858-224-2545  
Email: [cobaker@eng.ucsd.edu](mailto:cobaker@eng.ucsd.edu)  
Website: <http://coreyebaker.com/>

### EDUCATION

- August 2015 **University of Florida**, Gainesville, FL  
Ph.D. Electrical and Computer Engineering  
Dissertation: *Opportunistic routing in delay tolerant mobile social networks*  
Advisor: Prof. Janise McNair
- May 2012 **University of Florida**, Gainesville, FL  
M.S. Electrical and Computer Engineering
- June 2010 **California State University Los Angeles**, Los Angeles, CA  
M.S. Electrical and Computer Engineering  
Thesis: *Design and implementation of a non-linear dynamical spring replicating buckling behavior*  
Advisors: Prof. Francisco Valero-Cuevas and Prof. Deborah Won
- May 2008 **San Jose State University**, San Jose, CA  
B.S. Computer Engineering  
Minor: Mathematics

### APPOINTMENTS

- Aug. 2015 – Present *University of California Presidents Postdoctoral Fellow*, Department of Electrical and Computer Engineering, University of California - San Diego
- Jan. 2011 – Aug. 2015 *Research Assistant*, Wireless and Mobile Systems Laboratory, University of Florida, Gainesville, FL
- Feb. 2009 – June 2010 *Research Assistant*, Brain and Body Dynamics Laboratory, University of Southern California, Los Angeles, CA
- Feb. 2009 – Aug. 2009 *Research Assistant*, Neuroengineering Technology Laboratory, California State University Los Angeles, Los Angeles, CA

### SPONSORED RESEARCH

- [S 1] Title: Implementing alternative disaster relief networks with opportunistic communication  
Sponsoring Agency: National Science Foundation (NSF) Small Business Technology Transfer Research (STTR) Phase I  
Amount Requested: \$225,000  
PI: **Baker, C**  
Co-PI: Rao, R - Professor, Electrical and Computer Engineering, University of California-San Diego  
Status: Submitted (In Review)

### PUBLICATIONS

#### *Journal Articles*

- [J 3] **Baker C**, Orukari I, Starke A., and McNair J, "Efficient routing using evolving community structures in delay tolerant social networks", Elsevier Ad Hoc Networks (In Preparation - February Submission)
- [J 2] St Juste P, Jeong K, Eom H, **Baker C**, and Figueiredo R, "TinCan: User-defined P2P virtual network overlays for ad-hoc collaboration", ICST Transactions on Collaborative Computing, Vol. 14, Issue 2, August 2014

- [J 1] St Juste P, Eom H, Woodruff B, **Baker C**, and Figueiredo R, "Enabling decentralized microblogging through P2PVPNs", The International Journal of Security and Networks, Vol. 8, Issue 3, pp. 169-178, November 2013

### ***Refereed Conference Proceedings***

- [C 5] **Baker C**, Javidi T, and Rao R, "Considering uncertainty in link-state information for wireless D2D communication in software defined networks", 2017 (In Preparation - April Submission)
- [C 4] **Baker C**, Starke A., Hill-Jarrett T, and McNair J, "In vivo evaluation of a secure opportunistic schemes middleware using a delay tolerant social network", IEEE International Conference on Distributed Computing Systems (ICDCS), Atlanta, GA, 2017 (Accepted - In Press)
- [C 3] **Baker C**, Starke A, Xing S, and McNair J, "AlleyOop Social: a research platform for real-world evaluation of routing schemes in delay tolerant social networks", IEEE International Conference on Computer Communications (INFOCOM), Atlanta, GA, 2017 (Accepted - In Press)
- [C 2] **Baker C**, Dunning J, and McNair J, "How the pathway to engineering affects diversity in the engineering workforce: A Silicon Valley Case Study", ASEE Annual Conference & Exposition, Seattle, WA, 2015
- [C 1] **Baker C**, Almodovar-Faria J, St Juste P, and McNair J, "Low energy socially cognizant routing for delay tolerant mobile networks", IEEE Military Communications Conference (MILCOM), San Diego, CA, 2013

