VCLIC

VANDERBILT CLINICAL INFORMATICS CENTER

VCLIC News and Happenings, Volume 20

Happy Holidays and New Year to all! Welcome to the last VCLIC newsletter of 2021. We hope you and your loved ones are able to celebrate over the coming weeks.

To round out the year, we have some exciting announcements for 2022, including our first seminar, featuring **John Torous, MD, MBI** of Beth Israel Deaconess Medical Center, and our first two workshops, one on using design principles in app development, led by **Megan Salwei, PhD, and Tom Reese, PhD**, and a second on building FHIR applications, led by **Tim Coffman and Simeon Hearring** of VUMC HealthIT. These workshops tie into and lead up to our very first **Innovation Challenge and Hackathon**, which will be held on February 25th and 26th in the Wond'ry and focuses on our mental health theme.

We are excited to introduce our featured member this month, **Megan Salwei, PhD**, who is co-leading our January workshop and has several interesting projects underway! As always, we are including upcoming submission dates for conferences of interest and have many awards, honors, publications, and accepted abstracts from members to display.

If you have any questions or would like to engage with our team, please email Elise (elise.russo@vumc.org).

VCLIC Events

Thank you to everyone who joined us for **Nat Benda, PhD**'s talk on incorporating technology into mental health treatment for older adults, which took place on December 8th, 2021 and was our last seminar of the year!

Next up, we have our first seminar of 2022:

John Torous, MD, MBI, Director of the Digital Psychiatry Division and Assistant Professor, Beth Israel Deaconess Medical Center will present

Beyond Telehealth: Advances in digital mental health research and practical clinical considerations for smartphone apps in care – January 12th, 2022, 12:00 pm CT

VCLIC is excited to announce our January seminar speaker: **John Torous, MD, MBI**, the Director of the Digital Psychiatry Division at Beth Israel Deaconess Medical Center and Chair of the American Psychiatric Association's Smartphone App Evaluation Task Force. Dr. Torous will speak about his work in the digital psychiatric space:

As use of telepsychiatry in mental health via video/phone visits soars, it is important to also consider how asynchronous telepsychiatry tools like smartphone apps can also advance care. This talk will focus on the evolving field of smartphone digital phenotyping and consider the potential of real time data capture via smartphones, methods necessary to analyze such data, and practical clinical applications of these tools. Looking at the evolving smartphone mental health ecosystem, the talk will also cover the APA app evaluation framework as a tool to help make more informed choices about any related smartphone app for use in research or patient care.

Join us via Zoom.

VCLIC Mental Health Design Challenge and Hackathon: February 25th and 26th, 2022

According to the CDC, "mental health includes our emotional, psychological, and social well-being," and mental illnesses are "conditions that affect a person's thinking, feeling, mood or behavior, such as depression, anxiety, bipolar disorder, or schizophrenia" (cdc.gov). Mental illnesses are some of the most common health conditions in the United States, and "more than 50% of people will be diagnosed with a mental illness or disorder at some point in their lifetime" (cdc.gov).

Vanderbilt has been a long-time user of electronic health records (EHRs). Vanderbilt's EHR, eStar, contains data about every patient we treat, and new features can be developed and implemented to support new care models. Vanderbilt also offers our patients MyHealth at Vanderbilt (MHAV), a patient portal where patients can access their medical data, and even connect to external apps. Both the provider and patient-facing components of our EHR support the SMART on FHIR standard, allowing external applications to be seamlessly integrated.

The Vanderbilt Clinical Informatics Center (VCLIC), in partnership with VUMC HealthIT, will host an innovation challenge and hackathon to support development of novel apps for patients and healthcare providers to support our Innovative Care Delivery Models for Mental Health theme.

The innovation challenge and hackathon will take place from a Friday to Saturday, February 25th-26th, 2022, and will be held at The Wond'ry on Vanderbilt University's campus. The event is open to all VUMC and VU affiliates, including students, faculty and staff in all disciplines and departments – whether based at the University of the Medical Center. Participating teams can be comprised of several different types of roles, including developers, clinicians, project managers, social and behavioral scientists, designers, data scientists, informaticians, and others, which you can indicate on the interest form, linked below.

