

# Christopher L. Schaeffbauer

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## CONTACT INFORMATION

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## RESEARCH INTERESTS

Human-computer interaction, participatory design, community-based participatory research, social computing, ubiquitous computing, health informatics, social justice, educational technology, behavior change techniques

## EDUCATION

**University of Colorado**, Boulder, Colorado USA

Ph.D. Computer Science, August 2016  
Focus in Human-Computer Interaction  
Thesis title: "Exploring technology as a tool to support healthy eating and food access"  
Advisors: Dr. Katie Siek and Dr. Tamara Sumner

**University of Colorado**, Boulder, Colorado USA

B.S. Computer Science, May 2011  
Minor Biochemistry  
Senior Thesis Topic: "Documenting For Care: Evaluating An EMR For Primary Care Providers"  
Advisor: Dr. Katie Siek

## HONORS AND AWARDS

**Graduate Fellowship in Community-Based Research** August 2015 - June 2016

**Lewis Barbato National Award for Outstanding Student Service** May 2014  
from the *American College Health Association*

**National Science Foundation GK12 Fellowship** June 2011 - August 2012

**National Science Foundation GRFP Honorable Mention** March 2012

Colorado Creed CONTRIBUTE Award for Service, 2011-2012

Engineering School Dean's List, Fall 2009-Spring 2011

University of Colorado Boulder Department of Computer Science Outstanding Graduate in Research, Spring 2011

School of Engineering Active Learning Award, May 2011

## RESEARCH EXPERIENCE

**Amazon Alexa**, Sunnyvale, California

*User Researcher*

**August 2017 - present**

Member of the Alexa user research team. Leading user research for four product areas, ensuring teams build products that create amazing user experiences. Using mixed methods including qualitative inquiry, usability evaluation, prototyping, survey-based research, A/B testing, and experimentation. Partnering closely with product, design, and engineering to ensure teams actively leveraging research insights.

**Boulder Food Rescue**

*Researcher*

**July 2016 - present**

Working with Boulder Food Rescue to define a social impact research agenda for their organization. Conducting qualitative analysis of textual and multimedia data. Leading the development of a novel

protocol for participatory design workshops. Piloting the workshop protocol with a small group of target users. Communicating research findings with community partners and stakeholders.

**University of Colorado**, Boulder, Colorado

*Community-based Research Fellow*

**June 2015 - June 2016**

Advisor: Dr. Ben Kirshner

Developed a community-based participatory research project in collaboration with a local non-profit, Boulder Food Rescue. Conducted qualitative, ethnographic research into the experiences of people facing food insecurity. Used findings, design research, and workshops to develop ideas for technologies, programs, and policies to improve food access. Crowdfunded to raise funds that support our research project.

**University of Colorado**, Boulder, Colorado

*Graduate Research Assistant*

**June 2011 - May 2015**

Advisor: Dr. Katie Siek

Conducted formative community-based research to understand health needs in marginalized communities. Designed and developed sociotechnical interventions to improve health in those communities. Leveraged a user-centered design process to develop an Android application to support healthy snacking in low income families along with another version of the application targeted at the general population. Conducted user research to explore the applications' acceptability and adoption and used the findings in subsequent iterations.

**University of Colorado**, Boulder, Colorado

*National Science Foundation GK12 Fellow*

**June 2011 - August 2012**

Collaborated with a 10th grade health teacher to bring computational thinking into the classroom. Developed and taught computationally enhanced lessons about sexually transmitted infections, alcohol risks, finding reliable health information and research online, and using mobile apps to track health information. Conducted ethnographic research in the classroom to design desktop-based applications to support classroom learning. Evaluated students' experiences with the lessons and changes in knowledge and self-efficacy related outcomes using survey research and ethnography.

**University of Colorado**, Boulder, Colorado USA

*Undergraduate Research Assistant (NSF REU)*

**August 2009 - May 2011**

Advisor: Dr. Katie Siek

Led research at an on-campus healthcare facility to study an electronic medical record (EMR) system. Completed Institution Review Board documentation for the study to work with human research subjects. Utilized ethnographic methods and usability evaluation techniques to understand workflows related to the system and identify usability concerns.

