

STEPHANIE K. FURNISS

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EDUCATION

Ph.D. Biomedical Informatics	Arizona State University, Phoenix, AZ	May 2017
M.S. Biomedical Informatics	Arizona State University, Phoenix, AZ	August 2013
B.A. Biochemistry	Colorado College, Colorado Springs, CO Minors: Indian Cultural Studies, Feminist and Gender Studies	May 2009
Study Abroad	Associated Colleges of the Midwest, Pune, India Homestay Experience	Jul.-Dec. 2007

RELATED PROFESSIONAL EXPERIENCE

Assistant Research Professional , Arizona State University	Jan. 2017-Present
Clinical Informatician , Kern Center Informatics and Knowledge Management, Mayo Clinic, Rochester, MN	Jan. 2016-Present
<ul style="list-style-type: none">Effectively balanced demands of scientific research with the urgency and relevance in the applied clinical environment.Viewed as an effective intermediary between clinicians, researchers and IT analysts.Assisted in development of project objectives, approach, and documentation used to communicate to Mayo Clinic stakeholders.Applied rigorous data collection methodology to multiple sites.Documented data collection methodology in a user guide, which now serves as the standard workflow capture approach for Mayo Clinic.	
EHR Implementation Specialist , SKF Consulting, LLC (Scottsdale, AZ) and TechComply, LLC (Newport Beach, CA)	Nov. 2011-Dec. 2013
<ul style="list-style-type: none">Integrated informatics understanding with clinicians' perspectives to develop and implement innovative EHR solutions.Facilitated development of EHR Change Committee to improve practice's self-management ability.Improved effective and efficient EHR use through alignment of practice information sources with EHR.Led the implementation of Allscripts Pro EHR in two Vascular Surgical Practices consistent with physician and Meaningful Use objectives.Provided ongoing Allscripts support to nine other surgical practices and central billing office (CBO).Improved billing quality and timing through CBO analysis and follow-up physician training.Decreased physician charting time through configuration and training of NoteSwift and Dragon.	
Intern , Arizona Regional Extension Center	Sept.-Nov. 2011
<ul style="list-style-type: none">Learned requirements and limitations of an EHR system from the clinical-user perspective.Identified source of workflow pain points and effectively communicated issue, cause, and recommended solution.	
Biochemistry Research Assistant and Lab Manager , Colorado College	Jan. 2007-Nov. 2010
<ul style="list-style-type: none">Designed, executed, and analyzed research studies on RNA thermodynamics and RNA-ion interactions.Created and developed a comprehensive orientation program for new research assistants.Taught and evaluated the lab component for two advanced Biochemistry courses.	

TEACHING, MENTORING & STUDENT ADVISING

- Database Management in Healthcare (BMI 410) - Course Director/Instructor** 2018-Present
Dept. of Biomedical Informatics, Arizona State University
- Developed learning and evaluation materials that emphasize application of concepts and critical thinking.
- Team Dynamics in Healthcare IT Projects (BMI 332) - Course Director/Instructor** 2018-Present
Dept. of Biomedical Informatics, Arizona State University
- Developed the curriculum loosely following project-based and constructivist teaching approaches.
 - Incorporated industry partners as mentors to student teams to support students' professional development and preparedness.
- Capstone I (BMI 482) - Course Instructor/Faculty Advisor** 2018-Present
Dept. of Biomedical Informatics, Arizona State University
- Capstone II (BMI 483) - Course Instructor/Faculty Advisor** 2018-Present
Dept. of Biomedical Informatics, Arizona State University
- Introduction to Clinical Informatics (BMI 201) - Course Instructor** 2017
Dept. of Biomedical Informatics, Arizona State University
- Applied Project (BMI 593) - Course Instructor/Faculty Advisor** 2017-Present
Dept. of Biomedical Informatics, Arizona State University
- Applied Project (BMI 593) - Course Director** 2017
Dept. of Biomedical Informatics, Arizona State University
- Enhanced the curriculum and standardized across faculty advisors and degree programs.
 - Developed position of BMI Applied Project Coordinator and served in the role.
- Student Supervising at Arizona State University** 2016-Present
- Komal Agrawal, Undergraduate Honors Project
 - Ephrance Kalungi, Undergraduate Capstone Project
 - Josie Lamp, Undergraduate Honors Project
 - Timothy Miksch, MAS Applied Project
 - Nathan Scheuer, MS Applied Project
 - Dylan Vas, MAS Applied Project
- Biochemistry I & II (CH382 & CH383) - Teaching Assistant** 2009-2010
Dept. of Chemistry & Biochemistry, Colorado College