The goal of the innovation challenge and hackathon is for teams to come together and develop a novel apps to support mental health, defined broadly. We welcome apps for patients and providers, apps integrated with or external to the EHR, and apps for any phase of mental health care, including screening, diagnosis, treatment, or wellness. VCLIC will award prizes to the top teams. The applications developed will be judged based on creativity, functionality, design, clinical impact, and relevance to the theme.

If you are interested in participating in the innovation challenge and hackathon, please fill out the interest form, here: https://redcap.link/VCLICDesignChallengeandHackathon

RELATED WORKSHOPS

VCLIC will host two workshops leading up to the innovation challenge and hackathon that will help participants prepare for the competition, though participation in the workshops is not mandatory or a prerequisite for participation in the innovation challenge and hackathon event.

The first workshop will be on Tuesday, January 18th, 2022 from 1:00-4:00 pm and will feature VCLIC members **Thomas Reese, PharmD, PhD, and Megan Salwei, PhD**, who will provide a hands-on instructional session on using design principles in the development of applications.

The workshop will cover using design principles in the development of applications, including defining user needs, iterative design, and evaluation. This interactive session will take place via Zoom and will demonstrate methods and tools used in developing applications while considering human factors and human-centered design approaches.

Please sign up for this workshop here: https://redcap.link/appdesignworkshop

Then, on February 8th, 2022, also from 1:00-4:00 pm **Tim Coffman and Simeon Hearring** of VUMC HealthIT will teach a practical session on developing FHIR applications using the SMART on FHIR API.

Please sign up for this workshop here: https://redcap.link/FHIRapps

Email elise.russo@vumc.org with any questions!

Member Spotlight: Megan Salwei, PhD

Dr. Megan Salwei is a Research Assistant Professor in the Center for Research and Innovation in Systems Safety (CRISS) affiliated with the Center for Health Services Research and the Department of Anesthesiology. She received her PhD in Industrial and Systems Engineering (human factors engineering) from the University of Wisconsin-Madison. In her dissertation research, she studied workflow integration during the design and implementation of a clinical decision support (CDS) system in the emergency department. Dr. Salwei developed a conceptual model of workflow integration to improve health IT design and implementation. She also studied care transitions and disposition decision making

of older adults in the emergency department as a part of an Agency for Healthcare Research and Quality (AHRQ) Patient Safety Learning Lab.

Megan recently completed a National Library of Medicine Postdoctoral Research Fellowship in the Department of Biomedical Informatics. Using human factors engineering methods and principles, her research program focuses on the design and integration of information-rich technologies to support care processes and improve patient safety. She is interested in the design of health IT to support teamwork in healthcare, not just between clinicians, but for the entire healthcare team – clinicians, patients, and their family caregivers.

What Megan is working on:

I was recently awarded a Learning Health Systems K12 award for my project "COMputerized PAtient-centered Collaborative Technology (COMPACT) to support breast cancer shared decision making". The goal of this project is to design a team-based collaborative technology to improve personalized treatment decision making for breast cancer patients at VUMC. I am also involved in the AHRQ-funded Cancer Patient Safety Learning Lab (CaPSLL) led by Drs. Weinger and France, aimed at predicting and preventing unexpected clinical deterioration in cancer outpatients. I lead the human-centered design sub-team that is focused on how to optimally deliver risk information to both the clinical team of the patients and their primary caregivers. I am also a part of the AHRQ-funded IMPACTS project led by Dr. Weinger, aimed at better understanding anesthesiologists' decision-making during crisis events. I recently completed usability testing to support FDA approval of a new off-the-shelf hearing aid technology.

How she has been involved in VCLIC:

I have been a member of VCLIC since starting my post-doc in 2020 and regularly participate in VCLIC seminars and workshops. I will be co-leading the VCLIC App Design Workshop in January focused on human factors principles and methods for design.