**University of Colorado**, Boulder, Colorado USA

*Undergraduate Research Assistant*

**April 2010 - June 2011**

Advisor: Dr. Wei Zhang

Assisted in an organic synthesis lab under the direction of a graduate research assistant. Completed several iterations of 9 different reactions that were part of a complex synthesis of macrocycle polymers to be used as nanotubes. Ran reactions, completed work-ups and purifications using column chromatography, distillation, and extraction. Utilized NMR and IR spectroscopy to analyze products.

## PUBLICATIONS

Beenish Chaudhry, Christopher Schaeffbauer, Ben Jelen, Katie Siek, and Kay Connelly. Evaluation of a Food Portion Size Estimation Interface for a Varying Literacy Population. In *CHI '16: Proceedings of the 34th Annual ACM Conference on Human Factors in Computing Systems*, May 2016.

Kim Unertl, Christopher Schaeffbauer, Terrance Campbell, Charles Senteio, Katie Siek, Suzanne Bakken, and Tiffany Veinot. Integrating community-based participatory research and informatics

approaches to improve the engagement and health of underserved populations. In *Journal of the American Medical Informatics Association*, January 2016.

Christopher Schaeffbauer, Danish Kahn, Amy Le, Garrett Sczechowski, and Katie Siek. Snack Buddy: Supporting Healthy Snacking in Low Socioeconomic Status Families. In *CSCW '15: Proceedings of the 18th ACM Conference on Computer Supported Cooperative Work & Social Computing*, p. 1045-1057, March 2015.

Danish U. Khan, Swamy Ananthanarayan, An Le, Christopher Schaeffbauer, and Katie A. Siek. Designing mobile snack application for low socioeconomic status families. In *PervasiveHealth 2012: Proceedings of the 6th International Conference on Pervasive Computing Technologies for Healthcare*, 8 pages, May 2012.

Christopher L. Schaeffbauer and Katie A. Siek. The Potential to Integrate Computational Thinking into K-12 Health Curriculum. In *Workshop on Interactive Systems in Healthcare (WISH)*, p. 165-169, Oct 22, 2011.

Christopher L. Schaeffbauer and Katie A. Siek. Cautious, but Optimistic: Primary Care Provider Documentation Workflows with Electronic Medical Records. In *PervasiveHealth 2011: Proceedings of the 5th International Conference on Pervasive Computing Technologies for Healthcare*, p. 63-70. May 2011.

Bachelor of Science Thesis of Christopher L. Schaeffbauer: Documenting for Care: Evaluating an EMR for Primary Care Providers. December, 2010.

PRESENTATIONS Christopher Schaeffbauer, Danish U. Kahn, Garrett Sczechowski, and Katie A. Siek. Demographics Specific Interfaces to Promote Healthy Snacking in Low SES Families. *Late Breaking Research: AMIA Annual Symposium 2013*.

DOCTORAL CONSORTIUM *AMIA Doctoral Consortium on Sociotechnical Issues in Biomedical Informatics*, Washington D.C., November 15, 2013.

DEVELOPMENT EXPERIENCE **Amazon**, Santa Monica, California  
*Software Development Engineer* **October 2016 - August 2017**  
Developing software to support the growing catalog of video content in Amazon Video. Using Java and AWS to build scalable systems that process and organize videos submitted by content creators and major studios.

**Open mHealth**, San Francisco, California  
*Software Engineer* **June 2015 - March 2016**  
Built open-source tools to help developers leverage mobile health data in their applications. Developed systems to integrate with mobile health data APIs such as Fitbit and Google Fit. Addressed issues reported by users on Github and communicated solutions to our developer community.

*Data Science and Development Intern* **May 2015 - June 2015**  
Contributed to the development of mobile health data models using JSON schema. Updated and released an iOS library, named Granola, to support the serialization of a wider range of HealthKit data types into JSON.

**Tyler Technologies**, Lakewood, Colorado  
*Part-time Software Developer* **September 2014 - May 2015**  
Developed stand-alone projects related to tax software for local governments as part of a small, agile team of developers, QA, and support staff. Designed, developed, and debugged object-oriented

software using C# and the .Net framework. Worked with SQL Server for the database-backed application components. Participated in daily stand-up meetings and weekly planning activities.

