Casey Lynnette Overby, PhD
Assistant Professor, Department of Medicine
University of Maryland School of Medicine
Program for Personalized and Genomic Medicine (PPGM)
Center for Health-related Informatics and Bioimaging (CHIB)
Adjunct Investigator I, Geisinger Health System

Professional Experience

2014-present   Adjunct Investigator I, Geisinger Health System, Danville, PA
2013-present   Assistant Professor, Department of Medicine, University of Maryland School of Medicine, Baltimore, MD
2013-present   Affiliate Professor, University of Maryland, College Park, MD
2010-2011   Data Curator Contractor, Sage Bionetworks, Seattle, WA
2008   Medical Informatics Trainee Summer Rotation Student, National Library of Medicine-NIH, Bethesda, MD
2004-2007   Biomedical Informatics Core Facility, University of Pennsylvania, Philadelphia, PA

Education

2011-2013   Postdoctoral Research Fellowship, Biomedical Informatics, Columbia University
2011   Ph.D., Biomedical and Health Informatics, University of Washington School of Medicine
2011   Graduate Certificate, Public Health Genetics, University of Washington School of Public Health
2006   M.B., Biotechnology (Bioinformatics track), University of Pennsylvania School of Arts and Sciences and Penn Engineering
2004   B.S., Bioinformatics (Individual Concentration Program), University of Michigan

Teaching Experience

2014,2013   Guest Lecturer, Personal Genomes in Medicine (MEDC 540), University of Maryland School of Medicine
2013   Teaching Assistant, Exploration of Clinical Information Needs (BINF G4022), Columbia University
2012,2011   Guest Lecturer, Symbolic Methods course (BINF G4003), Columbia University
2012   Teaching Assistant, Intro to Computer Applications in Health Care and Biomedicine (BINF G4001), Columbia University
2011   Group Facilitator, Problem Based Learning course (HuBio 559), University of Washington School of Medicine

Recent Service Activities

2015   Student Paper Competition Committee member, AMIA 2015 Annual Symposium

(Nov 14-18th, 2015)

2015   Program Committee Member, The 1st International Workshop on Data Management & Analytics for Medicine & Healthcare

            (Sept 4, 2015)

2014   Steering Committee Member, 9th AMIA Policy Invitational (Sep 4-5th, 2014)

2014   Scientific Program Committee (SPC) member, AMIA 2014 Annual Symposium (Nov 15-19th, 2014)

Publications

2015 Publications

Peer-reviewed Journal and Conference Papers

Overby CL, Maloney KA, Alestock TD, Chavez J, Berman D, Sharaf RM, Fitzgerald T, Kim EY, Palmer K, Shuldiner AR, Mitchell BD. Prioritizing Approaches to Engage Community Members and Build Trust in Biobanks: A Survey of Attitudes and Opinions of Adults within Outpatient Practices at the University of Maryland. Journal of Personalized Medicine (2015) (in press)

- In a special issue of the Journal of Personalized Medicine on Biobanking and EHR/EMR (Guest Editor: Dr. Lori A. Orlando)

Wiley LK, Tarczy-Hornoch P, Denny JC, Freimuth RR, Overby CL, Shah N, Martin RD, Sarkar IN. Harnessing next-generation informatics for personalizing medicine: a report from AMIA's 2014 Health Policy Invitational Meeting. Journal of the American Medical Informatics Association (2015) (in press)

Cutting EM*, Overby CL*, Banchero M, Pollin T, Kelemen M, Shuldiner AR, Beitelshees AL. Using Workflow Modeling to Identify Areas to Improve Genetic Test Processes in the University of Maryland Translational Pharmacogenomics Project. AMIA Annual Symposium Proceedings. San Francisco, CA. 2015 (Paper presentation, accepted).

Herr T, Bielinski SJ, Bottinger E, Brauthbar A, Brilliant M, Chute CG, Cobb BL, Hakonarson H, Hartzler A, Hripcsak G, Kannry J, Kohane I, Kullo I, Lin S, Manzi S, Marsolo K, Overby CL, Pathak J, Peissig P, Pully J, Ralson J, Rasmussen L, Roden D, Tromp G, Weng C, Uphoff T, Wolf W, Williams MS, Starren J. Practical considerations in genomic decision support: The eMERGE experience. Journal of Pathology Informatics (2015) (in press)

Shirts BH, Salama JS, Aronson SJ, Chung WK, Gray SW, Hindorff LA, Jarvik GP, Plon SE, Stoffel EM, Tarczy-Hornoch PZ, Van Allen EM, Weck KE, Chute CG, Freimuth RR, Grundmeier RW, Hartzler AL, Li R, Peissig PL, Peterson JF, Rasmussen LV, Starren JB,

Williams MS, Overby CL. CSER and eMERGE: Current and Potential State of the Display of Genetic Information in the Electronic Health Record. Journal of the American Medical Informatics Association. (2015) (in press)

Overby C, Palma G, Vidal ME, Zotkina E, Flores A, Raschid L. Combining Multiple Knowledge Sources: A Case Study of Drug Induced Liver Injury. 11th International Conference on Data Integration in the Life Sciences. Los Angeles, CA (Paper presentation, accepted).

Overby CL, Cutting E, Kumari P, Guo S, Schriml L. Use of the Disease Ontology to Screen Genomic Sequencing Study Participants for Condition-specific Phenotypes: Application to Population Health Management. ISMB 2015 Phenotype Day. Dublin, Ireland. (Paper presentation, accepted)

Overby CL, Devine EB, Abernethy N, McCune JS, Tarczy-Hornoch P. Making Pharmacogenomic-based Prescribing Alerts More Effective: A Scenario-based Pilot Study with Physicians. Journal of Biomedical Informatics. 2015 June; 249-259.