### ***Refereed Posters***

- [S 5] **Baker C**, and Javidi T, "Considering uncertainty in link-state information for wireless D2D communication in software defined networks", Academic Research and Leadership Network, Massachusetts Institute of Technology, Boston, MA, 2016
- [S 4] **Baker C**, Almodovar-Faria J, and McNair J, "Simulations of LESC routing over Bluetooth LE", 2014 ACM Richard Tapia Celebration of Diversity in Computing, Seattle, WA, 2014 (**3<sup>rd</sup> Place**)
- [S 3] **Baker C**, Almodovar-Faria J, and McNair J, "Low bandwidth efficient mobile message delivery with LESC", 2013 NSF I<sup>3</sup> Graduate Student Research Day, University of Florida, Gainesville, FL, 2013
- [S 2] **Baker C**, St. Juste P, and McNair J, "Socially aware delay tolerant microblogging for mobile devices", GT<sup>2</sup>, Georgia Institute of Technology, Atlanta, GA, 2012
- [S 1] **Baker C**, Valero-Cuevas FJ, "Design and implementation of a non-linear dynamical system replicating spring buckling behavior", NSF LSAMP/BD Meeting and Presentation On The Hill, Washington D.C., 2010

### ***Intellectual Property***

- [P 1] **Baker C**, Almodovar-Faria J, and McNair J, "Ad-hoc social network (AHSN) system, ahsn-enabled device, and methods of use", WO Patent, WO2016179583-A1, November 10, 2016

## **PRESENTATIONS**

### ***Invited Talks***

- [T 7] **Baker C**, "When disaster strikes: supplementing centralized infrastructure with opportunistic communication", Ming Hsieh Institute Seminar Series Communication, Networks, and Systems (CommNetS), University of Southern California, March 2017
- [T 6] **Baker C**, and Javidi T, "Considering uncertainty in link-state information for wireless D2D communication in software defined networks", University of California Presidents Fellow Academic Retreat, April 2016
- [T 5] St. Juste P, **Baker C**, Figueiredo R. "Data privacy tools in the age of ubiquitous data collection", ACM Richard Tapia Celebration of Diversity in Computing, 2015
- [T 4] **Baker C**, McNair J, "Message delivery for evolving community structures in mobile ad-hoc social networks", Black Graduate Student Organization Grad Research Impact Series, November 2014
- [T 3] **Baker C**, McNair J, "Community based message delivery for wearables using bluetooth low energy socially cognizant routing", Future Faculty and Professional Technical Presentation, GEM Annual Board Meeting and Conference, August 2014 (**3<sup>rd</sup> Place**)
- [T 2] **Baker C**, Almodovar-Faria J, St. Juste P, and McNair J, "Socially cognizant delay tolerant microblogging for mobile devices", GEM Tech Talks, National Society of Black Engineers, National Convention, 2013

- [T 1] **Baker C**, Valero-Cuevas FJ, “Design and implementation of a non-linear dynamical system replicating spring replicating spring buckling behavior”, MORE Programs Student Seminars, California State University Los Angeles, Los Angeles CA, May 2010

## TEACHING

Spring 2016	<i>Lecturer</i> , ECE 158B Data Networks II, University of California – San Diego Syllabus: <a href="http://bit.ly/2d6lcmv">http://bit.ly/2d6lcmv</a> Course Evaluation (92% recommendation): <a href="http://bit.ly/2bbLEeL">http://bit.ly/2bbLEeL</a>
Summer 2016	NSF New Computer Science Faculty Teaching Workshop, San Diego, CA
Summer 2011	<i>Teachers Assistant</i> , Grader, EEL 3135 Introduction to Signals and Systems, University of Florida
Spring 2011	<i>Teachers Assistant</i> , Grader, Lecturer (selected), EEL 3105 Analytical Methods in Electrical Engineering, University of Florida
Fall 2010	<i>Teachers Assistant</i> , Grader, EEL 3135 Programming for Electrical Engineers, University of Florida

