CURRICULUM VITAE

Heather Richter Lipford

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1 Education

2005	Ph.D. College of Computing, Georgia Institute of Technology "Designing and Evaluating Meeting Capture and Access Services" Advisor: Dr. Gregory Abowd
1995	B.S. Computer Science, Michigan State University Advisor: Dr Betty H.C. Cheng

2 Professional Experience

2011 - present	Associate Professor, Department of Software and Information Systems. University of North Carolina at Charlotte, Charlotte, NC.
2005 – 2011	Assistant Professor, Department of Software and Information Systems. University of North Carolina at Charlotte, Charlotte, NC.
1997 – 2005	Research and Teaching Assistant. Georgia Institute of Technology Atlanta, GA.
2000 - 2001	Technical Intern. IBM T.J. Watson Research Laboratories. Hawthorne, NY.
1997, 1998	Technical Intern. Hewlett-Packard Laboratories Palo Alto, CA.
1995	Undergraduate research assistant. Michigan State University, East Lansing, MI.

3 Licenses and Certifications

4 Career Highlights

- Core contributor to the usable security and privacy community with my work on privacy and social network sites.
- Co-authored a book as the first comprehensive research survey of usable security and privacy, published as a synthesis lecture by Morgan & Claypool in 2014.

- Active leadership roles in usable security and privacy by serving in conference and workshop organizing roles, such as the co-chair of the SOUPS 2011 and 2012 technical program.
- Established HCI as a core area in the department by founding the HCI Lab and developing the HCI programs.
- Participated in interdisciplinary research and education, including collaborations with faculty in information security, visualization, gaming, philosophy, and education.
- Graduated 5 Ph.D. students, 4 of whom are now in tenure-track academic positions. Have supervised 36 undergraduates in senior projects and research, which includes 19 women and 9 minority students.

5 Publications

5.1 Peer Reviewed Journal Publications

[J9] Pamela Wisniewski, A.K.M. Najmul Islam, **Heather Richter Lipford**, and David Wilson. "Framing and Measuring Multi-Dimensional Interpersonal Privacy Preferences of Social Networking Site Users." *Communications of the Association of Information Systems*, 38, January 2016.

[J8] Jason Watson, Andrew Besmer, and **Heather Richter Lipford**. "Mapping User Preference to Privacy Default Settings." *ACM Transactions on Human Computer Interaction*, December 2015. 22(6), pp 1-20. http://dx.doi.org/10.1145/2811257

[J7] Pamela Wisniewski, **Heather Richter Lipford**, Heng Xu, Emmanuel Bello-Ogunu. "Facebook Apps and Tagging: The Trade-off between Personal Privacy and Engaging with Friends." *Journal of the Association for Information Science and Technology*, in press.

[J6] Jun Zhu, Jing Xie, **Heather Richter Lipford**, Bill Chu. "Supporting Secure Programming in Web Applications through Interactive Static Analysis" *Journal of Advanced Research*, 2013. http://www.sciencedirect.com/science/article/pii/S2090123213001422

[J5] Gordon Hull, **Heather Richter Lipford**, and Celine Latulipe. "Contextual Gaps: Privacy Issues on Facebook." *Journal on Ethics in Information Technologies*, Springer Science + Business Media, 13(4), 2011. http://dx.doi.org/10.1007/s10676-010-9224-8

[J4] Wenwen Dou, Dong Hyun Jeong, Felesia Stukes, William Ribarsky, **Heather Richter Lipford**, and Remco Chang. "Recovering Reasoning Process From User Interactions." *IEEE Computer Graphics and Applications*, 29(3), May/June 2009, pp 52-61. http://dx.doi.org/10.1109/MCG.2009.49

[J3] **Heather Richter Lipford** and Gregory D. Abowd. "Reviewing Meetings in TeamSpace." *HCI Journal*, Taylor and Francis Group, 23(4), October 2008, pp 406-432. http://dx.doi.org/10.1080/07370020802532759

[J2] Werner Geyer, **Heather Richter**, and Gregory D. Abowd. "Towards a Smarter Meeting Record – Capture and Access of Meetings Revisited." *Multimedia Tools and Applications*, Springer Science + Business Media, 27(3), December 2005, pp 393-410. http://www.springerlink.com/content/764173787524gh76/

[J1] **Heather Richter**, Chris Miller, Gregory D. Abowd, and Harry Funk. "Tagging Knowledge Acquisition To Facilitate Knowledge Traceability." *International Journal on Software Engineering and Knowledge Engineering*, World Scientific, 14(1), February 2004, pp 3-19.

5.2 Peer Reviewed Conference Publications

[C43] Jun Zhu, Bill Chu, **Heather Richter Lipford**. "Detecting Privilege Escalation Attacks through Instrumenting Web Application Source Code." To appear in the Proceedings of the Symposium on Access Control Models and Technologies (SACMAT), June 2016.

[C42] Mahmoud Mohammadi, Bill Chu, **Heather Richter Lipford**, and Emerson Murphy-Hill. "Automatic Web Security Unit Testing: XSS Vulnerability Detection." In the Proceedings of the IEEE/ACM Workshop on Automated Software Testing (AST 2016), May 2016.

[C41] Tyler Thomas, Justin Smith, Bill Chu, Emerson Murphy-Hill, and **Heather Richter Lipford**. "A Study of Interactive Code Annotation for Access Control Vulnerabilities." In the Proceedings of the IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC 2015), October, 2015.

[C40] Justin Smith, Brittany Johnson, Emerson Murphy-Hill, Bill Chu, and **Heather Richter Lipford**. "Questions Developers Ask While Diagnosing Security Vulnerabilities with Static Analysis." In the Proceedings of the ACM SIGSOFT Symposium on the Foundations of Software Engineering (FSE), September 2015.

[C39] Jun Zhu, Bill Chu, **Heather Lipford**, and Tyler Thomas. "Mitigating Access Control Vulnerabilities through Interactive Stative Analysis" In the Proceedings of the ACM Symposium on Access Control Models and Technologies (SACMAT), June 2015.

[C38] Michael Whitney, **Heather Richter Lipford**, Bill Chu, Jun Zhu. "Embedding Secure Coding Instruction into the IDE: A Field Study in an Advanced CS Course." In the Proceedings of SIGCSE 2015, the 46th Technical Symposium on Computer Science Education, March 2015. http://dl.acm.org/citation.cfm?doid=2676723.2677280

[C37] Mary Lou Maher, Celine Latulipe, **Heather Richter Lipford**, Audrey Rorrer. "Flipped Classroom Strategies for CS Education." In the Proceedings of SIGCSE 2015, the 46th Technical Symposium on Computer Science Education, March 2015. http://dl.acm.org/citation.cfm?doid=2676723.2677252

[C36] Erik Northrop, **Heather Richter Lipford**. "Exploring the Usability of Open Source Network Forensic Tools." In the Proceedings of the Workshop on Security Information Workers, ACM Conference on Computer and Communications Security, November 2014.