TEACHING  
EXPERIENCE

*Graduate Instructor for Science Discovery* **June 2013 and 2014**  
Designed, taught, and coordinated week-long courses on computer science and computational thinking to middle and high school students from across Colorado and New Mexico.

*GK12 Fellow at Fairview High School* **August 2011 - May 2012**  
Collaborated with a 10th grade health teacher to develop computationally enhanced lessons. Taught lessons about finding reliable health information and research online, mobile apps for health, sexually transmitted infections, and alcohol risks. Taught in 5 semester long classes during Fall 2011 and 4 semester long classes in Spring 2012.

*Mentoring High School Student* **August 2011 - August 2012**  
Mentor of Monica Mishra, a Junior at Peak to Peak High School in her development of a mobile application to improve snacking behaviors. Taught her about health behavior change theories, mobile development on android, completing cognitive walkthroughs and heuristic evaluations, and conducting user studies.

*Undergraduate Teaching Assistant* **August 2010 - December 2010**  
Worked with students one-on-one during office hours to clarify lecture and laboratory content for undergraduate General Biology. Contributed to lecture slide content and clicker questions.

*High School Honors Institute* **July 2010**  
Lead small group sessions to teach high school students about opportunities in the field of Computer Science.

SERVICE AND  
LEADERSHIP

**University of Colorado Student Government (CUSG)**  
*President of Student Affairs* **May 2013 - May 2014**  
Served as one of three student body presidents representing all students (undergraduate and graduate) on-campus, in the community, and to external entities.

**American College Health Association (ACHA)**  
*Chair and Chair-elect, Student Section* **May 2012 - May 2014**  
Represented college students across the United States on health issues to the national advocacy group for student health. Helped to plan to annual meeting for the ACHA.

**American College Health Association (ACHA)**  
*Board of Directors Member* **May 2012 - May 2014**  
One of two student representatives on the ACHA Board of Directors. Involved with decision making and strategic planning for the organization.

**Community Health Intern**  
*HIV Testing Program* **August 2012 - August 2013**  
Conducted point-of-care HIV testing and counseling around sexual health for CU Boulder students. Received significant training in motivational interviewing, testing procedures, and behavior change. Participated in weekly debriefs with HIV testing staff.

**University of Colorado Student Government (CUSG)**  
*Director of Health and Safety* **May 2012 - May 2013**  
Acted as a liaison between health and safety entities on the CU Boulder campus, City of Boulder and the student body. Collaborated with CU Police Department, Recreation Services, Facilities Management, and Community Health to make campus safer and healthier. Develop policies around alcohol,

tobacco, health services, and lighting on and off campus alongside city and university administration.

### **University of Colorado Student Health Board**

*Co-Chair*

**January 2010 - May 2013**

Contributed to decisions about student health insurance, student health policy, and the administration of the student health center. Led weekly meetings of 16+ health board members. Served on various committees to improve the services offered at the health center. Acted as liaison between the health center and the student government (CUSG).

### **Boulder County Municipal Courts**

*Court Intern*

**September 2011 - May 2013**

Talked to individuals charged with Minor in Possession misdemeanor about their alcohol use and habits to help them reflect on their behaviors. Completed a questionnaire with each individual to help determine the appropriate alcohol education class to be taken as part of their sentence.

### **Pedestrian Safety Committee**

*Student Member*

**March 2012 - May 2014**

Provided student perspective on issues related to the safety of foot traffic on campus. Helped develop plans to change campus transportation routes to increase safety of students.

### **Mental Health Partners**

*Youth Advocate*

**February 2010 - August 2013**

Worked with a community youth to engage in healthy activities in the community and provide positive role modeling.

### **CU End Distracted Drive Initiative**

*Chair*

**January 2012 - August 2013**

Led a newly formed student committee to address the issue of distracted driving on campus. Coordinated efforts of over 8 student groups and campus administrators (including student affairs and the CU Police Department) to develop programs for raising awareness of the issue and interventions for long and short term behavior change.

### **CU Association of Machinery (ACM) Student Chapter**

*Vice-Chair*

**January 2012 - May 2013**

Involved in the rejuvenation of the ACM Student Chapter at CU Boulder. Led the student efforts to renovate the Computer Science Education Labs at the engineering center at CU Boulder, sponsor tech talks by local and national companies, and movie events.

