

Tera L. Reynolds

Assistant Professor
Department of Information Systems
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Research Interests

I take a socio-technical approach to understand how we can improve the design and implementation of technologies that connect, facilitate interaction, and support the independent and collaborative work of individuals (e.g., patients, citizens) and health professionals (e.g., doctors, public health practitioners). I am particularly interested in examining how we can mitigate the risk of these technologies worsening health disparities.

Education

- August 2021 **PhD, Informatics**, University of California, Irvine, CA
Committee: Kai Zheng, PhD (Chair); Yunan Chen, PhD; Scott Rudkin, MD, MBA, RDMS, FAAEM, FACEP
Thesis: *Designing Health Interface Technologies to Support Patient Work*
- April 2016 **MA, Information**, University of Michigan, Ann Arbor, MI
- May 2011 **MPH, Epidemiology, International Health**, Boston University, Boston, MA
Advisor: Katherine Semrau, PhD, MPH
Thesis: *Internet for Reproductive & Sexual Health Information Dissemination to Brazilian Somerville Primary Care Patients*
- June 2007 **BA, Biology**, Magna cum laude, Lawrence University, Appleton, WI

Positions

- Current Assistant Professor, University of Maryland, Baltimore County, MD (2021–)
- Past Graduate Student Researcher, University of California, Irvine, CA (2016–2021)
Teaching Assistant, University of California, Irvine, Irvine, CA (2016–2017)
Graduate Student Instructor, University of Michigan, Ann Arbor, MI (2015–2016)
Graduate Student Researcher, University of Michigan, Ann Arbor, MI (2014–2016)
Program Manager, International Society for Disease Surveillance, Boston, MA (2011–2014)
Health Education Intern, Boston University Student Health Services, Boston, MA (2010–2011)

Tera L. Reynolds

Brazilian Internet Use Data Analysis Intern, Institute for Community Health, Boston, MA (9/2010–12/2010)

Trachoma Project Monitoring and Evaluation Intern, School for Field Studies, Loitokitok District, Kenya (5/2010–6/2010)

Honors and Awards

- 2020 AMIA Consumer and Pervasive Health Working Group Student Paper Award
- 2019–Present GAANN Fellowship in Socially-Responsible AI (\$87,507.44)
- 2019–2020 Fred M. Tongue Endowed Graduate Award in ICS (\$1,000)
- Inducted 2011 Delta Omega Honorary Society in Public Health, Member, Boston University School of Public Health

Publications

- Journal Articles
- J.9 He L.*, He C.*, **Reynolds T.L.**, Bai Q., Huang Y., Li C., Zheng K., Chen Y. Why Do People Oppose Mask Wearing? A Comprehensive Analysis of US Tweets During the COVID-19 Pandemic. *J Am Med Inform Assoc*. Published online March 2021: ocab047. doi:[10.1093/jamia/ocab047](https://doi.org/10.1093/jamia/ocab047).
*Denotes equal contribution.
 - J.8 Caldeira C., Gui X., **Reynolds T.L.**, Bietz M., Chen Y. Managing Healthcare Conflicts when Living With Multiple Chronic Conditions. *International Journal of Human-Computer Studies*. Published online June 2020:102494. doi:[10.1016/j.ijhcs.2020.102494](https://doi.org/10.1016/j.ijhcs.2020.102494)
 - J.7 Gui X., Chen Y., Zhou X., **Reynolds T.L.**, Zheng K., Hanauer D.A. Physician champions' perspectives and practices on electronic health records implementation: challenges and strategies. *JAMIA Open*. Published online January 7, 2020:ooz051. doi:[10.1093/jamiaopen/ooz051](https://doi.org/10.1093/jamiaopen/ooz051).
 - J.6 Hussain M.I., **Reynolds T.L.**, Zheng K. Medication safety alert fatigue may be reduced via interaction design and clinical role tailoring: a systematic review. *JAMIA*. 2019; 26(10): 1141-1149. doi:[10.1093/jamia/ocz095](https://doi.org/10.1093/jamia/ocz095).
 - J.5 **Reynolds T.L.**, DeLucia P.R., Esquibel K.A., Gage T., Wheeler N.J., Randell J.A., Stevenson J.G., and Zheng K. Evaluating a Handheld Decision Support Device in Pediatric Intensive Care Settings. *JAMIA Open*. 2019; 2(1): 49-61. doi:[10.1093/jamiaopen/ooy055](https://doi.org/10.1093/jamiaopen/ooy055).
 - J.4 Zheng K., Abraham J., Novak L.L., **Reynolds T.L.**, Getting A. A survey of the literature on unintended consequences associated with health information technology: 2014–2015. *Yearb Med Inform*. 2016. doi:[10.15265/IY-2016-036](https://doi.org/10.15265/IY-2016-036).