What she would like to collaborate with others on:

Projects using health IT to improve patient safety and reduce clinician burnout! I would love to collaborate with anyone needing human factors expertise in the design and implementation of AI-based technologies. Specific areas of interest include: decision making, teamwork, cancer care, emergency medicine, and diagnostic safety. Other members of CRISS including Drs. Anders, Slagle, and France are also available to provide support in the areas of human factors engineering, human centered design, and systems engineering.

Upcoming Conference Submission Deadlines

- Society of General Internal Medicine (SGIM):
  - Submission Deadline: January 4th, 2022
- Pediatric Academic Societies (PAS) Meeting:
  - Abstract Submission Deadline: January 5th, 2022, 11:59 pm CT
- Society for Industrial and Applied Mathematics (SIAM):
  - Minisymposium Proposal Submission Deadline: January 10th, 2022, 11:59 pm ET

- o [Contributed Lecture, Poster, Minisymposteria, and Minisymposium Presentation Abstracts Submission Deadline](): January 31st, 2022, 11:59 pm ET
  - [AcademyHealth Annual Research Meeting (ARM)]():
    - o [Abstract Submission Deadline](): January 11th, 2022, 5:00 pm ET
  - [International Conference on Machine Learning (ICML)]():
    - o [Abstracts Submission Deadline](): January 20th, 2022
    - o [Papers Submission Deadline](): January 27th, 2022
  - [Medical Informatics Europe (MIE)]():
    - o [Full papers, Short Communication papers Submission Deadline](): January 23rd, 2022
    - o [Workshops, Panels, Demonstrations Submission Deadline](): February 27th, 2022
  - [American Society of Clinical Oncology (ASCO) Annual Meeting]():
    - o [Abstract Submission Deadline](): February 15th, 2022, 11:59 pm ET

Details on upcoming conferences and conference deadlines can be found on our Confluence page, [here]().

Publications, Presentations, Interviews, and Awards

Additional Awards, Honors, Presentations, and News Mentions

Congratulations to **Jonathan P. Wanderer, M.D., M.Phil, FASA, FAMIA** for being voted President-Elect for the Society for Technology in Anesthesia!

And further congratulations to **Alvin Jeffery, PhD**, who finished his MS in Biomedical Informatics this semester!

Trent Rosenbloom, M.D., MPH is quoted, and **Bryan Steitz, PhD** and **Robert Turer, MD** are mentioned in the VUMC Reporter article, "[Surveys show VUMC patients value immediate online access to test results]()."

Dario Giuse, Dr. Ing., MS is quoted in the VUMC Reporter article, "[VUMC celebrates 20th anniversary of custom-built EHR.]()"

Publications

December

Daneshjou R, Barata C, Betz-Stablein B, Celebi ME, Codella N, Combalia M, Guitera P, Gutman D, Halpern A, Helba B, Kittler H, Kose K, Liopyris K, Malvehy J, Seog HS, Soyer HP, **Tkaczyk ER**, Tschandl P, Rotemberg V. (2021). [Checklist for Evaluation of Image-Based Artificial Intelligence Reports in Dermatology: CLEAR Derm Consensus Guidelines From the International Skin Imaging Collaboration Artificial Intelligence Working Group](). *JAMA Dermatol.*

Khan MS, Carroll RJ. (2021). [Inference-based correction of multi-site height and weight measurement data in the All of Us research program](). *J Am Med Inform Assoc.*;ocab251.

Niklinska EB, Hicks A, **Wheless L**, Hanlon A. (2021). [Characteristics of Lower Extremity Infection Rates Following Mohs Micrographic Surgery](). *Dermatol Surg*;47(12):1547-1550.

Tyler A., Bryan M.A., Zhou C., Mangione-Smith R., **Williams D.**, **Johnson D.P.**, Kenyon C.C., Rasooly I., Neubauer H.C., Wilson K.M. (2021). [Variation in Dexamethasone Dosing and Use Outcomes for Inpatient Croup](). *Hospital Pediatrics*.

