VCLIC News and Happenings, Volume 19

Welcome to our November edition of VCLIC News! We hope everyone is gearing up for time with family and friends. We are sending this letter a little earlier than usual to accommodate the holiday in hopes that y'all will be celebrating in some way next week.

This month we are recapping (mostly in photos) the **AMIA 2021 Annual Symposium** along with our most **recent VCLIC events**. We are also so excited to announce our final **VCLIC-hosted DBMI Seminar** of the year, featuring **Natalie Benda, PhD**, of Weill Cornell Medicine, and our upcoming **Innovation Challenge and Hackathon**, to take place in February 2022.

Our featured member this month is the wonderful **Patty Sengstack, DNP, RN-BC, CPHIMS, FAAN**, and per usual, we are listing **upcoming conference submission deadlines**, as well as featuring an impressive amount of **member awards, honors, publications, and conference acceptances**.

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

VCLIC at AMIA Annual Symposium 2021

VCLIC members had a blast at the AMIA 2021 Annual Symposium in San Diego earlier this month! In addition to several presentations, panels, posters, it was great to catch up with friends and collaborators, both from VUMC and elsewhere. Congratulations to all the presenters, and especially to **Bryan Steitz, PhD**, for receiving the Best Poster Award for his poster on "Comparing Language Model Vocabulary Coverage on Clinical Documents." We hope to see even more folks attend AMIA next year!

VCLIC Events

Thank you to everyone who joined us for **Colin Walsh, MD, MA's** talk on Vanderbilt SafeCourse: Multidisciplinary Informatics to Prevent Suicide in October! It was a fantastic talk that showed the breadth and depth of Dr. Walsh's extremely important and timely work on suicide prevention at Vanderbilt and beyond.

We also hope you enjoyed learning from our collaborator (and friend of VCLIC), **Dean Sittig, PhD**, during his recent talk on EHR Safety: Simple Steps for Safer EHRs.

Our last workshop of the year was this past Tuesday, when **Bryan Steitz, PhD, and Sanjay Mishra, PhD,** gave a fantastic introduction to R and its applications.

We are so excited to announce our final speaker of the year as well as our next series of hands-on events:

VCLIC is thrilled to have Nat Benda, PhD, present our December Seminar. Dr. Benda is a faculty member with the Division of Health Informatics in the Department of Population Health Sciences at Weill Cornell Medicine. Dr. Benda's work utilizes human factors methods to improve the quality, safety, and equity of healthcare, with a special focus on consumer and clinical informatics technologies.

Current treatments for major depressive disorder are either less effective for older adults (i.e. pharmacotherapy) or are challenging to extend to community settings (i.e. psychotherapy). To improve and extend mental health treatment for older adults, our team designed Engage-M, a streamlined therapy that, in addition to talk therapy, incorporates patient-reported outcome questions (sent via SMS) and a smartwatch. In this talk, we will report on the results of a pilot study that assessed and improved the usability, usefulness, and acceptability of the technology package, and also describe interim results of subsequent clinical trials evaluating the impact of the intervention on mental health outcomes for older adults. We will conclude with a discussion of facilitators and challenges to incorporating technology (specifically mHealth and wearable devices) into mental health treatment for older adults.

Please join us via Zoom on December 8th at 12:00 pm.

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.

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.

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.

More information about both the workshops and the hackathon will be disseminated shortly.

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

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

Member Spotlight: Patricia Sengstack, DNP, RN-BC, CPHIMS, FAAN

Patricia (Patty) Sengstack, DNP, RN-BC, CPHIMS, FAAN is the Senior Associate Dean for Informatics at Vanderbilt University School of Nursing as well as a Nursing Informatics Executive for Vanderbilt University Medical Center, and a Professor in the Department of Biomedical Informatics. She has accomplished too many things to list, but most recently was elected to the American College of Medical Informatics (ACMI) as a Fellow. We briefly interviewed Patty about her work and plans for future work and are excited for our membership to get to know her a bit better!

What are you working on?