RESEARCH EXPERIENCE

- Registry Of Operations and Tasks (ROOT) Project,** Jan. 2016-Present
Karl Poterack, MD, Mayo Clinic; Brad Doebbeling, MD, Arizona State University
- A multi-disciplinary project aiming to advance our understanding of clinical workflow best practices by integrating best-practice in clinical informatics workflow capture and analysis.
 - Led team of informaticists in application of rigorous data collection methodology.
 - Facilitated integration of academic researchers and clinical organization's stakeholders—vision, expectations, goals, timeline, research foci, etc.
 - Facilitated data triangulation efforts across research faculty and students.
- Workflow, Communication, and Care Coordination in Hospital Surgical Care,** Aug. 2013-2017
Advisor: David Kaufman, PhD, Arizona State University; Matthew Burton, MD, Mayo Clinic
- Study clinicians' workflow and information needs to inform redesign of information and knowledge management tools, supporting a practice redesign effort.
 - Investigate and explain how clinicians' coordinate patient care and the ways in which available resources (including information technologies) enable or impede these processes.
 - Characterize communication, coordination, and cognition of individual clinicians and clinical teams.

Resolving Ambiguity During ICU Patient Rounds,

June 2013-2016

Advisor: David Kaufman, PhD, Arizona State University

- Examine information gaps in patient rounds to understand how clinicians share knowledge, address questions and resolve ambiguities.

Integrative Approach for the Discovery of Potential Therapeutic Targets for Alzheimer's Disease,

Jan.-Aug. 2013

Advisor: Graciela Gonzalez, PhD, Arizona State University

- Assessed empirical data and knowledge related to Alzheimer's disease.
- Employed gene-prioritization interface towards discovery of new target genes.

Thermodynamic Examination of the Pyrophosphate Sensor Helix in the Thiamine

Jan. 2008-Nov. 2010

Pyrophosphate (TPP) Riboswitch, Advisor: Neena Grover, PhD, Colorado College

- Designed ds WT and modified RNA constructs with 2x2 bulge to mimic pyrophosphate binding domain of TPP Riboswitch.
- Quantified stabilizing contributions of conserved nucleotides involved in ion-mediated RNA-pyrophosphate binding, of non-canonical base pairs, and of nearest neighbors in 2x2 bulge.

Thermodynamics Examination of TAR-RNA of HIV-1,

Jan. 2008

Advisor: Neena Grover, PhD, Colorado College

- Assisted in design of ds WT and modified RNA and DNA constructs mimicking trinucleotide bulge that binds TAT protein.

Study of A•C and A+•C Base Pairs,

Jan.-July 2007, July-Aug. 2010

Advisor: Neena Grover, PhD, Colorado College

- Quantified stability of A•C base pairs on the 5' and 3' ends of dsRNA with its nearest neighbor.

PUBLICATIONS

Grando MA, Manataki A, Furniss SK, Duncan B, Solomon A, Kaufman D, Hirn S, Sunday R, Bouchereau J, Doebbeling BN, Burton MM, Poterack KA, Miksch T, Helmers RA. *Multi-Method Study of Electronic Health Records Workflows*. AMIA Annu Symp Proc. 2018.

Duncan BJ, Zheng L, Furniss SK, Doebbeling BN, Grando MA, Solomon AJ, Burton MM, Poterack KA, Miksch TA, Helmers RA, Kaufman DR. *Perioperative Medication Management: Reconciling Differences Across Clinical Sites*. Proceedings of the International Symposium on Human Factors and Ergonomics in Health Care. 2018;7(1):44-51.

Grando MA, Groat D, Furniss SK, Nowak J, Gaines R, Kaufman DR, Poterack KA, Miksch T, Helmers RA. *Using Process Mining Techniques to Study Workflows in a Pre-operative Setting*. AMIA Annu Symp Proc. 2017.

Furniss SK. *Modeling Clinicians' Cognitive and Collaborative Work in Post-Operative Hospital Care*. PhD diss., Arizona State University. 2017.

