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| ­Piper Ranallo, PhD | | |  |  |
| sven0018@umn.edu | | |  | 612-720-6489 |
| **Education**  PhD, Health Informatics (2013) University of Minnesota  MHI, Health Informatics (2010) ) University of Minnesota  BA, Psychobiology (1995) UCLA | | | | |
| **Certifications**  Human Subjects Protection Certification (NIH, 2021)  Epic 2010, 2012 Procedures and Orders  Epic 2010, 2012 Clinical Documentation  SNOMED-CT Foundations Certificate (IHTSDO, 2015)  SNOMED-CT Authoring Certificate (SNOMED International, 2019)  **Work History** | | | |
| **MHealth Fairview**  Informatics Terminology Consultant  (2020-present) | * As technical lead for OMOP CDM implementation, created ETL scripts and performed concept mapping to convert local information models and codes to OMOP-compliant information models with standard concept bindings. * Worked with clinical subject matter experts and SNOMED International to add new or modify existing concepts with inaccurate or incomplete modeling * Worked with EHR vendor to more fully leverage the native concept mapping features of the product and developed a strategy for ensuring more robust and accurate concept linking within the EHR itself. | | |
| **American Academy of Neurology**  Informatics Manager  (2019-2020) | * Created a 5-year Informatics Strategic Plan to increase knowledge about and application of informatics technologies for internal staff and professional society members * Worked with staff to build informatics technologies and best practices into clinical quality products and workflows, including the Neurology Registry, Clinical Quality Measure (CQM and eCQM) development process, and Clinical Practice Guideline (CPG) development process. * Established and facilitated the Neurology Informatics Workgroup within the Academy and worked to engage and educate members to become informatics leaders both within the Academy and at their own institutions * Worked with members to support and guide development of informatics products at their own institutions * Worked closely with Standards Development Organizations (SDOs) including SNOMED and LOINC to request content for use in CQMs. | | |
| **Minnesota Department of Health (MDH)**  Immunization Information System, Senior Consultant  (2017-2019) | * Worked with hospitals, pharmacies, clinics, and vendors to configure clinical information systems (CISs) to capture and transmit immunization data real-time via HL7 messages to MDH’s Immunization Information System (IIS) * Developed an overarching data quality plan for the IIS * Performed a comprehensive interoperability assessment | | |
| **Six Aims for Behavioral Health**  Non-Profit Founder  (2014-present) | * 2017-2019. Consultant to National Institutes of Health Office of Behavioral and Social Science Research (NIH OBBSR). * 2017-2018. Consultant to US Substance Abuse and Mental Health Services Administration (SAMHSA) * Founded a non-profit to develop methods and products for capturing structured, standardized data for behavioral health in EHRs and other CISs * Developed an information model for capturing structured DSM-5 diagnostic data; model includes terminology bindings to SNOMED CT * Consultant on several information modeling and terminology mapping projects with organizations including the University of Minnesota College of Pharmacy and Department of Radiology; Optum Division of Innovation and Research; and the National Council for Behavioral Health and US Substance Abuse and Mental Health Services Administration (SAMHSA). | | |
| **The College of St Scholastica**  Adjunct Instructor  (2014-2016) | * Developed curriculum and taught *Databases in Healthcare* course for 5 terms * Designed, developed, and recorded lectures and tutorials * Held weekly online virtual lab sessions with students | | |
| **Hennepin County Medical Center**  Clinical Decision Support Specialist  (2013-2014) | * Worked closely with healthcare teams in neurosurgery, critical care, emergency medicine and anesthesiology to model clinical workflows and build EHR components to support clinical workflow * Automated data extraction from various electronic systems for pooling and aggregating clinical measures for provider credentialing * Designed and built Epic orders, order sets, flowsheets and alerts * Designed and built Epic note templates for clinical documentation * Designed and built queries and reports using Clarity (Epic data warehouse) * Developed strategies for implementing healthcare standards such as LOINC and SNOMED CT into Epic | | |
| **University of Minnesota**  Graduate Assistant  (2009-2012) | Institute for Health Informatics, Curricular Fellow (2010-2012)   * Performed research on obstacles to improving healthcare through the application of health IT in psychiatry and behavioral health * Performed research on gaps in clinical terminologies and developed information models for psychiatry and behavioral health * Teaching Assistant for several courses   School of Public Health, Research Assistant (2009-2010)   * Assisted with development of curriculum and creation of learning materials for a continuous quality improvement (in healthcare) course * Instructed and mentored students in the use of statistical process control software (Statit eQC) | | |
| **Children’s Hospitals and Clinical of Minnesota**  Measurement Specialist (2007–2009) | * Worked with clinical and IT staff to translate clinical variables into standard data elements that could be built into the EHR and other databases to be leveraged in clinical, measurement and research workflows * Designed, built and implemented workflow and supporting databases and computer programs for performance improvement, patient safety, and compliance (including Joint Commission audit) * Built a study database to support RCTs for the pain, palliative care, and integrative medicine team | | |
| **Family** (2004–2006) | * Left the paid workforce to care for my preschooler and new baby | | |
| **Universal Hospital Services**  Data Architect (2002–2004) | * Worked with business-area managers to ensure company information systems met core business requirements * Designed and developed databases and programs for integrating and processing data from multiple datasources | | |
| **GE Capital Consulting**  Senior Consultant, Integration Specialist (1996–2002) | * Designed, built, tested and implemented data extraction, transformation and load routines (ETL) for system conversions * Performed database administration for multiple SQL Server systems * Wrote SQL based programs to manage server administration tasks and process data within databases | | |
| **Additional Research Experience** | | | |
| University of Minnesota, Research Assistant | * Analyzed data using Statit eQC and SPSS v 17.0 * Wrote narrative for sections of studies performed and prepared manuscripts for submission | | |
| Children’s Hospitals and Clinics of Minnesota, Integrative Medicine | * Developed electronic data collection tools (forms, databases) * Developed sampling methodology and analysis plans * Performed chart reviews; coded and analyzed study data * Worked with clinical staff to develop data collection methods to integrate research and care-delivery workflows | | |
| UCLA, Student Research Assistant (Child Abuse Study) | * Consented and interviewed study participants * Administered measures to individuals and small groups * Developed a coding system to analyze data * Transcribed and coded data | | |
| UCLA-Brentwood VA, Laboratory Assistant (Immunohistochemistry Lab) | * Performed animal perfusions and dissections * Prepared, sectioned, and stained tissue * Documented protocols followed | | |