## INDUSTRY EXPERIENCE

May 2014 – Present	<i>CEO and Co-Founder</i> , <b>1 Degree Technologies LLC</b> , Gainesville, FL <ul style="list-style-type: none"> <li>Lead the company on designing infrastructure-free mobile ad-hoc social networks for disaster relief, emergency response, military applications, and general social networking.</li> </ul>
Oct 2012 – Jan. 2013	<i>RF Architecture Intern</i> , <b>Intel</b> , Santa Clara, CA <ul style="list-style-type: none"> <li>Conducted research and implementation utilizing Bluetooth 4.0 along with other sensors for accurate proximity detection.</li> </ul>
May 2012 – Aug. 2012	<i>Graduate Intern</i> , Intel, Santa Clara, CA <ul style="list-style-type: none"> <li>Part of the Intel Collaborators program. Project manager/engineer on a three person team that enabled one button touch gaming on wireless displays using C, C++, and C#. Also conducted research on Bluetooth 4.0 RSSI proximity detection.</li> </ul>
Jun. 2010 – Aug. 2010	<i>Software Engineer Graduate Intern</i> , <b>Intel</b> , Santa Clara, CA <ul style="list-style-type: none"> <li>Wrote code in an Intel proprietary language for Intel graphic cards to test cards performance and identify compiler &amp; runtime bugs.</li> </ul>
Feb. 2007 – Aug. 2008	<i>Software Engineer Intern</i> , <b>Hewlett Packard</b> , Cupertino, CA <ul style="list-style-type: none"> <li>Wrote test automation code using VB Script for HP Itanium Servers. Scripts tested HP’s Software Management Software and made sure servers were reporting accurate system information.</li> </ul>
Aug. 2006 – Feb. 2007	<i>Database Administrator</i> , <b>NASA AMES Research Center (ISSI Contractor)</b> , Moffett Field , CA <ul style="list-style-type: none"> <li>Managed databases for the Hazardous Waste/Materials group using SQL. Databases were on apache servers and interacted with users through PHP, HTML, and CSS.</li> </ul>
Jun. 2006 – Aug. 2006	<i>Firmware Engineer Intern</i> , <b>Hewlett Packard</b> , Vancouver, WA <ul style="list-style-type: none"> <li>On the engine design team for HP’s first business printer. Specifically worked with MIPIO (Memory &amp; Internet Protocol IO). Wrote test code in C and C++ to test MIPIO communication between the engine and the formatter over PCI-Express.</li> </ul>
Mar. 2005 – Aug. 2005	<i>Executive Support Intern</i> , <b>Hewlett Packard</b> , Cupertino, CA <ul style="list-style-type: none"> <li>Technical support for HP Executive’s and CEO’s. Gained experience by working with a team and learning how to support hardware, software, smart phones, and network setup.</li> </ul>

## TECHNICAL SKILLS

Programming Languages	C and C++, Matlab, Swift, Java, Python, Objective C , Javascript, VB Script, Verilog, Assembly Language, LISP, SQL
Tools and Systems	Latex, NS3, VIM, ClearCase, Xilinx
Hardware	FPGA’s, Digital Interfacing, Embedded Systems

## HONORS AND AWARDS

2015 – 2017	University of California Presidents Postdoctoral Fellowship (<5% acceptance)
2016	NSF New Computing Faculty Teaching Institute (selected)
2015	The William R. Jones Most Valuable Mentor Award, Florida Education Fund McKnight Program
2015	Academic Careers Workshop for Underrepresented Participants Workshop (selected)
2015	Georgia Institute of Technology FOCUS Fellows Workshop (selected)
2014	University of Michigan NextProf Workshop (selected)
2014	3 <sup>rd</sup> Place Future Faculty and Professional Technical Presentation, GEM Annual Board Meeting and Conference
2014	3 <sup>rd</sup> Place Graduate Poster, ACM Richard Tapia Celebration of Diversity in Computing
2014	Travel Grant, ACM Richard Tapia Celebration of Diversity in Computing
2013	Travel Grant, IEEE Military Communications Conference
2005 – 2006	National Society of Black Engineers Chapter Executive Board Member of the Year