[C35] **Heather Richter Lipford**, Tyler Thomas, Bill Chu, Emerson Murphy-Hill. "Interactive Code Annotation for Security Vulnerability Detection." In the Proceedings of the Workshop on Security Information Workers, ACM Conference on Computer and Communications Security, November 2014.

[C34] Jun Zhu, **Heather Richter Lipford**, Bill Chu. "Interactive Support for Secure Programming Education." In the Proceedings of SIGCSE 2013, the 44th Technical Symposium on Computer Science Education, March 2013. http://dl.acm.org/citation.cfm?id=2445396.

[C33] **Heather Richter Lipford** and Mary Ellen Zurko. "Someone To Watch Over Me" In the Proceedings of the New Security Paradigms Workshop (NSPW 2012), September 2012.

[C32] Jason Watson, Andrew Besmer, and **Heather Richter Lipford**. "+Your Circles: Sharing Behavior on Google+" In the Proceedings of the Symposium on Usable Privacy and Security (SOUPS 2012), July 2012 (acceptance 21%). http://dl.acm.org/citation.cfm?id=2335373

[C31] Jing Xie, **Heather Richter Lipford**, and Bei-Tseng Chu. "Evaluating Interactive Support for Secure Programming." In the Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI 2012), May 2012. http://dl.acm.org/citation.cfm?id=2208665

[C30] Pamela Karr-Wisniewski, **Heather Richter Lipford**, and David Wilson. "Fighting for My Space: Coping Mechanisms for SNS Boundary Regulation." In the Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI 2012), May 2012. http://dl.acm.org/citation.cfm?id=2207761

[C29] Jing Xie, Bei-Tseng Chu, **Heather Richter Lipford**, and John Melton. "ASIDE: IDE Support for Web Application Security." In the Proceedings of the 27th Annual Computer Security Applications Conference (ACSAC 2011), December 2011, pp 267-276. http://doi.acm.org/10.1145/2076732.2076770

[C28] Jing Xie, **Heather Richter Lipford**, and Bei-Tseng Chu. "Why Do Programmers Make Security Errors?" In the Proceedings of the IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC), September, 2011, pp161-164. http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=6070393&isnumber=6070364

[C27] Pamela Karr Wisniewski, **Heather Richter Lipford**, and David Wilson. "A New Social Order: Boundary Regulation within Online Social Networks." In the Proceedings of the Americas Conference on Information Systems (AMCIS), August 2011.

[C26] Pamela Karr Wisniewski, Erin Carroll, and **Heather Richter Lipford**. "Technology overload: Gender-based Perceptions of Knowledge Worker Performance." In the Proceedings of the Americas Conference on Information Systems (AMCIS), August 2011.

[C25] Jing Xie, Bei-Tseng Chu, and **Heather Richter Lipford**. "Idea: Interactive Support for Secure Software Development." In the Proceedings of the International Symposium on Engineering Secure Software and Systems (ESSoS 2011), February 2011, pp 248-255. (acceptance 28.6%) http://dx.doi.org/10.1007/978-3-642-19125-1_19

[C24] **Heather Richter Lipford**, Felesia Stukes, Wenwen Dou, Matthew Hawkins, and Remco Chang. "Helping Users Recall Their Reasoning Process." In the Proceedings of the IEEE Symposium on Visual Analytics Science and Technology (VAST), October, 2010. (acceptance 28%)

[C23] Andrew Besmer, Jason Watson, and **Heather Richter Lipford**. "The Impact of Social Navigation on Privacy Policy Configuration." In the Proceedings of the Sixth Symposium on Usable Privacy and Security (SOUPS 2010), July 2010. (acceptance 25%) http://portal.acm.org/citation.cfm?doid=1837110.1837120

[C22] **Heather Richter Lipford**, Jing Xie, Will Stranathan, Daniel Oakley, and Bei-Tseng Chu. "The Impact of a Structured Application Framework on Web Application Security." In the Proceedings of the Colloquium for Information Systems Security Education (CISSE) 2010, June 2010, pp 212-219.

[C21] Andrew Besmer and **Heather Richter Lipford**. "Users' (Mis) Conceptions of Social Applications." In the Proceedings of Graphics Interface (GI 2010), June 2010, pp 63-70. (acceptance 39%)

[C20] Andrew Besmer and **Heather Richter Lipford**. "Moving Beyond UnTagging: Photo Privacy in a Tagged World." In the Proceedings of the ACM Conference on Human Factors in Computing Systems, CHI 2010, April 2010, pp 1563-1572. **Best Paper Honorable Mention.** (acceptance 22%) http://doi.acm.org/10.1145/1753326.1753560

[C19] **Heather Richter Lipford**, Jason Watson, Michael Whitney, Katherine Froiland, and Robert W. Reeder. "Visual vs. Compact: A Comparison of Privacy Policy Interfaces." In the Proceedings of the ACM Conference on Human Factors in Computing Systems, CHI 2010, April 2010. pp 1111-1114. (acceptance 22%) http://doi.acm.org/10.1145/1753326.1753492

[C18] Jason Watson, Michael Whitney, and **Heather Richter Lipford**. "Configuring Audience-Oriented Privacy Policies." In the Proceedings the Workshop on Assurable and Usable Security Configurations (SafeConfig), collocated with ACM CCS 2009, November 2009, pp 71-78. http://doi.acm.org/10.1145/1655062.1655076

[C17] **Heather Richter Lipford**, Gordon Hull, Celine Latulipe, Andrew Besmer, and Jason Watson. "Visual Flows: Contextual Integrity and the Design of Privacy Mechanisms on Social Network Sites." In the Proceedings of the Workshop on Security and Privacy in Online Social Networking, IEEE International Conference on Social Computing (SocialCom), August 2009, pp 985-989. http://dx.doi.org/ 10.1109/CSE.2009.241

[C16] Andrew Besmer, **Heather Richter Lipford**, Mohammed Shehab, and Gorrell Cheek. "Social Applications: Exploring a More Secure Framework." In the Proceedings of the Fifth Symposium on Usable Privacy and Security (SOUPS), July 2009. (acceptance 31%) http://doi.acm.org/10.1145/1572532.1572535

[C15] Dong Hyun Jeong, Wenwen Dou, Felesia Stukes, William Ribarsky, **Heather Richter Lipford**, and Remco Chang. "Evaluating the Relationship between User Interaction and Financial Visual Analysis." In the Proceedings of the IEEE Symposium on Visual Analytics Science and Technology (VAST), October 2008, pp 83-90. (acceptance 36%)