Furniss SK, Burton MM, Grando MA, Larson DW, Kaufman DR. *Integrating Process Mining and Cognitive Analysis to Study EHR Workflow*. AMIA Annu Symp Proc. 2016.

Furniss SK, Burton MM, Larson DW, Kaufman DR. *Modeling Patient-Centered Cognitive Work for High-Value Care Goals*. Proceedings of the International Symposium on Human Factors and Ergonomics in Health Care. 2016;5(1):112-119.

Kaufman DK, Furniss SK, Grando MA, Larson DW, Burton MM. *A Sequential Data Analysis Approach to Electronic Health Record Workflow*. Stud Health Technol Inform. 2015;218:120-125.

Chan CV, Mirkovic J, Furniss S, Kaufman DR. *eHealth literacy demands and cognitive processes underlying barriers in consumer health information seeking*. KM&EL. 2015;7(4):550-575.

Furniss SK, Yao R, Gonzalez G. *Automatic Gene Prioritization in Support of the Inflammatory Contribution to Alzheimer's Disease*. Summit on Translat Bioinforma. 2014; 42-47.

Furniss S, Grover N. *Thermodynamic examination of the pyrophosphate sensor helix in the thiamine pyrophosphate riboswitch*. RNA. 2011; 17: 710-717.

SCIENTIFIC ABSTRACTS

Furniss SK, Burton MM, Larson DW, Kaufman DR. *Modeling Patient-Centered Cognitive Work in Post-Operative Hospital Care*. Mayo Clinic Academic Excellence Day April 2016 and ASU-BMI Spring Symposium April 2016.

Furniss SK, Burton MM, Larson DW, Kaufman DR. *Modeling Patient-Centered Cognitive Work in Post-Operative Hospital Care*. Mayo Clinic OIKM Symposium Oct. 2015.

Furniss SK, Mirkovic J, Burton MM, Sunday R, Kaufman DR. *Hunters & Gatherers: Analysis of the Pre-Rounds Documentation Process*. Mayo Clinic Academic Excellence Day April 2014 and ASU-BMI Spring Symposium April 2014.

Furniss SK, Gaines RJ, Hum S, Mamykina L, Kaufman DR. *Resolving Ambiguity During ICU Patient Rounds*. ASU-BMI Spring Symposium April 2014.

Furniss SK. *EHR Use in Small Private Practices: A Case for a Centralized Steering Committee*. ASU-BMI Spring Symposium April 2013.

Furniss SK, Grover N. *Thermodynamics of small symmetrical internal loops in RNA: sequence, pH and ion effects*. FASEB J April 6, 2010 24:500.2.

Furniss SK, Grover N. *Thermodynamic contributions of divalent ion interactions with a symmetric internal loop in RNA*. FASEB J April 22, 2009 23:842.2.

Furniss SK. *A study of gender and heteronormativity in the rugby social subculture*. Western Departments of Anthropology and Sociology Undergraduate Research Conference. April 4, 2009.

SEMINARS and PRESENTATIONS

Furniss SK. *Modeling Clinicians' Cognitive and Collaborative Work in Post-Operative Hospital Care*. PhD diss. defense, Arizona State University, Scottsdale, AZ. March 30, 2017.

Furniss SK, Burton MM, Grando MA, Larson DW, Kaufman DR. *Integrating Process Mining and Cognitive Analysis to Study EHR Workflow*. AMIA Annu Symp, Chicago, IL. Nov. 15, 2016

Furniss SK, Burton MM, Larson DW, Kaufman DR. *Modeling Patient-Centered Cognitive Work for High-Value Care Goals*. International Symposium on Human Factors and Ergonomics in Health Care, San Diego, CA. April 15, 2016.

Furniss SK. *Automatic Gene Prioritization in Support of the Inflammatory Contribution to Alzheimer's Disease*. Summit on Translational Bioinformatics, San Francisco, CA. April 8, 2014.

Adams K, Worley L, Furniss SK. *Allscripts Professional EHR: Workflow and Optimization*. Allscripts Western User Group Conference, Denver, CO. April 27, 2012.

Furniss SK. *Thermodynamic contributions of divalent ion interactions with a symmetric internal loop in RNA*. The Colorado College. Feb. 6, 2009.