## FELLOWSHIPS

2015 – Present	University of California Presidents Postdoctoral Fellowship	(~\$110K)
2014 – 2015	Florida Education Fund McKnight Dissertation Fellow	(~\$ 24K)
2012 – 2013	NSF SEAGEP Scholarship	(~\$ 5K)
2011 – 2012	NSF SEAGEP Scholarship	(~\$ 5K)
2010 – 2015	The National GEM Consortium Ph.D Fellowship	(~\$125K)
2010 – 2015	Intel Scholar (Included in GEM Fellowship)	
2008 – 2010	NSF LSAMP Bridges to the Doctorate Fellowship	(~\$ 80K)
2008 – 2009	National Society of Black Engineers Silicon Valley Scholarship	(~\$ 2K)
2004 – 2008	The Hewlett Packard Scholarship	(~\$ 40K)

## OUTREACH, MENTORING, AND DIVERSITY RELATED SERVICES

### Blogs

- [B 11] **Baker C**, “Bridge to the doctorate: where to apply for 2015”, Road To PhD, <http://coreybaker.com/blog>, April 2015
- [B 10] **Baker C**, “Conducting a literature search: becoming familiar with your research area”, The National GEM Consortium, <http://www.gemfellowship.org/author/coreybaker/>, April 2015
- [B 9] **Baker C**, “March madness: deciphering admission letters & selecting the right graduate school”, The National GEM Consortium, <http://www.gemfellowship.org/author/coreybaker/>, March 2015
- [B 8] **Baker C**, “The blue chip graduate student: making the most of your campus visitation”, The National GEM Consortium, <http://www.gemfellowship.org/author/coreybaker/>, February 2015
- [B 7] **Baker C**, “Publishing: Targeting the right conferences and journals”, The National GEM Consortium, <http://www.gemfellowship.org/author/coreybaker/>, January 2015
- [B 6] **Baker C**, “Selecting your top 10 graduate schools: apply and conquer”, The National GEM Consortium, <http://www.gemfellowship.org/author/coreybaker/>, December 2014
- [B 5] **Baker C**, “‘Tis the season to apply for funding”, The National GEM Consortium, <http://www.gemfellowship.org/author/coreybaker/>, November 2014
- [B 4] **Baker C**, Dunnavant J, “How leaks in the Black engineering pipeline affects diversity in industry”, Blacks in Engineering, <http://coreybaker.com/blog>, August 2014
- [B 3] **Baker C**, “Selecting a graduate school”, Road To PhD, <http://coreybaker.com/blog>, May 2014
- [B 2] **Baker C**, “Inspiring our youth”, Mentoring Our Future, <http://coreybaker.com/blog>, April 2014
- [B 1] **Baker C**, “Dissertation advice”, Road To PhD, <http://coreybaker.com/blog>, April 2014

### Workshops

- [W 11] **Baker C**, “#MajorKeys to writing a phenomenal research abstract”, The National Society of Black Engineers, Region 6 Fall Regional Conference, Audience: High School, November 2016
- [W 10] **Baker C**, Berhe A, “How to fund graduate school”, The National GEM Consortium, University of California Irvine, Audience: Undergraduate, October 2016

- [W 9] **Baker C**, “Maximizing your degree: preparing for academia or industry”, National Society of Black Engineers, Region Six Leadership Conference, Audience: Undergraduate, August 2016
- [W 8] **Baker C**, Grant C, “Maximizing your degree: preparing for academia or industry”, The National GEM Consortium, Annual Board Meeting, Audience: Graduate, August 2016
- [W 7] **Baker C**, “Closer to your dreams: pursuing college and choosing engineering”, California Alliance of Minority Participation, Qualcomm Institute, Audience: Undergraduate, July 2016
- [W 6] **Baker C**, “Closer to your dreams: pursuing college and choosing engineering”, University of California San Diego TRiO Program, San Diego High School, Audience: High School, July 2016
- [W 5] **Baker C**, “Closer to your dreams: pursuing college and choosing engineering”, Nevada State College TRiO Program, Qualcomm Institute, Audience: High School, July 2016
- [W 4] **Baker C**, “Closer to your dreams: pursuing college and choosing engineering”, Pathways in Education, University of California San Diego, Audience: High School, June 2016
- [W 3] **Baker C**, “Closer to your dreams: pursuing college and choosing engineering”, California Student Opportunity and Access Program (Cal SOAP), San Diego Unified School District, Audience: High School, March 2016
- [W 2] **Baker C**, “Why graduate school?”, The National GEM Consortium, University of South Carolina, Audience: Undergraduate, October 2015
- [W 1] **Baker C**, “Preparing for graduate school: Conducting undergraduate research”, The National Society of Black Engineers, University of California San Diego Chapter, Audience: Undergraduate, October 2015