[C14] Katherine P. Strater and **Heather Richter Lipford**. "Strategies and Struggles with Privacy in an Online Social Networking Community." In the Proceedings of 22nd British HCI Group Annual Conference on HCI 2008, September 2008, pp 111-120. (acceptance 29%) http://portal.acm.org/citation.cfm?id=1531514.1531530

[C13] **Heather Richter Lipford**, Andrew Besmer, and Jason Watson. "Understanding Privacy Settings in Facebook with an Audience View." In the Proceedings of the USENIX Workshop on Usability, Psychology and Security, April, 2008. http://www.usenix.org/events/upsec08/tech/full_papers/lipford/lipford_html/

[C12] Tiffany Barnes, Eve Powell, Amanda Chaffin, **Heather Lipford**. "Game2Learn: Improving the motivation of CS1 students." In the Proceedings of the 3rd International Conference on Game Development in Computer Science Education (GDCSE-2008), March, 2008, pp 1-5. (acceptance 25%) http://doi.acm.org/10.1145/1463673.1463674

[C11] Tiffany Barnes, **Heather Richter**, Eve Powell, Amanda Chaffin, and Alex Godwin. "Game2Learn: Building CS1 Learning Games for Retention." In the Proceedings of the 12th Annual Conference on Innovation and Technology in Computer Science Education (ITiCSE), June 2007, pp 121-125. http://doi.acm.org/10.1145/1269900.1268821

[C10] **Heather Richter**, Robin Gandhi, Lei Liu, and Seok-Won Lee. "Incorporating Multimedia Source Materials into a Traceability Framework." In the Proceedings of the Workshop on Multimedia Requirements Engineering (MeRE), 14th International Requirements Engineering Conference (RE06), Minneapolis, MN, September 2006. http://dx.doi.org/10.1109/MERE.2006.3

[C9] **Heather Richter**, Chris Miller, Gregory D. Abowd, and Idris Hsi. "An Empirical Investigation of Capture and Access for Software Requirements Activities." In the Proceedings of Graphics Interface 2005, May 2005, pp 121-128. (acceptance 29%)

[C8] **Heather Richter**, Chris Miller, Gregory D. Abowd, and Harry Funk. "Tagging Knowledge Acquisition To Facilitate Knowledge Traceability." In the Proceedings of the Conference on Software Engineering and Knowledge Engineering, San Francisco, CA, July 2003, pp 432-439.

[C7] Werner Geyer, **Heather Richter**, and Gregory D. Abowd. "Making Multimedia Meeting Records More Meaningful." in the Proceedings of the IEEE International Conference on Multimedia and Expo (ICME 2003), Baltimore, MD, July 2003, pp 669-672, vol.2.

[C6] **Heather Richter**, Werner Geyer, Ludwin Fuchs, Shahrokh Daijavad, and Steven Poltrock. "Integrating Meeting Capture Within a Collaborative Team Environment." In the Proceedings of the International Conference on Ubiquitous Computing, Ubicomp 2001, Atlanta, GA, September 2001, pp 123-138. http://dx.doi.org/10.1007/3-540-45427-6_11

[C5] Werner Geyer, **Heather Richter**, Ludwin Fuchs, Tom Frauenhofer, Shahrokh Daijavad, and Steven Poltrock. "A Team Collaboration Space Supporting Capture and Access of Virtual Meetings." In the Proceedings of the International Conference on Supporting Group Work, Group 2001, Boulder, CO, September 2001, pp 188-196. http://doi.acm.org/10.1145/500286.500315

[C4] Ludwin Fuchs, Werner Geyer, **Heather Richter**, Steven Poltrock, Tom Fruenhofer, and Shahrokh Daijavad. "Enabling Inter-Company Team Collaboration." In the Proceedings of the First International IEEE Workshop on Web-based Collaboration, WetICE 2001, Cambridge, MA, July 2001, pp 374-379.

[C3] Michael W. McCracken, Idris Hsi, **Heather Richter**, Robert Waters, and Laura Burkhart. "A Proposed Curriculum for an Undergraduate Software Engineering Degree." In the Proceedings of the Conference on Software Engineering Education & Training (CSEE&T). Austin, TX, March 2000, p246-257.

[C2] Enoch Y. Wang, **Heather A. Richter**, and Betty H.C. Cheng. "Formalizing and Integrating the Dynamic Model within OMT." In the Proceedings of the 19th International Conference on Software Engineering, Boston, MA, May 1997, pp 45-55. http://doi.ieeecomputersociety.org/10.1109/ICSE.1997.610203

[C1] Betty H.C. Cheng, Enoch Y. Wang, Robert H Bordeau, and **Heather A. Richter**. "Bridging the Gap Between Informal and Formal Approaches in Software Development." In the Proceedings of the Fourth Software Engineering Research Forum, Boca Raton, FL, November 1995, pp 269-278.

5.3 Peer Reviewed Extended Abstracts/Short Papers

[e3] **Heather Richter**, Andrew Skaggs, and Gregory D. Abowd. "Indexing Unstructured Activities with Peripheral Cues." In the Extended Abstracts of ACM Human Factors in Computing Systems (CHI 2005), April, 2005, pp 1737-1740. (acceptance 25%) http://doi.acm.org/10.1145/1056808.1057010

[e2] Khai N. Truong, **Heather Richter**, Gillian R. Hayes, and Gregory D. Abowd. "Devices for Sharing Thoughts and Affection at a Distance." In the Extended Abstracts of ACM Conference on Human Factors in Computing Systems (CHI 2004), Vienna, Austria, April 2004, pp 1203-1206. http://doi.acm.org/10.1145/985921.986024

[e1] **Heather A. Richter**. "Understanding Meeting Capture and Access." Doctoral Consortium participant, Extended Abstracts of the ACM Conference on Human Factors in Computing Systems (CHI 2002), Minneapolis, MN, April 2002, pp 558-559. http://doi.acm.org/10.1145/506443.506480

5.4 Peer Reviewed Posters

[p16] Yousra Javed and **Heather Richter Lipford**. "A Usable Security Body of Knowledge" Poster presented at the Symposium on Usable Privacy and Security (SOUPS 2016), July 2016.

[p15] Mahmoud Mohammadi, Bill Chu, **Heather Richter Lipford**. "Using Unit Testing to Detect Sanitization Flaws" Poster to be presented at ACM Conference on Computer and Communications Security (CCS 2015), November, 2015.

[p14] Bart Knijnenburg, Pamela Wisniewski, **Heather Richter Lipford**. "Profiling Facebook Users' Privacy Behaviors. Poster presented at the INFORMS Annual Meeting (INFORMS 2014).

[p13] Erik Northrop, **Heather Richter Lipford**. "Ephemerality in Social Media." Poster presented at the Symposium on Usable Security and Privacy (SOUPS), July 2013.

[p12] Evie Powell, Felesia Stukes, **Heather Richter Lipford**, Tiffany Barnes. "Snag'em- Creating and Monitoring Strong Community Connections through Games." Poster presented at the IEEE International Conference on Social Computing (SocialCom), October 2011.