- J.3 Charles-Smith L.E., **Reynolds T.L.**, Cameron M.A., et al. Using Social Media for Actionable Disease Surveillance and Outbreak Management: A Systematic Literature Review. *PLOS ONE*. 2015; 10(10):e0139701. doi:[10.1371/journal.pone.0139701](https://doi.org/10.1371/journal.pone.0139701).
- J.2 Dórea F.C., Dupuy C., Vial F., **Reynolds T.L.**, Akkina J.E. Toward One Health: are public health stakeholders aware of the field of animal health? *Infection Ecology & Epidemiology*. 2014;4(0). doi:[10.3402/iee.v4.24267](https://doi.org/10.3402/iee.v4.24267).
- J.1 Mirza N.,[§] **Reynolds T.**, Coletta M., Suda K., Soyiri I., Markle A., Leopold H., Lenert L., Samoff E., Siniscalchi A., Steichert L. Steps to a sustainable public health surveillance enterprise a commentary from the international society for disease surveillance. *Online Journal of Public Health Informatics*. 2013; 5(2): 210. doi:[10.5210/ojphi.v5i2.4703](https://doi.org/10.5210/ojphi.v5i2.4703).
- Conference Papers
C.8 Lu X., **Reynolds T.L.**, Jo E., Hong H., Page X., Chen Y., and Epstein D. Comparing Perspectives around Human and Technology Support for Contact Tracing. In: *CHI Conference on Human Factors in Computing Systems (CHI '21)*. Yokohama, Japan; 2021. doi:[10.1145/3411764.3445669](https://doi.org/10.1145/3411764.3445669).
- C.7 **Reynolds T.L.**, Ali N.,[§] and Zheng K. What Do Patients and Caregivers Want? A Systematic Review of User Suggestions to Improve Patient Portals. In: *AMIA Annual Symposium Proceedings*. Virtual; 2020. PMID: [33936483](https://pubmed.ncbi.nlm.nih.gov/33936483/).
- C.6 **Reynolds T.L.**, Clay B., Rudkin S.E., Beckham S., Perret D., Glandorf J., Patton P., Longhurst C., and Zheng K. Migrating from One Comprehensive Commercial EHR to Another: Perceptions of Front-line Clinicians and Staff. In: *AMIA Annual Symposium Proceedings*. Washington, D.C.; 2019. PMID: [32308872](https://pubmed.ncbi.nlm.nih.gov/32308872/).
- C.5 Costa Figueiredo M., Caldeira C., **Reynolds T.L.**, Victory S., Zheng K., Chen Y. Self-Tracking for Fertility Care: Collaborative Support for a Highly Personalized Problem. *Proceedings of the ACM on Human-Computer Interaction*. 2017;1(CSCW):1-21. doi:[10.1145/3134671](https://doi.org/10.1145/3134671).
- C.4 Eletriby M.R., **Reynolds T.L.**, Jain R., Zheng K. Investigating named entity recognition of contextual information in online consumer health text. In: *2017 Eighth International Conference on Intelligent Computing and Information Systems (ICICIS)*; 2017:396-402. doi: [10.1109/INTELCIS.2017.8260078](https://doi.org/10.1109/INTELCIS.2017.8260078).
- C.3 **Reynolds T.L.**, Ali N.,[§] McGregor E.,[§] et al. Understanding Patient Questions about their Medical Records in an Online Health Forum: Opportunity for Patient Portal Design. In: *AMIA Annual Symposium Proceedings*. Washington, D.C.; 2017. PMID: [29854216](https://pubmed.ncbi.nlm.nih.gov/29854216/).