### **Leadership Positions**

2016 – Present	National Treasurer Emeritus, National Society of Black Engineers
2015 – Present	Region Six (West Coast) Finance Zone Advisor, National Society of Black Engineers
2014 – 2015	Convention Planning Committee Finance Zone Advisor, National Society of Black Engineers
2014 – 2015	National Treasurer Emeritus, National Society of Black Engineers
2012 – 2014	National Treasurer, National Society of Black Engineers <ul style="list-style-type: none"> <li>• Administered operating budget of ~\$10M, additional ~\$10M in reserves, restructured and introduced financial sustainable models, reduced inefficient budgeting by ~\$115K, increased programmatic academic spending by 300% without increasing overall expenses</li> </ul>
2009 – 2010	Region Six (West Coast) Chairperson Emeritus & Parliamentarian, National Society of Black Engineers
2009 – 2010	Chapter Co-Advisor, CAMS NSBE Jr. National Society of Black Engineers
2008 – 2009	Region Six (West Coast) Chairperson, National Society of Black Engineers
2007 – 2008	Region Six (West Coast) Treasurer, National Society of Black Engineers
2007 – 2008	Chairperson, San Jose State University African American Commencement Committee
2006 – 2007	Chapter Pre College Initiative Chair, National Society of Black Engineers
2005 – 2008	Chapter Telecommunications Chair, National Society of Black Engineers
2004 – 2005	Chapter Senator and Historian, National Society of Black Engineers

### **SERVICE**

#### **Technical Committees**

1. Member, Technical Program Committee, Symposium SAC Symposium Social Networking Track, IEEE International Conference on Communications (ICC), Paris, France (2017)

#### **Session Chair/Moderator**

1. Adhoc and Sensor Networks (AHSN2 Vehicular Networks I), IEEE Global Communications Communications Conference (GLOBECOM), San Diego, CA (2015)
2. Security (I-1 Design and Next Generation Networks I), IEEE Global Communications Communications Conference (GLOBECOM), San Diego, CA (2015)

3. Building Pathways that Promote Pursuit/Persistence in Engineering (M540), Minorities in Engineering Division, ASEE 122 Annual Conference & Exposition, Seattle, WA (2015)

### **Reviewer for Conferences and Journals**

1. IEEE Wireless Communications Magazine (WCM 2017)
2. IEEE International Conference on Communications (ICC 2017), Paris, France
3. IEEE International Conference on Computer Communications (INFOCOM 2017), Atlanta, GA
4. IEEE International Conference on Computer Communications (INFOCOM 2014), Toronto, Canada
5. IEEE Global Communications Conference (GLOBECOM 2013), Atlanta, Georgia  
IEEE Military Communications (MILCOM 2012), Orlando, FL

### **Memberships**

2009 – Present	Member, Kappa Alpha Psi Fraternity Inc.
2007 – 2008	Member, The Collegiate 100
2004 – 2008	Member, Society of Computer Engineers
2003 – Present	Member, National Society of Black Engineers