[p11] Andrew Besmer, Jason Watson, and **Heather Richter Lipford**. "Contextually Bounded Access Control." Poster presented at the Symposium on Usable Security and Privacy, July 2011.

[p10] Michael Whitney and **Heather Richter Lipford**. "Participatory Sensing as Community Building." In the Extended Abstracts of the Conference on Human Factors in Computing Systems, Work-In-Progress, May 2011.

[p9] Katherine Froiland and **Heather Richter Lipford**. "Visual versus Compact: Displaying Privacy Settings on Social Network Sites." Poster presented at the Grace Hopper Celebration of Women in Computing, October 2009.

[p8] **Heather Richter Lipford**, Will Stranathans, Daniel Oakley, Jing Xie, and Bei-Tseng Chu. "The Impact of Structured Application Development Framework on Web Application Security." Poster presented at the USENIX Security Symposium, August, 2009.

[p7] Andrew Besmer and **Heather Richter Lipford**. "Tagged Photos: Concerns, Perceptions, and Protections." In the Extended Abstracts of the Conference on Human Factors in Computing Systems, Work-In-Progress, April 2009, pp 4585-4590. http://doi.acm.org/10.1145/1520340.1520704

[p6] Pamela Karr Wisniewski, Okan Pala, **Heather Richter Lipford**, and David Wilson. "Grounding Geovisualization Interface Design: A Study of Interactive Map Use." In the Extended Abstracts of the Conference on Human Factors in Computing Systems, Work-In-Progress, April 2009, pp 3757-3762. http://doi.acm.org/10.1145/1520340.1520567

[p5] Charisse Cotton and **Heather Richter Lipford**. "Improving the Privacy Settings Interface of Online Social Networks" Poster presented at the Richard Tapia Celebration of Diversity in Computing, April 2009.

[p4] David Wilson, **Heather Richter Lipford**, Pamela Karr, Erin Henrickson, and Nadia Najjar. "Charting New Ground: Modeling User Behavior in Interactive Geovisualization." In Proceedings of the 16th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (ACM GIS), Poster paper, November 2008. http://doi.acm.org/10.1145/1463434.1463506

[p3] Andrew Besmer and **Heather Richter Lipford**. "Privacy Perceptions of Photo Sharing in Facebook." Poster presented at the Symposium on Usable Privacy and Security (SOUPS 2008), Pittsburgh, PA, July 2008. http://cups.cs.cmu.edu/soups/2008/posters/besmer.pdf

[p2] Tiffany Barnes and **Heather Richter**. "Game2Learn: Improving the engagement and motivation of CS1 students." Poster presented at the ACM SIGRAPH Symposium on Video Games, August 2007.

[p1] Katherine Strater and **Heather Richter**. "Examining Privacy and Disclosure in a Social Networking Community." Poster presented at the Symposium on Usable Privacy and Security (SOUPS), July 2007, pp 157-158. http://doi.acm.org/10.1145/1280680.1280706

5.5 Books and Book Chapters

[B2] Simson Garfinkel and **Heather Richter Lipford**. *Usable Security: History, Themes, and Challenges.* Synthesis Lectures on Information Security, Privacy, and Trust, Morgan & Claypool, September 2014.
http://www.morganclaypool.com/doi/abs/10.2200/S00594ED1V01Y201408SPT011

[B1] **Heather Richter Lipford**. Interacting with Computers. In *Cognitive Science: An Interactive Approach*. National Social Science Press, 2011.

5.6 Other Publications

5.6.1 Conference and Workshop Participation without Proceedings (Peer-Reviewed)

[c17] Tyler Thomas, Justin Smith, **Heather Richter Lipford**, Bill Chu, and Emerson Murphy-Hill. What Questions Remain? An Examination of How Developers Understand an Interactive Static Analysis Tool. Presented at the 2nd Workshop on Security Information Workers, SOUPS 2016.

[c16] Pradeep Murukannaiah, Jessica Staddon, **Heather Richter Lipford**, Bart P. Knijnenburg. "PrIncipedia: A Privacy Incidents Encyclopedia." Presentation at the Privacy Law Scholars Conference, June 2016.

[c15] **Heather Richter Lipford**, Yousra Javed. "A Body of Knowledge for Usable Security and Privacy." Lightning talk at the ACM Technical Symposium on Computer Science Education (SIGCSE), March 2016.

[c14] Pamela Wisniewski, Bart Knijnenburg, **Heather Richter Lipford**. "Profiling Facebook Users' Privacy Behaviors." Paper at the Workshop on Privacy Personas and Segmentation, Symposium on Usable Privacy and Security (SOUPS), July 2014.

[c13] Pamela Wisniewski, **Heather Richter Lipford**. "Between Nuance and Rigor: Contextualizing and Measuring SNS Desired Privacy Level." Extended Abstract presented at the 2013 ACM Conference on Computer Supported Cooperative Work, Measuring Networked Privacy Workshop, San Antonio, TX, February 2013.

[c12] **Heather Richter Lipford**, Pamela Wisniewski, Kelly Caine, Lorraine Kisselburgh, Cliff Lampe. "Reconciling Privacy with Social Media", Workshop at the ACM Conference on Computer Supported Cooperative Work (CSCW), February 2012.

[c11] **Heather Richter Lipford**. "Personal Privacy Management." Presentation at the 2011 STARS Celebration, August 2011.

[c10] Pamela Wisniewski, **Heather Richter Lipford**, and David Wilson. "Interpersonal Boundary Mechanisms within Online Social Networks." Position paper at the Workshop on Networked Privacy, Conference on Human Factors in Computing Systems (CHI), May 2011.

[c9] Michael Whitney and **Heather Richter Lipford**. "Participatory Sensing as Community Building." Position paper at the Workshop on Data Collection by the People, for the People, Conference on Human Factors in Computing Systems (CHI), May 2011.

[c8] **Heather Richter Lipford** and Dugald Hutchings. "Shaping Curricular Models for Early Exposure." Position paper and panelist at the 1st Software and Usable Security Aligned for Good Engineering Workshop, April 5-6, 2011.

[c7] **Heather Richter Lipford**, D.K. Smetters, and Mary Ellen Zurko. "The Role of Usability in Security." Technical Research Track presentation at Grace Hopper Conference on Women in Computing, October 2010.

[c6] Wenwen Dou, Dong Hyun Jeong, Felesia Stukes, William Ribarsky, **Heather Richter Lipford**, and Remco Chang. "Comparing Usage Patterns of Domain Experts and Novices in Visual Analytical Tasks." Paper presented at the Sensemaking Workshop, Conference on Human Factors in Computing (CHI), April, 2009.

