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Healthcare Information and Management Systems Society (HIMSS)
2018 Annual Conference & Exposition
March 5-9, 2018, Las Vegas, NV

American Nursing Informatics Association (ANIA)
2018 Annual Conference
May 10-12, Orlando, FL
We would like to welcome you to the new academic year of the Clinical Informatics and Patient-Centered Technologies program. As we welcome our new cohort of 24 students and new faculty, we also wish a heartfelt goodbye to outgoing program Director Dr. George Demiris. During his tenure the program has witnessed substantial growth as a top-tier clinical informatics program. Incoming Co-Directors, Dr. Hilaire Thompson and Dr. Andrea Hartzler, look forward to continued success of the program and that of its amazing students.

Dr. Hilaire Thompson is the Joanne Montgomery Endowed Professor in the Department of Biobehavioral Nursing and Health Informatics. She has an adjunct appointment in the School of Medicine in the Department of Biomedical Informatics and Medical Education. Her research focuses on improving lives of older adults through injury prevention as well as use of technology to support aging in place.

Dr. Andrea Hartzler is an Associate Professor in the Department of Biomedical Informatics and Medical Education in the School of Medicine, where her research focuses on the human-centered design of collaborative health technologies. She is eager to meet new and continuing CIPCT students. Before joining the faculty at the University of Washington, Andrea was a scientific Investigator at Kaiser Permanente Washington Health Research Institute and conducted research embedded within the healthcare delivery system.

Even in this time of change locally and nationally, clinical informatics continues to be a critical priority in the U.S. with growing opportunities for professional development of clinicians and informatics professionals. Virtual care, data exchange, analytics, and the learning healthcare system are just a few of the clinical informatics trends that are more important than ever for improving healthcare. We look forward to engaging in these and many other exciting topics in this academic year.

In our Fall Newsletter we celebrate the accomplishments and contributions of Dr. Demiris to CIPCT and learn more about our new faculty member, Dr. David Crosslin. We are looking forward to a productive academic year!
FAREWELL

Celebrating Dr. George Demiris

It is with sadness, yet exceptional gratitude, that we bid goodbye to program director Dr. George Demiris, who has accepted a position as the University of Pennsylvania's 22nd Penn Integrates Knowledge University Professor, starting January 1, 2018. Dr. Demiris will hold joint appointments in the School of Nursing and the Perelman School of Medicine. For a news release about Dr. Demiris’ new appointment, visit: https://news.upenn.edu/news/george-demiris-appointed-penn-integrates-knowledge-university-professor

Please join us in congratulating Dr. Demiris on this incredible honor!

George has been the program director of the CIPCT program since 2007. After taking over the directorship, George sought and was awarded HRSA funding to convert the CIPCT program to a fully distance accessible degree program, to expand the program nationally. During his tenure as program director, the program has graduated 130 individuals and enrollment grew from 10 students to its current 55. In this timeframe, he chaired 35 MS-CIPCT student projects, co-chaired an additional 12, and served as advisor to many more. He shared his telehealth expertise with more than 150 students in NSG540/MEBI581 and NURS526 over this time period.

Dr. Demiris is a prolific author, publishing more than 150 (!) articles and book chapters related to informatics since 2007. In addition, he has received a number of awards and accolades, including two Excellence in Teaching Awards (from SoM-Biomedical Informatics department in 2011 and from the SoN in 2017), being named a fellow of the American College of Medical Informatics in 2011, and he was awarded fellowship in the Washington State Academy of Sciences in 2014. It is an honor to celebrate these accomplishments and contributions to the Clinical Informatics and Patient-Centered Technologies program. Dr. Demiris will be greatly missed and we are committed to continuing and building upon his strong legacy with the CIPCT program.
FACULTY SPOTLIGHT

About our faculty...