### **CONFERENCE & MEETING PARTICIPATION**

2016	NSBE Region 6 Fall Regional Conference, Denver, CO
2016	The Compact for Faculty Diversity Institute on Teaching and Mentoring, Tampa, FL.
2016	GEM Annual Board Meeting and Conference, Miami, FL
2016	NSF New Computer Science Faculty Teaching Workshop, San Diego, CA
2016	Stochastic Networks Conference, San Diego, CA
2016	NSBE National Convention, Boston, MA
2016	Information Theory and Applications Workshop, San Diego, CA
2015	IEEE Global Communications Conference, San Diego, CA
2015	NSBE Region 6 Fall Regional Conference, Riverside, CA
2015	McKnight Doctoral Annual Fellows Meeting, Tampa, FL
2015	The Compact for Faculty Diversity Institute on Teaching and Mentoring, Washington, D.C.
2015	NSBE National Convention, Anaheim, CA
2015	ACM Richard Tapia Celebration of Diversity in Computing, Boston, MA
2015	Georgia Institute of Technology FOCUS Fellows Workshop, Atlanta, GA
2014	NSBE Region 6 Fall Regional Conference, San Francisco, CA
2014	McKnight Doctoral Annual Fellows Meeting, Tampa, FL
2014	The Compact for Faculty Diversity Institute on Teaching and Mentoring, Atlanta, GA
2014	University of Michigan NextProf Workshop, Ann Arbor, MI
2014	GEM Annual Board Meeting and Conference, San Diego, CA
2014	ASEE Florida Diversity Summit, Gainesville, FL
2014	McKnight Summer Research & Writing Institute, Tampa, FL
2014	NSBE National Leadership Conference, Ann Arbor, MI
2014	NSBE National Convention, Nashville, TN
2014	ACM Richard Tapia Celebration of Diversity in Computing, Seattle, WA
2013	IEEE Military Communications Conference, San Diego, CA
2013	NSBE Region 6 Fall Regional Conference, Los Angeles, CA
2013	NSBE Region 3 Fall Regional Conference, Lexington, KY
2013	NSBE Professional Development Conference, Atlanta, GA
2013	NSBE Region 5 Leadership Conference, Kansas City, MO
2013	NSBE Region 6 Leadership Conference, Sacramento, CA
2013	NSBE Alumni Summit, San Juan, PR
2013	NSBE Region 6 Transition Meeting, San Ramon, CA
2013	NSBE National Leadership Conference, New London, CT
2013	NSBE National Convention, Indianapolis, IN
2012	IEEE International Conference on Computer Communications (INFOCOM), Orlando, FL

2012 NSBE Region 4 Fall Regional Conference, Chicago, IL  
2012 NSBE Region 2 Fall Regional Conference, Norfolk, VA  
2012 NSBE Region 1 Fall Regional Conference, Parsippany, NJ  
2012 NSBE Professional Development Conference, Houston, TX  
2012 NSBE Alumni Summit, Las Vegas, NV  
2012 NSBE National Convention, Pittsburgh, PA  
2011 The Compact for Faculty Diversity Institute on Teaching and Mentoring, Atlanta, GA  
2011 NSBE National Convention, St. Louis, MO  
2010 NSF Joint Annual Meeting, Washington, DC  
2010 NSBE National Convention, Toronto, Canada  
2009 NSBE Region 6 Fall Regional Conference, Long Beach, CA  
2009 NSBE Region 6 Leadership Conference, San Jose, CA  
2009 NSBE Region 6 Summer Camping Conference, Pomona, CA  
2009 NSBE Region 6 Transition Meeting, San Ramon ,CA  
2009 NSBE National Convention, Las Vegas, NV  
2008 NSBE Region 6 Fall Regional Conference, Redmond, WA  
2008 NSBE Region 6 Leadership Conference, San Jose, CA  
2008 NSBE Region 6 Transition Meeting, San Ramon ,CA  
2008 NSBE National Convention, Orlando, FL  
2007 NSBE Region 6 Fall Regional Conference, Redmond, WA  
2007 GEM Annual Board Meeting and Conference, Las Vegas, NV  
2007 NSBE Region 6 Leadership Conference, Tempe, AZ  
2007 NSBE Region 6 Summer Camping Conference, Irvine, CA  
2007 NSBE Region 6 Transition Meeting, San Ramon ,CA  
2007 NSBE National Convention, Columbus, OH  
2006 NSBE Region 6 Transition Meeting, San Ramon ,CA  
2006 NSBE National Convention, Pittsburgh, PA  
2005 NSBE Region 6 Fall Regional Conference, Los Angeles, CA  
2005 NSBE Region 6 Leadership Conference, Las Vegas, NV  
2005 NSBE National Convention, Boston, MA  
2004 NSBE Region 6 Fall Regional Conference, Sacramento, CA