[c5] **Heather Richter**. "Experiences with Indexing Meeting Content." Position paper presented at the Workshop on Designing for Collective Memories, Conference on Human Factors in Computing Systems (CHI 2006), Montreal, Canada, April 2006. http://www.comp.lancs.ac.uk/~corina/CHI06Workshop/Papers/Richter.pdf

[c4] **Heather A. Richter** and Gregory D. Abowd. "Evaluating capture and access through authentic use." Position paper presented at the Workshop on Evaluation Methods for Ubiquitous Computing, International Conference on Ubiquitous Computing (Ubicomp2001), Atlanta, GA, September, 2001. http://zing.ncsl.nist.gov/ubicomp01/.

[c3] Werner Geyer, Shahrokh Daijavad, Tom Frauenhofer, **Heather A. Richter**, Khai Truong, Ludwin Fuchs, and Steven Poltrock. "Virtual Meeting Support in TeamSpace." Demo at the ACM Conference on Computer-Supported Cooperative Work (CSCW2000), Philadelphia, PA, December 2000.

[c2] **Heather A. Richter** and Gregory D. Abowd. "Automated Meeting Capture and Access." Participant by nomination at the Human Computer Interaction Consortium, Frasier, CO, February 2000.

[c1] **Heather A. Richter**, Pascal Schuchhard, and Gregory D. Abowd. "Automated capture and retrieval of architectural rationale." Position paper, First IFIP Working Conference on Software Architecture. San Antonio, TX, February 1999. http://users.ece.utexas.edu/~perry/prof/wicsa1/final/richter.pdf.

5.6.2 Technical Reports

[t6] **Heather Richter**, Gregory D. Abowd. "Navigating Recorded Meetings with Content-Based Indices." Technical Report GVU-06-07, Georgia Institute of Technology. April 2006.

[t5] Werner Geyer, **Heather A. Richter**, Ludwin Fuchs, Tom Frauenhofer, Shahrokh Daijavad,, and Steve Poltrock. "TeamSpace: A Collaborative Workspace System Supporting Virtual Meetings." Technical Report RC21961, IBM T.J. Watson Research, February 2001.

[t4] **Heather A. Richter**, Gregory D. Abowd. "Automating the capture of design knowledge: a preliminary study." Technical Report GVU-99-45, Georgia Institute of Technology. December 1999.

[t3] **Heather A. Richter**, Jason A. Brotherton, Khai N. Truong, and Gregory D. Abowd. "Multi-scale Timeline Slider." Technical Report GVU-99-30, Georgia Institute of Technology. July 1999.

[t2] **Heather A. Richter**, Pascal Schuchhard, and Gregory D. Abowd. "Automated capture and retrieval of architectural rationale." Technical Report GVU-98-37, Georgia Institute of Technology, September 1998.

[t1] **Heather A. Richter** and Betty H.C. Cheng. "Formalizing and Integrating the Functional Model Within OMT." Technical Report CPS-95-32, Michigan State University. August 1995.

5.6.3 Non-Refereed Journal Publications

[j1] Jean Scholtz and **Heather Richter**. "Report from Ubicomp 2001 Workshop: Evaluation Methodologies for Ubiquitous Computing." Beyond the Desktop Column, *ACM SIGCHI Bulletin*, January-February 2002, p 9.

6 Extramural Funding

6.1 Peer Reviewed National and International Grants

- **Heather Richter Lipford** (PI), Bill Cu (Co-PI). NSF-DGE #1523041. SaTC-EDU: Deploying and Evaluating Secure Programming Education in the IDE. September 2015 – August 2017: $299,788.
- **Heather Richter Lipford** (PI), Florence Martin (Co-PI). NSF-DGE #1500052. SaTC-EDU: EAGER: Transforming Usable Security and Privacy Education. June 2015 - May 2017: $194,439.
- **Heather Richter Lipford** (Lead PI), Bill Chu (Co-PI), Emerson Murphy-Hill (NCSU PI). NSF-CNS #1318854. TWC: Small: Collaborative: Discovering Software Vulnerabilities through Interactive Static Analysis. October 2013 – September 2016: $498,996 (UNC Charlotte portion: $249,112). REU supplement #1539733, May 2015: $8000. REU supplement #1636779, May 2016: $8000.
- Bill Chu (PI), **Heather Richter Lipford** (Co-PI), Ehab Al-Shaer (Co-PI), Xintao Wu (Co-PI), Weichao Wang (Co-PI). NSF-DUE #1129190. Collaborative Project: Carolina Cyber Defender Scholarship. September 2012 – August 2016: $2,929,518.
- **Heather Richter Lipford** (PI), Bill Chu (Co-PI). NSF-DUE #1044745. Collaborative Research: Supporting Secure Programming Education in the IDE. September 2011–February 2014, $183,589.
- Teresa Dahlberg (PI), Tiffany Barnes (Co-PI), and **Heather Richter Lipford** (Co-PI). NSF-CNS #1042468. BPC-AE: Scaling the STARS Alliance, A National Community for Broadening Participation through Regional Partnerships. January 2011-December 2015, $3,750,000.
- Bill Chu (PI), **Heather Richter Lipford** (Co-PI). UNC Charlotte DoD IASP Research and Education Partnership, An IDE-Based Tool for Secure Application Development. Department of Defense (DoD) and National Security Agency (NSA), September 2010–November 2011, $2,198.
- Bill Chu (PI), **Heather Richter Lipford** (Co-PI), and Mohamed Shehab (Co-PI). DOD I Carolinas Cyber-Defender Scholarship Program. Department of Defense (DoD) and National Security Agency (NSA). August 2009-November 2010. $73,158.
- **Heather Richter** (PI), David Wilson (Co-PI). Studying Map Interaction Behavior. NSF-SGER #074983, Information & Intelligent Systems, Human-Centered Computing, September 2007-February 2009, $83, 958. REU supplement, grant #0832511, June-Aug. 2008, $6000.

6.2 Peer Reviewed Industrial Grants

- Tiffany Barnes (PI), **Heather Richter Lipford** (Co-PI), and Michael Youngblood (Co-PI). Envision Charlotte: Growing Greener. Duke Energy. January 2011 – August 2011, $189,604.

6.3 Peer Reviewed Regional Grants

6.4 Peer Reviewed Institutional Grants

- **Heather Richter Lipford** (PI), Bill Chu (Co-PI). Developing an Open Educational Resource for Secure Software Development. Scholarship of Teaching and Learning Grants, UNC Charlotte, January -May 2010. $6000.