- I'm leading the Health IT Safety Workgroup. We review all Veritas reports that indicate eStar as contributing to the incident. We've been doing this for over a year and half and have identified issues and trends that we ensure get to the right stakeholders to address. We recently began the organization-wide review of ONC's SAFER Guides. One of our team members (Tina Kurtz) is developing each guide in RedCap. Our goal is to make this available publicly for organizations

across the nation who will need to attest to CMS that they have conducted a review of the SAFER Guides beginning in 2022.

- I've also been working in the area of documentation burden. I authored a framework that identified the various contributors of clinician documentation burden that was used by AMIA's 25 X 5 symposium, sponsored by NLM. This symposium brought together a multi-disciplinary, cross-industry group of stakeholders to share, brainstorm, and create action plans to address the increasing documentation requirements for our clinicians.
- I've also been working with the Vanderbilt Nursing Informatics Committee (VNIC) on developing stronger Guiding Principles to apply when additional documentation elements are requested to be added to nursing's responsibility. We are asking for more data to support the need for more alerts/notifications, and we are going to ask the requestor to come back to the committee in 6 months after the added documentation and report out on whether it met the desired need. ☺

How would you describe your VCLIC involvement?

I have served as an advisor to VCLIC since its inception, first as a cabinet member and now on the advisory council. I appreciate the ability to include nursing's voice in the work of this amazing group. They have helped our nurse informaticists through the click busting process to make CDS more meaningful, and as a result, our team has the knowledge and resources to be experts at evaluating the effectiveness of alerts. I have also tapped VCLIC members (typically Allison McCoy) to support a number of nursing initiatives needing better data to assess and evaluate interventions to support nursing care delivery.

What areas of informatics are you interested in?

My top areas of interest are the two areas mentioned above: making health IT safer and decreasing the burden of documentation in the EHR. I also am interested in design thinking and innovation and have now hired a director of nursing innovation here at VUSN. As our plans to collaborate and ideate develop, we hope to bring in cutting edge and outside the box technologies to improve both care delivery and education.

What would you like to collaborate with others on?

I would like to collaborate with others in the areas of innovation and data analytics. We have so much to learn but cannot do it in a silo. Our nursing informatics faculty have been working with a team from the CDC and students from the Data Science Institute on a collaborative project to evaluate burn rates of personal protective equipment (PPE). The diverse skill sets at the table have illustrated the impact of a cross-disciplinary team. Bringing together nurses (with their clinical expertise) and data scientists, engineers, and other innovators will be essential in transforming care delivery. We are training the next generation of informatics specialists and need to be future-thinking.

Upcoming Conference Submission Deadlines

- [AMIA 2022 Clinical Informatics Conference (CIC)](AMIA):
    - [Submission Deadline](Submission): November 30th, 11:59 pm ET
- [Society of General Internal Medicine (SGIM)](Society):
    - Submission Deadline: January 4th, 2022

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

Webinars and Virtual Events

- [Connecting Implementation Science and Data Modernization](#): November 29th, 2021, virtual
  - Free [registration](#) [Webinar]
  - Data modernization aims to establish interoperability in our health systems whereby data can be shared seamlessly across systems and programs so it can be acted on from a public health perspective. Implementation science is critical to ensuring success of data modernization initiatives, while access to standardized clinical and public health data systems can optimize the measurement of implementation and adoption of evidence-based interventions. Join RTI International and the Consortium for Implementation Science to discuss connections between data modernization and implementation science.
- [Machine Learning for Health (ML4H)](#): December 4th, 2021, virtual
  - Free [registration](#) [Symposium]
  - ML4H 2021 will be a packed virtual symposium via Zoom, Gather.Town, and Rocket.Chat highlighting exciting research and new problems in machine learning for health. The event will feature [keynote speakers](#) including Yoshua Bengio, Karandeep Singh, Xiao Liu, Aisha Walcott-Bryant, Shalmali Joshi, Sendhil Mullainathan, Uri Shalit, and Rory Sayres; Spotlight talks and poster sessions of current research by submitting authors; [research round-table discussions](#) by top researchers across diverse topics within machine learning for health; the awarding of several top paper, poster, & reviewer awards; and an [ML4H Raffle](#) for registered attendees.