David Crosslin, PhD

Dr. Crosslin's academic and professional research experience have been focused on statistical genetics and bioinformatics with applications to complex diseases. His doctorate research in Computational Biology and Bioinformatics at Duke University focused on the central theme of modeling metabolic pathways through dimension reduction techniques of genomics data to understand the etiology of complex traits such as cardiovascular disease. Along with his BIME faculty appointment, Dr. Crosslin has an affiliate faculty appointment at the Kaiser Permanente Washington Health Research Institute, and an adjunct faculty appointment in Genome Sciences. Dr. Crosslin’s research program focuses on translational bioinformatics with a combination of bioinformatics, statistical association analyses, and computational tools development for applied research. Specifically, his research focuses on integrating genetic data into the electronic health record (EHR) for clinical decision support (CDS). All efforts will advance the national electronic health information infrastructure in support of personalized medicine. Dr. Crosslin has been and will continue to be affiliated with one such NHGRI effort; the Electronic Medical Records & Genomics (eMERGE) Network is on the forefront of precision medicine and discovery using mined phenotypes, and has transitioned from discovery to interpretation and integration into the EHR for CDS.

Q: What courses do you typically teach in the CIPCT program?
This will be my first time teaching NMETH 520, Scholarly Inquiry for Nursing Practice in Clinical Informatics, which is similar to a course I've taught in the Department of Biomedical Informatics and Medical Education.

Q: How do you see information technology impacting the health care world in the near future?
Having access to up-to-date interpretation of genetic variation, prior clinical associations, and molecular annotation will allow for more informed decisions in genetic diagnostics, and ultimately better patient outcomes. With advances in biotechnology, bioinformatics software, and molecular annotation tools, genetic health service is becoming more informed.

Q: What can our students do to best position themselves for a career in informatics?
Learn how to communicate your ideas, besides having a strong foundation in math and computing.

Q: Would you tell us a little about your research interests?
My research is focused on the area of translational bioinformatics, with a combination of computational tools development and bioinformatics research, specifically integrating genomics data into the electronic health record for clinical decision support.

Q: What advice would you give to a student enrolling in CIPCT this autumn?
It is never too early to start working on your writing skills.
The Evaluation of an Education Intervention on Accurate Nursing Documentation

Inaccurate documentation of the start and end time of the intravenous drug Zometa can drastically increase a patient’s bill. The purpose of this scholarly project was to evaluate the accuracy of nursing documentation of infusion administration times before and after the implementation of a process improvement initiative focusing on timely, complete, and accurate nursing documentation. A sample of de-identified Zometa infusion treatment summaries was extracted from the Hospital of the University of Pennsylvania’s outpatient chemotherapy electronic health record database during baseline incidence period and post-implementation period. The purpose of the proposed study was to examine the incidence of inaccurate nursing documentation and evaluate the efficacy of process improvement measures using an uncontrolled pre-post design.

June 2017. Project Committee: Brenda Zierler (chair), David Masuda

Cross Sectional Review of Provider Continuity, Quality and Access to Care Measures in Primary Care Clinics in the Military Health System

Background: Key elements of Patient Centered Medical Home (PCMH) care model include ongoing continuity with a primary care provider (PCP), enhanced quality of care, and more timely access to care (ATC). The study used a new self-service business intelligence portal to determine how PCP continuity in the context of the PCMH is related to other measures of quality, ATC standards in a large network of integrated primary care clinics in the Military Health System.

Methods: For this cross-sectional analysis, data from October 2016 from 285 Army primary care teams were collected. The data include measures of PCP continuity, Healthcare Effectiveness Data and Information Set (HEDIS) metrics, and third next available appointments. Data were studied using a Spearman correlation coefficient test.

Graduating CIPCT students each complete a scholarly project as part of their degree requirements. This section highlights our students’ scholarly project submissions over the last few quarters.

Pam Cappucci

Andrew Holdaway
Results: After controlling for clinic enrollment using a weighted means transformation of PCP continuity rates, correlation testing showed that: (1) there was a small degree of statistically significant, negative correlation with all five HEDIS measures used in the sample including screening for breast, cervical, and colon cancer; diabetes; and Chlamydia (2) care teams serving predominantly active duty populations had a significant negative correlation with PCP continuity and (3) There was no significant correlation between PCP continuity and either acute or routine ATC.

Conclusion: The results of the research suggest that there needs to be further research on the causal relationship between continuity and quality outcomes, with specific attention to the counterintuitive negative correlation observed in this analysis. Self-Service BI is a critical element of ongoing process improvement and clinical research.