- C.2 Gui X., Wang Y., Kou Y., **Reynolds T.L.**, Chen Y., Qiaozhu M., Zheng K. Understanding the Patterns of Health Information Dissemination on Social Media during the Zika Outbreak. In: *AMIA Annual Symposium Proceedings*. Washington, D.C.; 2017. PMID: [29854148](#).
- C.1 Hussain M.I., **Reynolds T.L.**, Mousavi F.E., Chen Y., Zheng K. Thinking Together: Modeling Clinical Decision-Support as a Sociotechnical System. In: *AMIA Annual Symposium Proceedings*. Washington, D.C.; 2017. PMID: [29854164](#).
- Conference Abstracts **Reynolds T.L.**, Kaligotla M., Zheng K. Are Smartphone-based Interconnected Personal Health Records Achieving Their Promise? In: *AMIA Annual Symposium Proceedings*. San Diego, CA, USA; 2021.
- A.10
- A.9 **Reynolds T.L.**, Gui X, Chen Y, Zheng K. Understanding U.S. Adults' Zika Virus Risk Perceptions and Mitigation Behaviors to Improve Technology-supported Risk Communication. *Stud Health Technol Inform*. In: *Medinfo 2019 Proceedings*. doi: [10.3233/SHTI190691](#).
- A.8 Brannon E.S., **Reynolds T.**, Fu S., Harden K., Okullo D., and Ramani S. An eHARS Dashboard for State HIV Surveillance. *Online Journal of Public Health Informatics*. In: *ISDS Annual Conference Proceedings*. 2016; 8(1). doi: [10.5210/ojphi.v8i1.6509](#).
- A.7 **Reynolds T.L.**, Vydiswaran V.G.V., Wu Y., Mei Q., Hanauer D.A., Zheng K. Identifying Patterns Indicative of Copying/Pasting Behavior in Patient Generated Online Content. In: *AMIA Annual Symposium Proceedings*. San Francisco, CA, USA; 2015.
- A.6 **Reynolds T.**, Gordon S., Soper P., Buehler J., Hopkins R., and Streichert L. Syndromic Surveillance Practice in the United States 2014: Results from a Nationwide Survey. *Online Journal of Public Health Informatics*. In: *ISDS Annual Conference Proceedings*. 2015; 7(1): e90. doi: [10.5210/ojphi.v7i1.5756](#).
- A.5 Suda K.J., **Reynolds T.**, Akkina J., Halasz S., and Burkom H. Where do you Find Interesting Biosurveillance Publications? *Online Journal of Public Health Informatics*. In: *ISDS Annual Conference Proceedings*. 2015; 7(1). doi: [10.5210/ojphi.v7i1.5831](#).
- A.4 **Reynolds T.**, Cameron M., Conway M., Ising A., Lau E.H.Y., Olsen J., Pavlin J., Storm B., Suda K., and Corley C. Using Social Media for Biosurveillance: Gap between Research and Action. *Online Journal of Public Health Informatics*. In: *ISDS Annual Conference Proceedings*. 2014; 6(1). doi: [10.5210/ojphi.v6i1.5195](#).