**Volunteer Experience**

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| Los Angeles Free Clinic  LA Commission on Assaults Against Women (LACAAW)  Minneapolis Crisis Nursery  El Monte Children’s Shelter | * Human Sexuality Peer Counselor * Completed an intensive training program in human sexuality * Crisis Intervention Counselor * Provided support, information, and referrals to survivors of sexual and/or domestic violence * Cared for infant-to 5-year-old children of families in crisis * Provided care for drug affected newborns, and for infants/toddlers removed from their homes as the result of abuse or neglect |

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| **Software and Technical Skills** | |
| Electronic Health Records (EHRs) | * Epic Inpatient 2010, 2012 * Epic Clarity 2012 * Netsmart MyAvatar 2016 |
| Analytics and Clinical Trials Software | * SAS * Statit-eQC (Statistical Process Control Software) * REDCap (design, coding, configuration) |
| Process Design and Analysis | * Data Modeling * UML / Use Case Development * Clinical Information Modeling * Continuous Quality Improvement (CQI) Modeling Techniques |
| Data Modeling Tools | * S-Designer (remote experience) * Erwin (remote experience) * Enterprise Architect (SparxSystems) * Microsoft Visio |
| Data Integration Tools | * Microsoft SQL Server Business Intelligence Development Studio * SQL Server Integration Services (SSIS) |
| Relational Database Management Systems | * Microsoft SQL Server, SQL Server Management Studio * MySQL Community Server * Microsoft Access * Oracle, SQL Developer |
| Programming Languages and Technologies | * Microsoft transact-SQL, ANSI-92 SQL, PL/SQL * HTML, XML * MS Word VBA, MS Excel VBA, MS Access VBA, Visual Basic Object Models * C/C++ (remote experience) * Python 2.6 |
| Productivity Software | * Visio Professional 2007, 2010, 2013 * Microsoft Office Productivity Tools, including development with Microsoft’s application API |
| Other Core Competencies | * Design and implementation of information and workflow systems to support measurement and analytics * In depth understanding of existing clinical nomenclatures, terminologies, and coding systems (SNOMED-CT, LOINC, UMLS, DSM-IV-TR, DSM-5, ICD-9-CM, ICD-10-CM), as well as controlled vocabularies used in publication indexing systems (i.e., MeSH, Psychological Index Terms) * Unified Medical Language System (UMLS) and UMLS Terminology Services (UTS) applications * Quantitative and statistical analysis, including the use of Statistical Process Control (SPC) methods |

**Publications**

**Ranallo, P**., Southwell, B, Tignanelli, C, Johnson, S.J., Krueger, R., Sevareid-Groth, T., and Melton, G.B. (2023). Promoting Learning Health System Cycles by Optimizing EHR Data Clinical Concept Encoding Processes. *MedInfo23 Proceedings.*

Tenenbaum, J.D. & **Ranallo, P.A** (2021) (Eds.). *Mental health informatics: enabling a learning mental healthcare system.* Switzerland: Springer Nature. [ISBN: 978-3-030-70558-9](https://link.springer.com/book/10.1007/978-3-030-70558-9)