November

Afify Z, Orjuela M, **Smith CM**, Dalal M, Ford JB, Pillai P, Robles J, Reddy S, McCormack S, Ehrhardt MJ, Ureda T, Edington H, Miller TP, Rubinstein J, Marks L, Mason CC. (2021). [Outcome of Post Solid Organ Transplant Burkitt Lymphoma (PSOT-BL): A Report from the Pediatric PTLD Collaborative (PPC).](). *Blood;* 138:2498-2498.

Bright TJ, Williams KS, Rajamani S, Tiase VL, Senathirajah Y, Hebert C, **McCoy AB**. (2021). [Making the case for workforce diversity in biomedical informatics to help achieve equity-centered care: a look at the AMIA First Look Program.]() *JAMIA*.

Clifton JC, Engoren M, Shotwell MS, Martin BJ, Clemens EM, Guillamondegui OD, **Freundlich RE**. (2021). [The Impact of Functional Dependence and Related Surgical Complications on Postoperative Mortality.]() *J Med Syst*.

Friberg J, Qazi AH, Boyle B, Franciscus C, Vaughan-Sarrazin M, Westerman D, Patterson OV, **Parr SK**, Matheny ME, Arya S, Smolderen KG, Lund B, Gobbel GT, Girotra S. (2021). [Abstract 10374: Ankle and Toe-Brachial Index for Peripheral Artery Disease Identification: Unlocking Clinical Data Through Novel Methods](). *Circulation*.

Godfrey CM, Lovvorn HN, Greeno A, **Huang E.** (2021). [Situational awareness in the management of pediatric abdominal impalement](). *Journal of Pediatric Surgery Case Reports.*

Goethals ER, Bergner EM, **Mayberry LS, Novak LL**, Erfe F, Jaser SS. (2021). [Distressed Families Demonstrate Resilience in the Context of COVID-19: Perspectives of Adolescents With Type 1 Diabetes and Their Mothers](). *Diabetes Spectrum.*

Henry OP, Li G, **Freundlich RE**, Sandberg WS, **Wanderer JP**. (2021). [Understanding the Accuracy of Clinician Provided Estimated Discharge Dates](). *J Med Syst*; 46(1):2.

Moy AJ, Schwartz JM, Withall J, Lucas E, Cato KD, **Rosenbloom ST, Johnson K**, Murphy J, Detmer DE, Rossetti SC. (2021). [Clinician and Health Care Leaders' Experience with- and Perceptions of- COVID-19 Documentation Reduction Policies and Practices](). *Applied Clinical Informatics;* 12(05): 1061-1073.

Nelson LA, Spieker AJ, **Mayberry LS,** McNaughton C, Greevy RA. (2021). [Estimating the impact of engagement with digital health interventions on patient outcomes in randomized trials](). JAMIA.

Pregnall AM, Gruss CL, Ramanujan KS, Gelfand BJ, McEvoy MD, **Wanderer JP.** (2021). [ACGME Case Log Reminder Does Not Improve Resident Accuracy in Logging Cases](). *J Med Syst; 46(1):1.*

Schmidt AL, Tucker MD, Bakouny Z, Labaki C, Hsu CY, Shyr Y, Armstrong AJ, Beer TM, Bijjula RR, Bilen MA, Connell CF, Dawsey SJ, Faller B, Gao X, Gartrell BA, Gill D, Gulati S, Halabi S, Hwang C, Joshi M, Khaki AR, Menon H, Morris MJ, Puc M, Russell KB, Shah NJ, Sharifi N, Shaya J, Schweizer MT, Steinharter J, Wulff-Burchfield EM, Xu W, Zhu J, Mishra S, Grivas P, Rini BI, **Warner JL**, Zhang T, Choueiri TK, Gupta S, McKay RR. (2021). [Association Between Androgen Deprivation Therapy and Mortality Among Patients With Prostate Cancer and COVID-19](#). *JAMA Netw Open*;4(11).