Publications, Presentations, Interviews, and Awards

Additional Awards, Honors, Presentations, and News Mentions

Ashley Spann, MD has taken on the role of the hepatology steering board chair for Epic, and was also selected to moderate a session on November 13ᵗʰ at the American Association for the Study of Liver Diseases (AASLD) Meeting: Meet the Expert: Applying Machine Learning to Liver Disease.

Colin Walsh, MD, MA was pictured and quoted, **Melissa McPheeters**, PhD, MPH was quoted, and **Michael Ripperger** was mentioned in the VUMC Reporter article, "Artificial intelligence predicts opioid overdose in Tennessee."

Michael Ripperger and **Colin Walsh**, **MD, MA** were featured in an AI in Healthcare article, "Opioid overdoses more readily preventable with ensemble learning."

Jonathan P. Wanderer, MD, M.Phil, FASA, FAMIA was promoted to Professor, and received the DBMI **Technology, Organizational Development, and Evaluation (TODE) Award** for his work. The TODE Award is given to an individual who has contributed significant and impactful service through work that develops and/or supports operational systems of Vanderbilt University and VUMC. Congratulations, Jon!

Martin Were, MD, MS and **Patricia Sengstack, DNP, RN-BC** were recognized as fellows elected to the American College of Medical Informatics (ACMI) in the VUMC Reporter article, "[VUMC's Were, Sengstack, Stead honored by ACMI.](#)"

Sunil Kripalani, **MD, MSc** was pictured and quoted in the VUMC Reporter article, ["VUMC team puts tool to reduce heart failure to test."](#)

Thomas Lasko, MD, PhD was quoted and **Michael Ward, MD, PhD, MBA** was mentioned in the VUMC Reporter article, "[COVID test accuracy appears to vary by time of day](#)".

Adam Wright, PhD was pictured and quoted in the VUMC Reporter article, ["Miller, Wright land top biomedical informatics awards."](#) Congratulations again on receiving the Lindberg Award, Dr. Wright!

Gretchen Purcell Jackson, MD, PhD was pictured and featured in the VUMC Reporter article, ["Jackson, Winkfield selected among 'Women to Watch' in health care."](#)

Stuart Weinberg, MD was mentioned in a HIMSS article, ["Integration Program Executive Committee Selects 2022 Priorities for Improving Immunization Interoperability and Information Sharing"](#).

Publications

November

Benda NC, **Novak LL**, Reale C, Ancker JS. (2021). [Trust in AI: why we should be designing for APPROPRIATE reliance](#). *J Am Med Inform Assoc.* Online ahead of print.

Brown S, Lavery JA, Shen R, Martin AS, Kehl KL, Sweeney SM, Lepisto EM, Rizvi H, McCarthy CG, Schultz N, **Warner JL**, Park BH, Bedard PL, Riely GJ, Schrag D, Panageas KS; AACR Project GENIE Consortium. (2021). [Implications of Selection Bias Due to Delayed Study Entry in Clinical Genomic Studies.](#) *JAMA Oncol*.

Cheng AC, Wen L, Li Y, Koyama T, Berry LD, Pal T, Friedman DL, **Osterman TJ**. (2021). [Follow-up Interactive Long-Term Expert Ranking (FILTER): a crowdsourcing platform to adjudicate risk for survivorship care](#). *JAMIA Open*;4(4).

Hess EP, **Misulis KE**. (2021). [Clinical decision support is an effective approach to improving the quality of imaging selection in patients with transient ischemic attack or minor stroke](#). *Canadian Journal of Emergency Medicine*;23(6):731-732.

Wanderer JP, Li G, **Freundlich RE**. (2021). [Risk of Postoperative Pulmonary Complications: Reply.](#) Anesthesiology;135(5):930-931.

October

Antoon JW, Grijalva CG, Thurm C, Richardson T, Spaulding AB, Teufel RJ 2nd, Reyes MA, Shah SS, Burns JE, Kenyon CC, Hersh AL, **Williams DJ**. (2021). Factors Associated With COVID-19 Disease Severity in US Children and Adolescents. *J Hosp Med.*

Kang J, Castro V, Ripperger M, Burstein D, Rocha DB, Hu Y, Wilimitis D, Voloudakis G, McCoy T, Linnér RK, Chabris C, Roussos P, **Walsh C**, Perlis R, Ruderfer D. (2021). TH36. GENETIC AND CLINICAL CHARACTERISTICS OF TREATMENT RESISTANT DEPRESSION DEFINED USING EHR CLINICAL MODELS. *European neuropsychopharmacology*;51:e213-e214.