**Ranallo, P.A**. & Tenenbaum, J.D. (2021). *Precision medicine and a learning health system for mental health*. In Tenenbaum, J.D. & Ranallo, P.A. (Eds.). *Mental health informatics: enabling a learning mental healthcare system* (pp. 1-30). Switzerland: Springer Nature. [DOI: 10.1007/978-3-030-70558-9\_1](https://link.springer.com/chapter/10.1007/978-3-030-70558-9_1)

**Ranallo, P.A**. & Tenenbaum, J.D. (2021). *Mental health informatics*. In Tenenbaum, J.D. & Ranallo, P.A. (Eds.). *Mental health informatics: enabling a learning mental healthcare system* (pp. 121-154). Springer Nature. [DOI: 10.1007/978-3-030-70558-9\_6](https://link.springer.com/chapter/10.1007/978-3-030-70558-9_6)

**Ranallo, P.A**. & Tenenbaum, J.D. (2021). *Technologies for the computable representation and sharing of data and knowledge in mental health*. In Tenenbaum, J.D. & Ranallo, P.A. (Eds.). *Mental health informatics: enabling a learning mental healthcare system* (pp. 155-189)*.* Switzerland: Springer Nature. [DOI: 10.1007/978-3-030-70558-9\_7](https://link.springer.com/chapter/10.1007/978-3-030-70558-9_7)

Tenenbaum, E., **Ranallo, P.A**. & Hastings, J. (2021). *Informatics technologies for the acquisition of psychological, behavioral, interpersonal, social and environmental data*. In Tenenbaum, J.D. & Ranallo, P.A. (Eds.). *Mental health informatics: enabling a learning mental healthcare system* (pp. 217-234). Switzerland: Springer Nature. [DOI: 10.1007/978-3-030-70558-9\_9](https://link.springer.com/chapter/10.1007/978-3-030-70558-9_9)

Westra, B.L., Christie, B., Gao, G., Johnson, S.G., Pruinelli, L., LaFlamme, A., Park, J.I., Sherman, S., **Ranallo, P.A**., Speedie, S., & Delaney, C. (2017*). Inclusion of Flowsheets from Electronic Health Records to Extend Data for Clinical and Translational Science Awards (CTSA) Research*. In Delaney C, Weaver C, Warren J, Clancy T, & Simpson R (Eds). *Big-data enabled nursing: education, research and practice*. London: Springer. [DOI: 10.1007/978-3-319-53300-1\_8](https://link.springer.com/chapter/10.1007/978-3-319-53300-1_8)

Westra, B.L., Christie, B., Johnson, S.G., Pruinelli, L., LaFlamme, A., Park, J., Sherman, S.G., Byrne, M.D., **Ranallo, P**., Speedie, S. (2016). *Modeling Flowsheet Data for Quality Improvement and Research*. [2016 AMIA Proceedings](https://knowledge.amia.org/amia-63300-1.3360278/t001-1.3365273/f001-1.3365274/2497079-1.3365313/2497079-1.3365316?qr=1).

**Ranallo, P.A**., Kilbourne, A., Whatley, A.S, & Pincus, H.A. (2016). *Behavioral Health Information Technology: From Chaos to Clarity*. Health Affairs, 35(6), 1106-1113 Project Hope-The People-to-People Health Foundation, Inc. [PMID: 27269029](https://pubmed.ncbi.nlm.nih.gov/27269029/)

Westra, B.L., Christie, B., Johnson, S.G., Pruinelli, L., LaFlamme, A., Park, J., Sherman, S.G., Byrne, M.D., **Ranallo, P**., Speedie, S. (2016*). Expanding Interprofessional EHR Data in i2b2*. 2016 AMIA-CRI Proceedings. [PMID 27570680](https://pubmed.ncbi.nlm.nih.gov/27570680/)

**Ranallo, P.A** (2015). Introduction to MySQL. In Marc, D. & Sandefer, R. (Eds.), *Data Analytics in Healthcare Research: Tools and Strategies*. Chicago, IL: AHIMA Press. [ISBN 1584264438](https://www.amazon.com/Data-Analytics-Healthcare-Research-Strategies/dp/1584264438)

**Svensson-Ranallo, P**., Chute, C., LaVenture, M., Nelson, K., Krueger, R. (2013). *Psychological Assessment Instruments: A Coverage Analysis Using SNOMED-CT, LOINC and CDISC-QS Terminology*. 2013 AMIA Proceedings. [PMID: 24551411](https://pubmed.ncbi.nlm.nih.gov/24551411/)

**Svensson-Ranallo, P**., Adam, T. J., & Sainfort, F. (2011). *A Framework and Standardized Methodology for Developing Minimum Clinical Data Sets*. 2011 AMIA-CRI Proceedings. [PMID: 22211180](https://pubmed.ncbi.nlm.nih.gov/22211180/)