June 2017. Committee: William Lober (chair), Ardith Doorenbos

Janice Milliman

A History of Public Health Nursing in Washington State

Some patients have difficulty accessing birth control and family planning services because of proximity to clinic locations, lack of transportation, financial constraints, or a reluctance to pursue in-person care. Telehealth services, such as those available through the Planned Parenthood (PP) Care Application (App), have the potential for improving access to healthcare. Through the Care App, patients videoconference with a doctor or nurse practitioner and can receive birth control via mail, when appropriate.

The purpose of this study was to quantitatively evaluate retrospective data of the utilization rates and patterns for PP Care App patients, and those who seek subsequent in-clinic care. The sample included 1417 women who used the Care App for visits related to family planning services (birth control). The majority of PP Care App visits were by White women, and women between 20 and 29 years of age. It was more common for Care App users to have a subsequent Care App (261) visit than an in-clinic visit (219), and the most common visit type for patients who had a subsequent in-clinic visit was for birth control.

May 2017. Committee: George Demiris (chair), Brenda Zierler

Neris Nieves-Robbins


Purpose: To systematically review the literature for evidence of healthcare predictive analytics’ (HPA) impact on outcomes, decision-making and organization performance.
Methods: An electronic literature search of PubMed, CINAHL, Web of Science and Business Source Complete (BSC) databases was conducted for articles published from January 2010-January 2017. The keywords for all database searches were (predictive analytics) OR (machine learning). The BSC search also included AND (healthcare) to exclude non-healthcare industry results. All studies evaluating the impact of HPA on performance, outcomes or decision-making were considered.

Results: Database searches returned 41382 unique articles and 257 of these required detailed abstract review. Subsequently, 16 articles were retrieved for full article review. Five articles were deemed eligible. The eligible articles focused on high-acuity service over-utilization and operations management optimization. The studies focusing on operations management demonstrated mixed results while the studies focusing on high acuity services demonstrated a reduction in over-utilization, but were of variable quality and bias risk.

Conclusion: Applied HPA research is in its early stages and there is insufficient high-quality evidence to assert that HPA has significantly impacted clinical outcomes, clinical decision-making and organizational performance. Further work may be needed to gain additional insight into HPA’s impact across healthcare domains.

May 2017. Committee: Peter Tarczy-Hornoch (chair), Fredric Wolf

Jason Stevens

Bloodworks NW Ergonomics Assessment Database

The goal of this scholarly project was to create an ergonomics database for Bloodworks NW employees that serves as a sub-program to the organization’s safety department. The database can be utilized to help reduce the organization’s rates of injuries as well as drive down costs associated with preventable musculoskeletal disorders. In partnership with the organization’s safety committee and leadership team, a coordinated effort was be made to determine the essential necessary components of the database that best suits the needs of the employees and users of the program. The Bloodworks NW Ergonomics Assessment Database, created using Microsoft Access, provides members of the safety committee a tool that can aid in onsite assessments of an employee’s working environment. Additionally, the database has a variety of components such as queries, search functions, tables, macros, forms and reports that work in unison to provide a feature rich user experience which can be utilized by those individuals who operate the program to perform assessments. Upon implementation of the program, Bloodworks NW safety committee members were able to utilize a system specifically designed to help streamline and manage ergonomic assessments, reports, and additional documentation for every employee who undergoes an assessment.

August 2017. Committee: George Demiris (chair), Meliha Yetisgen
Jeffrey Wong
Development of a Web Based Educational Module for Clinicians to Improve Communication Around Pain Management In Hospice

During end-of-life care, family caregivers often find themselves in difficult circumstances where they must provide emotional, financial and pain management support to loved ones. During this period family caregivers are faced with a multitude of variables that clinicians rarely address leaving these individuals without dedicated resources to assist with their challenges and concerns. This project aimed to close that gap by prototyping a web based educational resource for providers focusing on the challenges caregivers face managing pain for loved ones. Using iterative design, faults were identified throughout internal testing and adjustments made in order to prepare the website for general testing by end-users such as clinicians and social workers. The module provides scenarios about pain management along with assessment questions, potential actions items and follow-up. Further analyses will determine the impact of this module on communication surrounding pain management in the hospice setting.

May 2017. Committee: George Demiris (chair), Hilaire Thompson
RECENT PUBLICATIONS

Key: CIPCT Faculty in **bold**; CIPCT students in **bold italics**.


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