Tera L. Reynolds

- A.3 **Reynolds T.**, Storm B., Fine A., Burkom H., Stout T., and Del Rio Vilas V. Results from the Biosurveillance Technical Opportunity Prioritization Survey. Online Journal of Public Health Informatics. In: *ISDS Annual Conference Proceedings*. 2014; 6(1). doi: [10.5210/ojphi.v6i1.5160](https://doi.org/10.5210/ojphi.v6i1.5160).
- A.2 **Reynolds T.**, Suda K., Reeder B., Storm W., Ozonoff A., and Burkom H. Collaboration for Improved Disease Surveillance Literature Review. Online Journal of Public Health Informatics. In: *ISDS Annual Conference Proceedings*. 2013; 5(1). doi: [10.5210/ojphi.v5i1.4375](https://doi.org/10.5210/ojphi.v5i1.4375).
- A.1 **Reynolds T.**, Painter I., and Streichert L. Data Quality: A Systematic Review of the Biosurveillance Literature. Online Journal of Public Health Informatics. In: *ISDS Annual Conference Proceedings*. 2013; 5(1). doi: [10.5210/ojphi.v5i1.4376](https://doi.org/10.5210/ojphi.v5i1.4376).
- Workshop Abstracts and Papers **Reynolds T.L.**, Dameff C., Longhurst C.A., Zheng K. Who's Left Behind by Smartphone-based Personal Health Records? *WISH @ AMIA*. Virtual; 2020.
- Reynolds T.L.**, McGregor E.,[§] Zheng K. "Where am I?" Finding Patients in the Process of Navigating a Complex Clinical Information Space. *WISH @ AMIA*. Washington, D.C.; 2017.
- Doctoral Consortia **Reynolds T.L.** "Designing Health Interface Technologies to Support Patients' and Healthcare Providers' Individual and Collaborative Work." *IEEE International Conference on Healthcare Informatics (ICHI) 2020 Doctoral Consortium*. Virtual; 2020. doi:[10.1109/ICHI48887.2020.9374368](https://doi.org/10.1109/ICHI48887.2020.9374368).
- Reynolds T.L.** "Designing Health Interface Technologies to Support Patients' and Healthcare Providers' Individual and Collaborative Work." *14th International Conference on Design Science Research in Information Systems and Technology (DESRIST 2019) Doctoral Consortium*. Worcester Polytechnic Institute, Worcester, MA; 2019.
- Papers in Review Grant K.,* **Reynolds T.L.**,* Zheng K., Feaster W., Chogle A., Sharief T., Grant A., and Ehwerhemuepha L. The Impact of COVID-19 and the Rapid Adoption of Telehealth on Provider Burnout in a Pediatric Healthcare Organization. *Under review*.
- *The first two authors wish to be regarded as joint first authors.
- Reynolds T.L.**, Zhang J.,[§] Zheng K., and Chen Y. Understanding and Using Laboratory Test Results in an Online Health Community (*Working Title*).
- Papers in Manuscript **Reynolds T.L.**, Ali N., Mei Q., Chen Y., Hanauer D.A., Rudkin S.E., and Zheng K. Implementing Patient Portals into a Complex Ecosystem: A Systematic Review of the Factors Affecting Patient Acceptance.
- Reynolds T.L.**, Chen Y., and Zheng K. Health Interface Technologies Connecting Patients and Healthcare Providers: Opportunities and Challenges.

Tera L. Reynolds

Reynolds T.L., Chen Y., and Zheng K. Health Interface Technologies Connecting the Public and Public Health Professionals: Opportunities and Challenges.

§Student or trainee.

Other Research Activities

Consortia IEEE International Conference on Healthcare Informatics (ICHI) 2020 Doctoral Consortium. Virtual; 2020.

Consortium for the Science of Sociotechnical Systems (CSST). Rutgers, New Brunswick, NJ, USA; 2019.

Human Computer Interaction Consortium (HCIC). Watsonville, CA, USA; 2019.

14th International Conference on Design Science Research in Information Systems and Technology (DESRIST 2019) Doctoral Consortium. Worcester Polytechnic Institute, Worcester, MA; 2019.

Workshops Workshop on Interactive Systems in Healthcare (WISH) @ AMIA. Virtual; 2020.

Workshop on Interactive Systems in Healthcare (WISH) @ AMIA. Washington, D.C.; 2017.

Research Experience

2020–Present Improving the Adoption and Use of a Smartphone-based PHR among Adult Patients of Two Academic Healthcare Systems: A Mixed Methods Project, Graduate Student Researcher, University of California, Irvine, CA

2016–2021 Understanding Patient Questions Containing their Clinical Data and the Types of Peer-Patient Replies they Find Useful: Qualitative Analyses in an Online Health Forum, Graduate Student Researcher, University of California, Irvine, CA (*Dissertation Research*)

2016–2021 Patient Portal Systematic Literature Review, Graduate Student Researcher, University of California, Irvine, CA (*Dissertation Research*)

2017–2018 DiallySafe Project, Graduate Student Researcher, University of California, Irvine, CA