### **Student Emergency Medical Services**

*Alcohol Education Officer*

**May 2012 - February 2013**

Coordinated the Court Intern program where a group of peer educators who conduct brief motivational interviewing and screening of students that receive Minor in Possession charges for underage drinking. Developed presentations around safe drinking and coordinate the delivery of presentations to student groups and high schools.

### **Student Emergency Medical Services**

*Emergency Medical Technician*

**November 2010 - December 2012**

Attended university sponsored events as an emergency health professional to provide acute care and management of critical health crisis. Evaluated the need for more advanced medical services and coordinate care as necessary. Ensured the safety of students throughout the events.

### **CU System-Wide Insurance Task Force**

*Student Representative*

**July 2011 - December 2012**

Advocated for CU Boulder students' needs related to health insurance on a task force with repre-

sentatives from four University of Colorado Campuses. The goal of the task force is to explore the feasibility of consolidating the insurance plans of all four campuses into one or two plan offerings for all. Also worked with University Government Relations and Legal Counsel to generate policy to improve student health insurance options at the state level.

### **Boulder County Health Information Collaborative**

*Clinical Steering Committee Representative*

**August 2011 - June 2012**

Represented the University of Colorado Boulder's needs and interests with respect to health information exchange and health improvement. Provided a technical perspective to the conversations and help healthcare providers understand opportunities and limitations of technology.

### **University of Colorado Wellness Grant**

*Steering Committee Member*

**March 2011 - April 2012**

Worked with a small committee of campus administrators and students in order to direct the efforts around a large planning grant given to the University to deploy a program, in collaboration with Colorado State University, to increase the number of fruits and vegetables eaten by students on campus, as well as their physical activity.

### **Mesa Vista of Boulder**

*Volunteer*

**October 2009 - August 2011**

Visited residents at a long term care facility to provide social engagement and build community. Also setup and maintained a computer for residents to use.

## PROFESSIONAL SERVICE

Reviewed for *ACM DIS* Conference on Design of Interactive Systems 2018  
Reviewed for *ACM SIGCHI* Conference on Human Factors in Computing Systems 2018  
Reviewed for *ACM SIGCHI* Conference on Human Factors in Computing Systems 2017 (Special Recognition Received)  
Reviewed for *ACM SIGCHI* Conference on Human Factors in Computing Systems 2016  
Reviewed for *ACM SIGCHI* Conference on Human Factors in Computing Systems 2015  
Reviewed for *iConference* Annual Meeting 2015  
Reviewed for *AMIA* Annual Symposium 2013  
Reviewed for *ACM SIGCHI* Conference on Human Factors in Computing Systems 2013  
Student Volunteer at *ACM SIGCHI* Conference on Human Factors in Computing Systems 2012  
Reviewed for *Pervasive Health* Conference on Pervasive Computing Technologies for Healthcare 2012  
Reviewed for *ACM SIGCHI* Conference on Human Factors in Computing Systems 2012  
Reviewed for *ACM SIGCHI* Conference on Human Factors in Computing Systems 2011  
Reviewed for *ACM SIGHIT* International Health Informatics Symposium 2010

## FUNDING

“Healing Blankets” and “ModMarket Cooking Classes” Lead Team Member: Chris Schaeffbauer. Funding Agency: University of Colorado Parent’s Association. Duration: 05/2012-05/2013. (Lead)

“Games for Health” Lead Team Member: Swaminathan Ananthanarayan. Funding Agency: University of Colorado at Boulder Engineering Excellence Fund Committee. Duration: 03/2011-12/2011. (Team Member)

## SKILLS

*Research:* User-centered design, contextual inquiry, ethnography, semi-structured interviews, user personas, experimental design, conducting user studies, participatory design, workshop facilitation, usability evaluation techniques (e.g., cognitive walkthrough, heuristic evaluation), card sorting, think-aloud protocol, wizard of oz, writing and communicating research findings

*Statistics:* Descriptive and inferential statistics, structural equation modeling

*Languages/Frameworks:* Java, C#, Android, iOS (Objective C and Swift), SQL, Python, Spring, AWS

*Tools:* Git, IntelliJ, Visual Studio, Xcode, Unity, CocoaPods

*Applications:* SPSS, NVIVO Qualitative Analysis Software, Dedoose Qualitative Analysis Software, Qualtrics