Keohane LM, **Kripalani S**, Buntin MB. (2021). Traditional Medicine Spending on Inpatient Episodes as Hospitalizations Decline. *Journal of Hospital Medicine;* 16(11):652-658.

Kumah-Crystal YA, Stein PM, Chen Q, Lehmann CU, **Novak LL**, Roth S, **Rosenbloom ST**. (2021). Before-Visit Questionnaire: A Tool to Augment Communication and Decrease Provider Documentation Burden in Pediatric Diabetes. *Appl Clin Inform;* 12(5):969-978.

Kostelanetz S, Pettapiece-Phillips M, Weems J, Spalding T, Roumie C, Wilkins CH, **Kripalani S**. (2021). Health Care Professionals' Perspectives on Universal Screening of Social Determinants of Health: A Mixed-Methods Study. *Population Health Management.*

Morley T, Choi K, Michael R, Drew W, Kang J, Smoller J, **Walsh C**, Ruderfer D. (2021). METHODOLOGICAL AND PERFORMANCE IMPLICATIONS OF ADDING POLYGENIC RISK SCORES TO EHR-BASED PREDICTION MODELS. *European neuropsychopharmacology*;51:e32.

Liu M, Van Driest SL, Vnencak-Jones CL, Saucier LAG, Roland BP, Gatto CL, Just SL, **Weitkamp AO**, **Peterson JF**. (2021). Impact of Updating Pharmacogenetic Results: Lessons Learned from the PREDICT Program. *Journal of Personalized Medicine*;11(11):1051.

McNaughton CD, Adams NM, Hirschie Johnson C, **Ward MJ**, Schmitz JE, **Lasko TA.** (2021). Diurnal Variation in SARS-CoV-2 PCR Test Results: Test Accuracy May Vary by Time of Day. *J Biol Rhythms.* Online ahead of print.

Niklinska EB, Hicks A, **Wheless L**, Hanlon A. (2021). Characteristics of Lower Extremity Infection Rates Following Mohs Micrographic Surgery. *Dermatologic Surgery*.

Patrick SW, Dupont WD, McNeer E, **McPheeters M**, Cooper WO, Aronoff DM, Osmundson S, Stein BD. (2021). Association of Individual and Community Factors With Hepatitis C Infections Among Pregnant People and Newborns. *JAMA Health Forum*;2(10):e213470-e213470.

Rees AB, Schultz JD, Wollenman LC, **Moore-Lotridge SN**, Martus JE, Schoenecker JG, Mencio GA. (2021). A Mini-Open Approach to Medial Pinning in Pediatric Supracondylar Humeral Fractures May Be Safer Than Previously Thought. *J Bone Joint Surg Am.*

Reese T, Del Fiol G, Morgan K, Hurwitz J, Kawamoto K, Gomez-Lumbreras A, Brown M, Thiess H, Vazquez S, **Nelson S**, Boyce R, Malone D. (2021). A Shared Decision-making Tool for Drug Interactions Between Warfarin and Nonsteroidal Anti-inflammatory Drugs: Design and Usability Study. *JMIR Hum Factors*;8(4):e28618.

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Braciszewski JM, Grudzen C, Del Fiol G. (2021). Enhancing the use of EHR systems for pragmatic embedded research: lessons from the NIH Health Care Systems Research Collaboratory. *Journal of the American Medical Informatics Association.*

Ripperger M, Lotspeich SC, Wilimitis D, Fry CE, Roberts A, Lenert M, Cherry C, Latham S, Robinson K, Chen Q, **McPheeters ML**, Tyndall B, **Walsh CG**. (2021). Ensemble learning to predict opioid-related overdose using statewide prescription drug monitoring program and hospital discharge data in the state of Tennessee. *J Am Med Inform Assoc;* ocab218. Online ahead of print.