Shah S., Gulati S., Li A., Fu J., Kumar V., Zon R., Kulkarni A., Shah P., Byeff P.D., Nguyen R., Nagaraj G., Puc M., Hwang C., McKay R., French B., Hennessy C., **Warner J.L.**, Connors J.M., Shah D.P., Rosovsky R.P. (2021). [Bleeding Complications in Patients with Cancer and COVID 19- Analysis from the COVID 19and Cancer Consortium (CCC19) Registry.](#) *Blood* 138, 4997-4997.

Walsh CG, McKillop MM, Lee P, Harris JW, Simpson C, **Novak LL.** (2021). [Risky business: a scoping review for communicating results of predictive models between providers and patients.](#) *JAMIA Open*;4(4):ooab092.

Ward MJ, Shuster JL, Mohr NM, Kaboli PJ, Mixon AS, Kemmer J, Campbell C, McNaughton CD. (2021). [Implementation of Telehealth for Psychiatric Care in VA Emergency Departments and Urgent Care Clinics](#). *Telemed J E Health.* Epub ahead of print.

Accepted or In Press
Salwei, M.E., Carayon, P., Wiegmann, D., Pulia, M.S., Patterson, B.W., Hoonakker, P.L.T. (in press). Usability Barriers and Facilitators of a Human Factors Engineering-based Clinical Decision Support Technology for Diagnosing Pulmonary Embolism. *International Journal of Medical Informatics.*

Syrowatka A, Song W, Amato MG, Foer D, Edrees H, Co Z, Kuznetsova M, Dulgarian S, Seger DL, Simona A, Bain PA, **Jackson GP**, Rhee K, Bates DW. (2021). [Key use cases for artificial intelligence to reduce the frequency of adverse drug events: a scoping review](#). *The Lancet Digital Health*. In press.

Tang LA, **Jeffery AD**, Leech AA, Osmundson SS, Schirle L, Phillippi JC. (2021). [A Comparison of Methods to Identify Antenatal Substance Use Within Electronic Health Records](#). *AJOG MFM.* In Press.

Conference Abstracts
Anders, S., Reale, C., **Salwei, M.E.,** Slagle, J., Militello, L., Sushereba, C., **Weinger, M**. Using a hybrid decision making model to inform qualitative data coding. *Accepted for presentation at the International Symposium on Human Factors and Ergonomics in Health Care*. New Orleans, LA, March 2022.

Militello, L., **Anders, S**., Sushereba, C., Reale, C., **Salwei, M.E.,** Slagle, J., **Weinger, M**. Simulation Interview for Studying Anesthesiologist Decision Making. *Accepted for presentation at the International Symposium on Human Factors and Ergonomics in Health Care*. New Orleans, LA, March 2022.

Salwei, M.E., Sesto, M., Tevaarwerk, A., Carroll, C. Unmet employment related needs of metastatic breast cancer survivors: a work system analysis. *Accepted for poster presentation at the International Symposium on Human Factors and Ergonomics in Health Care*. New Orleans, LA, March 21, 2022.

Reminder to Send Updates for Recognition

If you (or another VCLIC Member) publishes a paper; has an abstract accepted at a conference; are interviewed for or written up in a news article; receive any awards, accolades, or honors; or completed/are currently undertaking any projects you would like to highlight, please email me with or forward this information:

- Names of VCLIC members/VUMC staff who participated in or worked on the project, paper, or abstract (or who received the award/honor)
- The title of the Project, Paper, Abstract, Article, or Award
- The journal, conference, or news publication (this can be podcasts, radio, or more "traditional," news mediums)

Nothing is too big or too small to celebrate, and this information will be featured on the News section of our website as well. As time goes on, I am hoping to also improve our Twitter presence, so feel free to add, tag, or tweet us at @VUMC_VCLIC too!

Thank you, and see you next month!