- Celine Latulipe (PI), **Heather Richter Lipford** (Co-PI). Modular Sensing for Motion Input and Visualization in Embodied Interaction. Faculty Research Grant, UNC Charlotte, January 2009-May 2010, $12,000.
- **Heather Richter Lipford**. Communicating Research Results. UNCC Bonnie Cone Award. Internal award funded through the NSF ADVANCE grant. January-December 2008. Amount: $4000.
- Jamie Payton (PI), Teresa Dahlberg (Co-PI), Bruce Long (Co-PI), Aidong Lu (Co-PI), **Heather Richter** (Co-PI), Tiffany Barnes (Co-PI), and Dale-Marie Wilson (Co-PI). Advancing Women Faculty Careers in the College of Computing and Informatics. UNCC ADVANCE grant initiative, May 2007-June 2008, $25,000.

6.5 Awards and Donations

- **Heather Richter Lipford**. Interactive Models for Application Security. Google Research Award. March 2012 – September 2013, $29,865.

6.6 Other Grants

7 Student Supervision

7.1 Doctoral Students Supervised

- Andrew Besmer, 2007-2013
  Current position: Assistant Professor at Winthrop University
  Resulted in: [J8, C32, C23, C21, C20, C17, C16, C13, p11, p7, p3]

- Erik Northrop, Fall 2012-present
  Current research topic: Usable security and privacy
  Resulted in: [C36, p13]

- Ambarish Regmi, Fall 2014-present
  Current research topic: Usable security and privacy

- Tyler Thomas, Fall 2013-present
  Current research topic: Interactive Secure Programming
  Resulted in: [C41, C39, C35]

- Jason Watson, 2008-2014
  Current position: Assistant Professor at University of North Alabama
  Resulted in: [J8, C32, C23, C19, C18, C17, C13, p11]

- Michael Whitney, 2009-2015
  Current position: Assistant Professor and program director at Winthrop University
  Resulted in: [C38, C19, C18, c9, p10, c9]

- Pamela Karr Wisniewski, 2008-2012, co-advised with Dr. David Wilson
  Current position: Assistant Professor at University of Central Florida
  Resulted in: [J9, J7, C30, C26, C27, c14, c12, c10, p14, p6, p4]

- Jing Xie, 2010-2012, co-advised with Dr. Bill Chu
  Current position: FireEye Security
  Resulted in: [J6, C31, C29, C28, C25, C22, p8]

7.2 Masters Students Supervised

- Jason Watson, M.S. May 2008. "Facilitation of Complex Privacy Settings in Online Social Networks."
- Aniruddha Sengupta, Independent project, 2006-2007
- Amul Adagale, Research Assistant, 2011-2012
- Vasant Tendulkar, Independent project, 2016

7.3 Bachelors Students Supervised

7.3.1 Independent and Senior Projects Students

- Paul Houlbrooke: 2006
- Aaron Dixon: 2006
- Mohammed Al Ghannam: 2006-2007
- Abdullah Al Hussaini: 2006-2007
- Robert Rhyne: 2006-2007
- Katherine Strater 2007-2008
- Isaac Thompson: 2007-2008
- Kanius Squalls: 2009
- Natmarie Jimenez: 2009-2010
- Jordana Hodges: 2011
- Darren Harton: 2011
- Ammar Ahmed: 2011
- Gregory Mayhew: 2012
- Darrell Price: 2012
- Kurt Brown: 2013
- Michael Hester: 2013
- Jeremy Wagner: 2014

7.3.2 REU Students

- Paige Matthews: 2006 CRAW Distributed Mentor program, co-advised with Dr. Tiffany Barnes
- Hyun Jordan: 2006 CRAW Distributed Mentor program, co-advised with Dr. Tiffany Barnes
- Eve Powell: 2006 CRAW Distributed Mentor program, co-advised with Dr. Tiffany Barnes. Resulted in [C12, C11]
- Tiffany Ralph: 2006 CRAW Distributed Mentor program, co-advised with Dr. Tiffany Barnes
- Katherine Strater: 2006-2007 UNCC Cognitive Science Internship REU. Resulted in [C14, p1]
- India Duncan: 2007-2008 UNCC Cognitive Science Internship REU
- Erin Henrickson: 2008, Supported by NSF grant and NSF REU supplement. Resulted in [p4]
- Charisse Cotton: 2008 CRAW Distributed Mentor program. Resulted in [p5]
- Lauren Hamilton: 2008 CRAW Distributed Mentor program
- Gabrielle Bankston: 2008-2009 UNCC Cognitive Science Internship REU
- Katie Froiland: 2009 CRAW Distributed REU. Resulted in [C19, p9]
- Ashley Anderson: 2010 CRAW Distributed REU
- Gloria Szilasi: 2011-2012, Supported by NSF REU supplement for STARS
- Vanessa Hernandez: 2012 CRAW Distributed REU
- Irene Kwok: 2012 UNCC REU site
- Takayla Sexton: 2012 UNCC REU site
- Chirag Patel: 2012, Supported by NSF REU supplement for STARS

- Stephen Nick Chandler: 2012-2013, Supported by NSF REU supplement for STARS
- Tyler Thomas: Spring 2013, Supported by Google Research Award
- Katherine Currier, Summer 2015, Supported by NSF REU supplement
- Caleb Diaz-Spatharos, Summer 2016, UNCC REU site

7.4 Non-Degree Students Supervised (e.g., certificate students)

8 Teaching

8.1 Major Accomplishments

- Developed a new course, ITIS 4420/6420/8420 Usable Security and Privacy, now offered yearly.
- Awarded the College of Computing and Informatics Graduate Teaching Award in 2011.
- Developed new curriculum for a flipped class for both introductory HCI and web programming courses. Resulted in [C37].
- Co-PI for STARS, a nationwide alliance for broadening participation in computing through student-led regional engagement initiatives, funded by the National Science Foundation.
- Awarded an NSF grant to construct a body of knowledge in usable security and privacy education, and develop online learning modules.

8.2 Courses Taught

8.2.1 Graduate Courses

- ITIS 6400/8400: Principles of Human Computer Interaction
  - New course
  - Terms: Spring 2006 (as topics course), Spring 2008, Spring 2010
  - Average enrollment: 16
- ITIS 6010/8010: Ubiquitous Computing
  - New course
  - Terms: Spring 2007
  - Enrollment: 7
- ITIS 4420/6420/8420: Usable Security and Privacy
  - New course
  - Terms: Fall 2007, Spring 2010, Spring 2011, Spring 2012, Spring 2014, Spring 2016
  - Average enrollment: 18
- ITSC 8110: Introduction to Research Studies
  - Co-taught with Dr. Wartell
  - Terms: Fall 2008
  - Enrollment: 32
- ITSC 8699: Research Seminar
  - Co-organized college seminar with Dr. Wartell
  - Terms: Fall 2008, Spring 2009

8.2.2 Undergraduate Courses

- ITIS 2300: Introduction to Web Application Development
  - Terms: Fall 2011, Fall 2012, Spring 2013, Spring 2014, Fall 2014
  - Average enrollment: 70

- ITIS 3130: Human Computer Interaction

- Developed original curriculum and course materials
- Terms: Fall 2005, Fall 2006, Spring 2008, Fall 2008, Spring 2009, Fall 2009, Fall 2010, Spring 2011, Spring 2012, Spring 2013, Fall 2015
- Average enrollment: 50

8.2.3 Other Courses

9 Service and Outreach

9.1 Accomplishments

- Graduate Program Director for the Master's in Information Technology from 2015, leading the establishment of 2 new graduate certificates in security as well as the approval of the new Master's in Cyber Security which will launch in January 2017.
- Serving in various organizing roles for conferences and workshops related to usable security and privacy, such as PC co-chair for SOUPS 2011 and 2012
- Served as program committee member for the premiere HCI conference in 2011, 2012, and for 2017, based on my expertise in usable security and privacy
- Regular reviewer for top conferences in HCI, such as CHI and CSCW
- Extensive university service having served on a variety of university, college, and department committees, as well as seminar co-organizer, and faculty advisor for 2 student groups.