**Posters**

**Ranallo, P.A**., Christie, B., Johnson, S.G., Pruinelli, L., LaFlamme, A., Park, J., Sherman, S.G., Byrne, M.D., Ranallo, P., Speedie, S., Westra, B.L. (2016). *Pooling Mental Health Data Collected in EHRs: A Methodology for Developing an RDoc-Based Research Repository*. Poster presentation, 2016 AMIA Joint Summits. <https://knowledge.amia.org/>

Richtsmeier-Cyr, L., Culbert, T., Fitzgerald, M., **Ranallo, P**., Finkelstein, M. (2009). *Clinical Description of an Inpatient Pediatric Integrative Medicine Service*. Poster presented at 2009 North American Research Conference on Complementary and Integrative Medicine.

**Teaching**

04/2022 ***SNOMED-CT***. Guest Lecture, Institute for Health Informatics, HINF 5520, University of Minnesota, Minneapolis, MN.

04/2021 ***Mental Health Informatics***. Guest Lecture, Institute for Health Informatics, HINF 5520, University of Minnesota, Minneapolis, MN).

04/2021 ***Semantic Technologies and SNOMED-CT***. Guest Lecturer, Clinical Informatics Course, University of Minnesota, Minneapolis, MN).

05/2019 ***Semantic Technologies and SNOMED-CT***. Guest Lecture, Institute for Health Informatics, HINF 5520, University of Minnesota, Minneapolis, MN.

04/2018 ***SNOMED-CT***. Guest Lecture, Institute for Health Informatics, HINF 5520, University of Minnesota, Minneapolis, MN.

2014-2015 ***Databases in Healthcare.*** Course Instructor (5 terms). Saint Scholastica, Department of Health Informatics and Information Management.

**Invited Talks**

09/2022 ***Towards a Process Based Ontological Representation of Disorders and Procedures****.* SNOMED International Business Meeting and Expo. Lisbon, PT.

04/2022 ***Disambiguating Substance Use and Abuse Concepts in SNOMED-CT****.* SNOMED International Business Meeting. London, UK.

04/2022 ***Modeling State, Process and Function in SNOMED-CT****.* SNOMED International Business Meeting. London, UK.

08/2021 ***Representing Mental Functioning: The Role of Clinical Terminology***. Invited Talk, NIH, Rehabilitation Medicine Department, Bethesda, MD (Virtual).

03/2019 ***The Role of Ontologies and Systems for Knowledge Representation in the Behavioral and Social Sciences****.* Invited co-facilitator for two-day workshop at NIH, OBSSR. Bethesda, MD

06/2018 ***Semantic Representation in Mental Health: Getting Here and Moving Forward***. Invited co-Key Note presentation, *The 1st International Workshop on the Semantics of Mental Health* (SemanticMH2018), New York, NY.

03/2017 ***Informatics Challenges in Mental Health.***  Panel Presentation, AMIA Joint Summits on Translational Science, San Francisco, CA.

08/2017 ***A Role for Informatics in RDoC and Behavioral Health***. Invited talk at NIMH, RDoC Unit. Bethesda, MD.

03/2015 ***Mental Health Informatics: Important Next Steps***. Invited Lecture, Institute for Health Informatics Grand Rounds, University of Minnesota, Minneapolis, MN.

11/2013 ***Psychological Assessment Instruments: A Coverage Analysis Using SNOMED-CT, LOINC And CDISC-QS Terminology***. Podium Presentation, AMIA Conference, Washington, DC.

02/2012 ***A Controlled Vocabulary and Standard Representation of Psychometric Instruments: Addressing a Gap in Existing Biomedical Terminologies*** Invited Lecture, Institute for Health Informatics, University of Minnesota, Minneapolis, MN.

03/2011 ***A Framework and Standardized Methodology for Developing Minimum Clinical Data Sets***. Podium Presentation, Clinical Research Informatics Conference, San Francisco, CA.

**Committees and Workgroups**

2022 – ***Observational Health Data Sciences and Informatics (OHDSI)*** ***Psychiatry Working Group.*** Member

2021 – ***SNOMED Observable Advisory Group***, Member

2018 – ***SNOMED Mental and Behavioural Health Clinical Reference Group***, Chair

2018-2019 ***Behavioral and Social Sciences Cross Cutting Workgroup: Behavioral Ontologies development (BOD)*** Workgroup, Member

2017– ***AMIA Mental Health Informatics Workgroup***, Vice-Chair (2017-2018)

2017-2019 ***HL7 Behavioral Health Special Interest Group***, Co-Chair

2011-2012 ***Office of the National Coordinator (ONC/SAMHSA), Technical Expert Panel (TEP)***, developing electronic clinical quality measures (eCQMs) for mental health

2011-2012 ***University of Minnesota Institute of Health Informatics***, Health Informatics Graduate Student Council, Co-Chair