Furniss SK, Benson C, Vaughn I, Rubin A, Hellyer J. *The Science of HIV/AIDS*. Colorado Springs, CO. May 12, 2008.

GRANTS and FELLOWSHIPS

Research Fellowship , OIKM, Mayo Clinic EHR Workflow and Coordination Clinical Care	Aug. 2015-Dec. 2016
University Graduate Fellowship , Dept. of Biomedical of Informatics, Arizona State University Outstanding performance in the program and advancement to PhD candidacy	2016, 2017
Feminist and Gender Studies Department Travel Grant , Colorado College	2009
Dean's Venture Grants , Colorado College	2007, 2009
Student-Faculty Collaborative Research Grant , Colorado College	2008

PROFESSIONAL and ACADEMIC HONORS

Graduate Travel Award , Arizona State University	Spring 2016
Mayo Clinic Research Externship , OIKM, Mayo Clinic, Rochester, MN	Summer 2014

Design Excellence Award, The Herberger Institute for Design and the Arts, Arizona State University Fall 2013
Undergraduate Poster Competition Honorable Mention, Am. Society for Biochemistry and Molecular Biology 2009
The Crecelius Family Chemistry Research Award, Dept of Chemistry & Biochemistry, Colorado College 2008

Other PROFESSIONAL and ACADEMIC SERVICE

Conference Reviewer

- American Medical Informatics Association (AMIA) Annual Symposium 2017-Present

Facility Guidelines Institute Workshop: Reimagining the ED - Participant, Austin, TX Sept. 2017

Poster Session Committee - Chair, Arizona State University 2012-2017

- Organized Department of BMI's annual Poster Session.
- Facilitated students' academic and professional development with an emphasis on preparing students to clearly and succinctly communicate their work in a professional setting.
- Developed and maintained collaborations with Mayo Clinic's Graduate Education Dept.

Facility Guidelines Institute Colloquium - Participant, Pittsburgh, PA March 27-28, 2014

- Served as a Clinical Informatics and Human Factors Engineer stakeholder in interactive sessions.
- Anticipated changes in health care delivery in the US and discussed future needs for health care facilities.
- Contributions set directions for 2018 *Guidelines* revision process and helped identify future FGI research initiatives.

Student Advisory Committee - Chair, Arizona State University 2012-2014

- Represented graduate students' voice to Department of BMI; student rep to Academic Program Committee.

Society of Biomedical Informatics Students - Chair and Member, Arizona State University 2012-2014

- Ongoing engagement with graduate and undergraduate students as mentor and advocate.

SOCIETY MEMBERSHIPS

Human Factors & Ergonomics Society (HFES) 2016-Present

American Medical Informatics Association (AMIA) 2011-Present

Arizona Bioethics Network 2011-2015

American Society for Biochemistry and Molecular Biology (ASBMB) 2007-2012

COMMUNITY SERVICE

Arizona Mountaineering Club - Board Member, Phoenix, AZ 2019-Present

Arizona Mountaineering Club - Outing Leader, Phoenix, AZ 2017-Present

- Organize and lead rock climbing outings for members providing additional opportunities for skill development.

Arizona Mountaineering Club - Member & Instructor, Phoenix, AZ 2012-Present

- Volunteer instructor for the club's technical courses (~22-day/year) to assist individuals in building skill set and self-confidence for problem-solving in high-risk scenarios.

Camelback Mountain Park, City of Phoenix 2012-Present

- Providing extensive trail maintenance and remediation on Phoenix's iconic Camelback Mountain. Work closely with Phoenix Parks and Recreation Department in planning and executing projects to improve hiker safety.
- Awarded Impact Volunteer Award by City of Phoenix, 2013.*

Watershed Management Group, Phoenix, AZ 2013-2014

- Worked in teams to design and implement sustainable greywater and water harvesting solutions specific to each project's unique location, resources, and homeowner objectives.

TECHNICAL SKILLS

Usability Analysis: *Morae*

Data Mining Analysis: *ProM, Disco*

Programming Language: *SQL, JAVA, Python, R*

Statistical Analysis: *Excel, SAS, R*

OUTSIDE INTERESTS

Learning and discussing social and cultural development, canyoneering and other outdoor adventures, creative arts, culinary experiments, and cultural explorations.