9.2 External Service

9.2.1 Invited Talks

- "Interactive Static Analysis / Leveraging Community for Security and Privacy", Invited speaker, Clemson University, January 29, 2015.
- "Improving Privacy on Social Network sites", Invited speaker, Michigan State University, November 29, 2012.
- "Interactive Support for Secure Programming," Invited speaker, Center for Advanced Security Research, TU Darmstadt, June 28, 2012.
- "Improving Privacy on Social Network Sites", Invited speaker, Winthrop University, November 17, 2011.
- "Personal Privacy Management", Invited speaker, Colorado School of Mines, April 22, 2011.
- "Personal Privacy Management", Invited speaker, University of Colorado at Boulder, April 21, 2011.
- "Personal Privacy Management", Invited speaker, Workshop on Usable Security and Privacy, Darmstadt, Germany, March 10, 2011.
- "Improving Privacy on Social Network Sites", Invited DUB seminar speaker, University of Washington, July 7, 2010
- "Improving Privacy on Social Network Sites," Invited speaker, Microsoft Research, July 6, 2010
- "Improving Privacy on Social Network Sites", Invited speaker, CHI Mentoring Workshop, April 10, 2010.

- "Improving Privacy on Social Network Sites," Invited seminar speaker, Virginia Tech, February 26, 2010
- Panelist for "Tweeting, Blogging and Linking Your Way to Success," North Carolina Technology Association, Women in Science and Engineering event, Sept. 9, 2009.
- "Considering the User in Security and Privacy." 7th Annual UNCC Cyber Security Symposium, October 10, 2007.
- Panelist on Charlotte Talks with Mike Collins (radio), program on Usability. May 8, 2007.
- "Design and Evaluating Meeting Capture and Access Services," Intel Research Labs, Seattle, WA, October 3, 2003.
- "Understanding Meeting Capture and Access," IBM Research, Cambridge, MA, June 7, 2002.

9.2.2 Journal/Conference Reviewer

- Conference on Human Factors in Computing Systems (CHI)
- Conference on Computer Supported Cooperative Work (CSCW)
- Transactions on Human Computer Interaction (TOCHI)
- IEEE Pervasive Computing Magazine
- International Conference on Ubiquitous Computing (Ubicomp)
- IEEE Conference on Pervasive Computing
- IBM Systems Journal
- ACM Symposium on User Interface Software and Technology (UIST)
- ACM Transactions on Software Engineering
- Grace Hopper Conference on Women in Computing
- Communications of the ACM
- British Computer Society Conference on HCI
- International Conference on Information Systems (ICIS)
- IEEE Internet Computing
- IEEE Transactions on Dependable and Secure Computing
- Journal of Broadcasting & Electronic Media

9.2.3 Program Committees

- Conference on Human Factors in Computing Systems (CHI), 2011, 2012, 2017
- Symposium on Usable Security and Privacy (SOUPS), 2014, 2016
- European Workshop on Usable Security (EuroUSec), 2016
- NDSS Workshop on Usable Security (USec), 2015, 2016
- Conference on World Wide Web (WWW), Security and Privacy track, 2015
- CSCW Networked Privacy Workshop, 2015.
- Conference on Computer Supported Cooperative Work (CSCW), 2013
- 5th International Conference on Trust and Trustworthy Computing (TRUST SES), 2012
- 14th International Symposium on Stabilization, Safety, and Security of Distributed Systems, 2012
- Colloquium for Information Systems Security Education (CISSE), 2011
- IEEE International Workshop on Future Trends of Distributed Computing (FTDCS), 2011
- Workshop on Assurable & Usable Security Configuration (SAFEConfig), 2009, 2011, 2012
- Grace Hopper Conference on Women in Computing, 2009
- Charlotte Visualization Symposium, 2008
- International Conference on Ubiquitous Computing (Ubicomp), 2007

9.2.4 Organizing Committees

- Steering Committee: Symposium on Usable Privacy and Security, 2012-present
- Technical Program Co-Chair: Symposium on Usable Privacy and Security, 2011, 2012
- Co-Organizer: Workshop on Security Information Workers, SOUPS, 2016
- Co-Organizer: Workshop of Usable Security and Privacy Education, SOUPS, 2015
- Co-Organizer: Workshop on Security Information Workers, CCS, 2014
- Discussion Sessions Chair: Symposium on Usable Privacy and Security, 2010
- Program Committee Co-Chair: Workshop on Assurable & Usable Security Configuration, 2010
- Organizer: Workshop on Reconciling Privacy with Social Media, CSCW 2012
- Organizer: Workshop on Security and Privacy in Online Social Networking, SocialCom 2009

9.2.5 Professional Affiliations/Memberships

- ACM
- ACM SIGCHI
- IEEE

9.2.6 Community Service

- Panel reviewer, National Science Foundation, 2010, 2012, 2013, 2014, 2015, 2016
- Reviewer for usable security curriculum initiative, Western Illinois University, 2010

9.3 Internal Service

9.3.1 University Committees

- Criminal Justice Department chair search committee, 2015.
- Graduate Council, CCI representative, 2012-2013
- Faculty Council, SIS representative, 2012-2013
- Faculty Welfare Committee, 2011-present
- Cognitive Science Academy Steering Committee, 2006-present
- Center for Humanities, Technology, and Science Advisory Council, 2007-2009

9.3.2 College Committees

- College Review Committee, 2012-2013
- Diversity Committee, 2006-2010
- Graduate Committee, 2005-2013, 2014-2015; chair 2012-2013
- PhD Steering Committee, 2006-2008
- Chair, Ad hoc PhD Recruiting Committee, 2006-2007

9.3.3 Department Committees

- Graduate Program Director, 2015-present
- Department Review Committee, 2011-2012, chair 2014-2015
- SIS Department Chair search committee, 2011-2012
- Undergraduate Committee, 2010-2011
- Strategic Planning Committee, 2009-2010
- Faculty Search Committee, 2005-2006, 2008-2009, 2013-2014, 2015-2016
- TA Selection Committee, 2006-2008
- Graduate Committee, 2005-2008, 2012-present, Chair: 2006-2007, 2015-present