2017–2018 UCI Health Migration to New Comprehensive Electronic Health Record, Graduate Student Researcher, University of California, Irvine, CA

2017 iCONCUR: informed CONsent for Clinical data and biosample Use in Research, Graduate Student Researcher, University of California, Irvine, CA

Tera L. Reynolds

- 2014 Syndromic Surveillance Practice in the United States Survey, International Society for Disease Surveillance, Boston, MA
- 2013 Survey of Biosurveillance Practitioners to Prioritize Technical Opportunities, International Society for Disease Surveillance, Boston, MA
- 2012–2014 Using Social Media for Biosurveillance Systematic Literature Review, International Society for Disease Surveillance, Boston, MA
- 2012–2014 Data Quality for Biosurveillance Systematic Literature Review, International Society for Disease Surveillance, Boston, MA
- 9/2010–12/2010 Brazilian Internet Use Study, Data Analysis Intern, Institute for Community Health, Boston, MA
- 5/2010–6/2010 Trachoma Project, Monitoring and Evaluation Intern, School for Field Studies, Loitokitok District, Kenya

Teaching

- Fall 2021 **Software and Hardware Concepts** (undergraduate), Department of Information Systems, University of Maryland, Baltimore County. Instructor.
- Spring 2017 **Computer Supported Cooperative Work** (undergraduate), Donald Bren School of Information and Computer Sciences (ICS), University of California, Irvine. Teaching Assistant for Dr. Gloria Mark.
- Winter 2017 **Project in Health Informatics** (undergraduate), Donald Bren School of Information and Computer Sciences (ICS), University of California, Irvine. Teaching Assistant for Dr. Kai Zheng.
- Fall 2016 **Invitation to Computing** (undergraduate), Donald Bren School of Information and Computer Sciences (ICS), University of California, Irvine. Teaching Assistant for Drs. Debra Richardson and Amelia Regan.
- 2015–2016 **Programs, Information, and People** (undergraduate), School of Information, University of Michigan, Ann Arbor. Graduate Student Instructor for Dr. Paul Resnick (2 semesters).
- Guest Lectures **Project in Health Informatics** (undergraduate), “*Patient Portals*,” Donald Bren School of Information and Computer Sciences, University of California, Irvine. Winter 2019.
- Consumer Health Informatics** (graduate), “*Personal Health Records and Patient Portals*,” Donald Bren School of Information and Computer Sciences, University of California, Irvine. Winter 2021.

Mentoring

- MPH Students Nabila Mirza, Graduate Student Intern, International Society for Disease Surveillance, Boston, MA (2012–2013)
- BS Students Jiawen Zhang, Research Assistant, University of California, Irvine, CA (*Kai Zheng, Faculty Advisor; 2020–2021*)
- Meghna Kaligotla, Research Assistant, University of California, Irvine, CA (*Kai Zheng, Faculty Advisor; 2020–2021*)
- Nida Ali, Internship Preceptor, University of Michigan, Ann Arbor, MI (*Kai Zheng, Faculty Advisor; 2015–2016*)
- Emma McGregor, Student Research Volunteer, University of Michigan, Ann Arbor, MI (*Kai Zheng, Faculty Advisor; 2015*)

Talks and Presentations

- Invited Talks *“What Do Patients and Caregivers Want? A Systematic Review of User Suggestions to Improve Patient Portals.”* Consumer and Pervasive Health Working Group Meeting. AMIA Annual Symposium. Virtual; Nov. 15, 2020.
- Conference and Workshop Talks *“What Do Patients and Caregivers Want? A Systematic Review of User Suggestions to Improve Patient Portals.”* AMIA Annual Symposium 2020. Virtual; November 17, 2020.
- “Who’s Left Behind by Smartphone-based Personal Health Records?”* WISH @ AMIA 2020. Virtual; November 14, 2020.
- “Migrating from One Comprehensive Commercial EHR to Another: Perceptions of Front-line Clinicians and Staff.”* AMIA Annual Symposium 2019. Washington, D.C.; November 18, 2019.
- “Understanding Patient Questions about their Medical Records in an Online Health Forum: Opportunity for Patient Portal Design.”* AMIA Annual Symposium 2017. Washington, D.C.; November 7, 2017.
- “‘Where am I?’ Finding Patients in the Process of Navigating a Complex Clinical Information Space.”* WISH @ AMIA 2017. Washington, D.C.; November 4, 2017.
- “Collaboration for Improved Disease Surveillance Literature Review.”* 2012 ISDS Annual Conference. San Diego, CA; December 4-5, 2012.
- “Data Quality: A Systematic Review of the Biosurveillance Literature.”* 2012 ISDS Annual Conference. San Diego, CA; December 4-5, 2012.