Saito M, **Moore-Lotridge SN**, Uppuganti S, Egawa S, Yoshii T, Robinette JP, Posey SL, Gibson BHY, Cole HA, Hawley GD, Guelcher SA, Tanner SB, McCarthy JR, Nyman JS, Schoenecker JG. (2021). Determining the pharmacologic window of bisphosphonates that mitigates severe injury-induced osteoporosis and muscle calcification, while preserving fracture repair. *Osteoporos Int.* Online ahead of print.

Schirle, L., **Jeffery, A.,** Yaqoob, A., Sanchez-Roige, S., & Samuels, D. C. (2021). Two Data-Driven Approaches to Identifying the Spectrum of Problematic Opioid Use: A Pilot Study within a Chronic Pain Cohort. *International Journal of Medical Informatics;* 156:104621. Online ahead of print.

Semler MW, Casey JD, Lloyd BD, Hastings PG, Hays M, Roth M, Stollings J, Brems J, Buell KG, Wang L, Lindsell CJ, **Freundlich RE, Wanderer JP**, Bernard GR, Self WH, Rice TW. (2021). Protocol and statistical analysis plan for the Pragmatic Investigation of optimaL Oxygen Targets (PILOT) clinical trial. *BMJ Open;* 11(10):e052013.

Skeens R, Cavanaugh KL, Cronin R, Chen Q, Liu Y, Huth H, **Jackson GP**. (2021). Parent Activation in the Neonatal Intensive Care Unit. *AM J Perinatol.*

Steitz BD, Sulieman L, **Wright A, Rosenbloom ST**. (2021). Association of Immediate Release of Test Results to Patients With Implications for Clinical Workflow. JAMA Network Open;4(10):e2129553-e2129553.

Turer RW, DesRoches CM, Salmi L, Helmer T, **Rosenbloom ST**. (2021). Patient Perceptions of Receiving COVID-19 Test Results via an Online Patient Portal: An Open Results Survey. *Appl Clin Inform*;12(04):954-959.

Accepted or In Press

France DJ, Schremp E, Rhodes EB, Slagle J, Moroz S, Grubb PH, Hatch LD, Shotwell M, Lorinc A, Robinson J, Crankshaw M, Newman T, **Weinger MB**, Blakely ML. (2021). A Pilot Study to Determine the Incidence, Type, and Severity of Non-Routine Events in Neonates Undergoing Gastrostomy Tube Placement: Non-Routine Events in Gastrostomy Placement. *Journal of Pediatric Surgery,* in press.

Hsu P, Gay JC, Lin CJ, Rodeghier M, DeBaun MR, and **Cronin RM.** (2021). "Economic Evaluation of Regular Transfusions for Cerebral Infarct Recurrence in the Silent Cerebral Infarct Transfusion Trial." *Blood Advances,* in press.

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. *Journal of the American Medical Informatics Association,* in press.

Nelson LA, Spieker AJ, **Kripalani S**, Rothman RL, Roumie CL, Coco J, Fabbri D, Levy P, Collins SP, McNaughton CD. (2021). User preferences for and engagement with text messages to support antihypertensive medication adherence: Findings from a pilot study evaluating an emergency department-based behavioral intervention. *Patient Education and Counseling*, in press.

Conference Abstracts

Nelson LA, Spieker AJ, Molli S, LeStourgeon LM, Greevy RA, **Mayberry LS**. The Goldilocks dilemma in mHealth interventions: Balancing user response and reflection. Oral presentation (Live Research Spotlight) at the *43rd Society of Behavioral Medicine's Annual Meeting*, Baltimore, MD, April 2022.

Wanderer JP. Annual Meeting 2021. American Society of Anesthesiologists; San Diego, California. 2021 Oct; Building a more robust NACOR version 2.0: Using Electronic Medical Records to Get Data that is Miles Wide and Miles Deep.

Wanderer JP. Annual Meeting 2021. American Society of Anesthesiologists; San Diego, California. 2021 Oct; Leveraging Technology in Perioperative Care During a Global Crisis: Telemedicine for Pre-Anesthesia Evaluation.

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!