9.3.4 Ph.D. Dissertation/Master's Thesis/Baccalaureate (Honors) Committees

- Catherine Zanbaka, CS, Ph.D. May 2007

- Evan Suma, CS, Ph.D. May 2010
- Bjarne Berg, BISOM, Ph.D. May 2010
- Scott Barlowe, CS, Dec. 2011
- Okan Pala, SIS, December 2014
- Wenwen Dou, CS, Ph.D. May 2012
- Nadia Najjar, SIS, Ph.D. May 2015
- Erin Cherry, SIS, Ph.D. May 2013
- Carlos Seminario, SIS, Ph.D. May 2015
- Jun Zhu, SIS, Ph.D. May 2015
- Osarieme Omokaro, CS, Ph.D. August 2014
- Scott Heggen, CS, Ph.D. August 2014
- Alberto Gonzalez, SIS, Ph.D. August 2015
- Emmanuel Bello-Ogunu, SIS, Ph.D. August 2016
- Abeer Al Jarrah, SIS, Ph.D. in progress
- Mahmoud Mohammadi, SIS, Ph.D. in progress

- Maliq Aqdas, Aalto University, Ph.D. 2016
- Pooya Jaferian, University of British Columbia, Ph.D. 2014

- Brent Daugherty, CS, UNC Charlotte, M.S. May 2008
- Jason Whaley, SIS, UNC Charlotte, M.S. May 2008
- Jia Yue, SIS, UNC Charlotte, M.S. Dec. 2009
- Mitchell McGregor, Architecture, UNC Charlotte, M.S. 2012
- Samantha Finkelstein, UNC Charlotte, B.S. honors, 2011

9.4 Other Service

- Seminar co-organizer, Charlotte Visualization Center, 2006-2011
- Faculty Advisor for CCI Grads student group, 2006-2014
- Faculty Advisor for Interact student group, 2009-present
- Regular presenter for high school open houses and visits

10 Leadership

- Established HCI as a core area in the department through research and teaching efforts. This has attracted a number of students to the courses and to graduate school, and provided visibility to UNC Charlotte at international conferences.
- Helped to increase the visibility of usable security and privacy research by serving on program committees, organizing workshops, and giving invited talks.
- Leading the expansion of usable security and privacy education through creating a body of knowledge and online learning modules.
- Mentored a large number of students, including large numbers of women and minorities, in research projects. This has led to students presenting posters and papers at top venues such as CHI and SOUPS.
- Directing the department's Master's programs, including new programs in cyber security.

11 Research Statement

My research is in the field of Human Computer Interaction (HCI), where my primary focus is in the area of Usable Security and Privacy. All of my work is concerned with understanding the ways people use information to accomplish their tasks; and subsequently designing and evaluating new tools and interfaces for presenting and interacting with that information. My research methodology is to first utilize qualitative and quantitative methods to understand the human behaviors and needs in a particular domain, design and prototype interactions and interfaces to meet those needs, and finally evaluate the potential impact of those prototypes.

Usable Security and Privacy is my primary research focus. Specifically, I am interested in providing usable mechanisms for individuals to manage and protect their personal information. Privacy is a process through which we manage and maintain the boundaries of social interaction. For example, users of social network sites have a variety of mechanisms and features that they use for managing their privacy, such as choosing who to friend, how to group friends, and with whom to share photos [C27]. Yet, while users are considering what is safe and acceptable to share, they can easily overlook the reach of their information and accidentally disclose more than intended [C14]. To cope, users employ a variety of behaviors outside of the interface, such as self-censoring or only posting positive thoughts [C30].

With these lessons in mind, we have developed a number of prototypes to manage the privacy of various aspects of social network sites, such as profile privacy settings [C13, C18], photos [C20], and third party applications [C16]. For each of these, we sought to provide users with greater awareness of how information is being shared, and greater control over that sharing. We have also investigated general mechanisms to support decision making for personal privacy policies through the use of community feedback [C23, J8], as well as mechanisms for allowing users to make privacy decisions in the context of their regular activities. I am now interested in expanding upon this research to investigate how we can directly support social processes, such as social influence, within interfaces to help people make security or privacy decisions in a variety of settings [C33].

Interactive Support of Secure Programming is another thread of research integrating my background in Human Computer Interaction, Software Engineering, and Information Security. Secure Programming is writing code that is resistant to malicious attacks. We are investigating tool support in the IDE that promotes secure programming [C25], reminding programmers of potential vulnerabilities and helping them to perform secure practices. In addition, interactions with developers can enable detection of application-specific security vulnerabilities, such as access control issues [C39, C43]. I am interested in how this tool support impacts users' programming practices and their conceptual models of secure application development [C31, C40]. We are also investigating whether such a tool can help to educate students throughout a computing curriculum by providing warnings and information on security vulnerabilities while they program their assignments [C38, C34]. We are further expanding this technique into testing and code review [42].

12 Teaching Statement

Since joining the Department of Software and Information Systems, I have worked to establish HCI as a core part of the departmental curriculum, expand course offerings, and draw in a diverse body of students to those courses. I believe HCI can serve as an important bridge between the department and other fields, supporting interdisciplinary education and research. I designed the original curriculum for the foundational HCI courses, and have collaborated with other faculty to update that curriculum for a

"flipped" style course using online videos for lectures and significant in-class activities. I have also developed a course in Usable Security and Privacy, which is now offered annually to both graduate and undergraduate students. This course bridges two key areas of the department, attracting students from both HCI and security. Finally, I taught our introductory Web programming course for several years, modifying the course to become a "flipped" class with labs and active learning and discussion in the classroom [C37].

I am a proponent of active learning in all of my courses, replacing in-class lectures with labs, discussion, and structured group activities. My courses also all include projects, where students utilize the techniques covered in class towards a substantial, and creative, outcome. Students in the HCI courses design and evaluate novel interface prototypes, while students in the Web Development course create a unique web site for some other individual or group. I believe these projects have successfully demonstrated to students that creating usable software is quite challenging, yet can be accomplished by utilizing the user centered design, implementation, and evaluation techniques they learn throughout the courses.

I believe that mentoring and providing research opportunities to students, particularly women and minorities, is important in recruiting and retaining talented students in computing. I have helped to lead a Broadening Participation in Computing nationwide alliance called STARS, promoting student-led regional engagement of diverse computing students to improve recruitment and retention. At UNC Charlotte, I have supervised a large number of senior projects and REU undergraduate students. Several of these research projects resulted in conference posters and published papers. I have graduated four Ph.D. students who went on to academic careers of their own. My goal is to develop the research, teaching, and service skills of my students as a basis for their own careers in computing research and education.