Tera L. Reynolds

Poster Presentations “*Understanding U.S. Adults’ Zika Virus Risk Perceptions and Mitigation Behaviors to Improve Technology-supported Risk Communication.*” Medinfo 2019, Lyon, France; August 24, 2019.

“*Identifying Patterns Indicative of Copying/Pasting Behavior in Patient Generated Online Content.*” AMIA Annual Symposium 2015, San Francisco, CA, USA; November 16, 2015.

Service

Reviewing **Conferences:** World Congress of Medical and Health Informatics (MedInfo), American Medical Informatics Association (AMIA) Annual Symposium, ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW), ACM Conference on Human Factors in Computing Systems (CHI), Hawaii International Conference on System Sciences (HICSS), International Conference on Human-Computer Interaction (INTERACT), International Society for Disease Surveillance (ISDS)

Journals: Journal of the American Medical Informatics Association (JAMIA), Applied Clinical Informatics (ACI), American Journal of Tropical Medicine and Hygiene (AJTMH), BMC Medical Informatics and Decision Making

Conference Planning and Implementation AMIA Annual Symposium Student Volunteer (2018, 2017, 2016)

Staff Liaison, Scientific Program Committee, International Society of Disease Surveillance Annual Conference (6/2011–8/2014)

Member, Outstanding Student Abstract Award Committee, International Society of Disease Surveillance Annual Conference (6/2012-8/2014)

Diversity and Inclusion Graduate Student Mentor, exploreCSR Workshop: Computing to Change the World for the Better, California State Long Beach, Long Beach, CA (*Yunan Chen, Faculty Mentor*; 2019)

School and Community Resource Volunteer, United States Peace Corps, Northern Cape Province, South Africa (2007–2009)

Student Mentor, Girls Exploring Math and Science (GEMS), Lawrence University, Appleton, WI (2006–2007)

Student Mentor, Partners Reaching Youth in Science and Math (PRYSM), Lawrence University, Appleton, WI (2004–2007)

Tutor, Boys and Girls Club of the Fox Valley, Appleton, WI (2003–2007)

Service-oriented Honor Societies Mortar Board Senior Academic National Honor Society, Member, Lawrence University Chapter (2006–2007)

Tera L. Reynolds

Lambda Sigma Sophomore Academic National Honor Society, Member, Lawrence University Chapter (2004–2005)

Other Health and Information Lab Manager (2014–2019)

Grants and Contracts

Unfunded R21, Submitted October 2016
Agency for Health Care Research and Quality (AHRQ)
“Patient questions about their medical records and the implications for patient portal redesign”

Professional Affiliations

Current American Medical Informatics Association (2015–Present)
American Public Health Association (2011–2014, 2020–Present)
National Peace Corps Association (2007–Present)

Past International Society for Disease Surveillance (2011–2014)

Skills

HCI User interviews, Survey methods, Content analysis, Grounded theory, Quantitative data analysis methods

Programming Python, R, Statistical Analysis Software (SAS)

Qualitative Analysis Software NVivo, Dedoose

Other Software Piktochart (infographic design)

Other Database management

Language Spanish (beginner level), Setswana (beginner level)

References

Kai Zheng, PhD, Professor, Department of informatics, UCI

Yunan Chen, PhD, Associate Professor, Department of informatics, UCI

Tera L. Reynolds

Scott Rudkin, MD, MBA, RDMS, FAAEM, FACEP, Chief Medical Information Officer, Clinical Professor of Emergency Medicine, UCI Medical Center/School of Medicine