Conference Abstracts

Rasmussen L, Overby CL, Connolly J, Chute C, Denny J, Freimuth RR, Hartzler AL, Hedberg R, Holm I, Manzi S, Pathak J, Peissig PL, Shirts B, Smith M, Stoffel E, Tarczy-Hornoch P, Williams MS, Wolf WA, Starren J. 2015. Assessment of the Development and Delivery of Genomic Medicine Information Resources. AMIA Translational Bioinformatics Symposium. San Francisco, CA. (Poster presentation).

Overby CL, Cutting L, Williams M. Using Genomic Medicine Resources Under Three Prescribing Scenarios: Issues with Information Seeking. 36th Annual Meeting & Scientific Sessions of the Society of Behavioral Medicine. 2015. San Antonio, TX. (Poster presentation)

Plon SE, Shirts BH, Salama J, Aronson S, Chung W, Freimuth R, Hindorff LA, Starren J, Tarczy-Hornoch P, Allen EV, Weck K, Williams M, and Overby C for the Electronic Health Records Working Groups. Display of Genetic Information in the Electronic Health Record: From Varied Chaos to Everything in Its Place. ACMG Annual Clinical Genetics Meeting. 2015. Salt Lake City, Utah. (Podium presentation)

2014 Publications

Peer-reviewed Journal and Conference Papers

Overby CL, Hripcsak G, Shen Y. Estimating heritability of drug-induced liver injury from common variants and implications for future study designs. Scientific Reports. 2014 Jul 21;4:5762

Overby CL, Rasmussen LV, Hartzler A, Connolly JJ, Peterson JF, Hedberg RE, Freimuth RR, Shirts BH, Denny JC, Larson EB, Chute CG, Jarvik GP, Ralston JD, Shuldiner AR, Starren J, Kullo IJ, Tarczy-Hornoch P, Williams MS. A Template for Authoring and Adapting Genomic Medicine Content in the eMERGE Infobutton Project. AMIA 2014 Annual Symposium. Washington, DC. (Paper presentation).

- **Nomination for Distinguished Paper Award**

Devine EB, Lee CJ, Overby CL, Abernethy N, McCune J, Smith JW, Tarczy-Hornoch P. Usability Evaluation of Pharmacogenomics Clinical Decision Support Aids and Clinical Knowledge Resources in a Computerized Provider Order Entry System: A Mixed Methods Approach. International Journal of Medical Informatics. 2014; 83(7):473-83.

Overby CL, Erwin AL, Abul-Husn NS, Ellis SB, Scott SA, Obeng AO, Kannry JL, Hripcsak G, Bottinger EP, Gottesman O. Physician Attitudes Toward Adopting Genome-guided Prescribing Through Clinical Decision Support. Journal of Personalized Medicine. 2014, 4, 35-49.

- In a special issue of the Journal of Personalized Medicine on Bringing Personalized Medicine into Clinical Practice (Guest Editor: Dr. Lori A. Orlando)

Shuldiner AR, Palmer K, Pakyz RE, Alestock TD, Malony KA, O'Neil C, Bhatty S, Schub J, Overby CL Horenstein R, Pollin TI, Kelemen MD, Beitelshees AL, Robinson SW, Blitzer M, McArde PF, Brown L, Zhao R, Ambulos N, Vesely M. Implementation of Pharmacogenomics: The University of Maryland Program for Personalized and Genomic Medicine. American Journal of Medical Genetics Part C: Seminars in Medical Genetics. 2014.

- In a special issue of the American Journal of Medical Genetics Part C: Seminars in Medical Genetics on Implementation of Genomic Medicine (Guest Editor: Dr. Marc S. Williams)

Conference Abstracts

Tarczy-Hornoch P, Sarkar IN, Shah N, Overby CL, Freimuth RR. Harnessing Next-Generation Informatics for Personalizing Medicine: Report from the 2014 AMIA Health Policy Invitational Meeting. AMIA 2014 Annual Symposium. Washington, DC. (Panel presentation)

Chavez J, Overby CL. The Development of a Needs Assessment Survey to Investigate the Role of Information Technology in the Engagement of Biobank Participants. ABRCMS 2014. San Antonio, TX. (Poster presentation)

Kant R, Loper HB, Levitt DK, Malek R, Overby CL, Munir KM. Weight Based Levothyroxine Dosing Fails to Predict Thyroid Hormone Replacement in Primary Hypothyroid Patients. ICE/ENDO 2014. Chicago, IL. (Poster presentation)

2013 Publications

Peer-reviewed Journal and Conference Papers

Overby CL, Pathak J, Gottesman O, Haerian K, Perotte A, Murphy S, Bruce K, Johnson S, Talwalker J, Shen Y, Ellis S, Kullo I, Chute C, Friedman C, Bottinger E, Hripcsak G, Weng C. A Collaborative Approach to Develop an Electronic Health Record Phenotyping Algorithm for Drug-Induced Liver Injury. Journal of the American Medical Informatics Association. 2013 Dec; 20(e2):e243-52. doi:10.1136/amiajnl-2013-001930. Epub 2013 July 9.

- o In a special focus issue of the Journal of the American Medical Informatics Association on Electronic Health Records-Driven Phenotyping (Guest Editors: Drs. Jyotishman Pathak, Joshua C. Denny and Abel N. Kho)

Cimino JJ, Overby CL, Devine EB, Hulse NC, Jing X, Maviglia SM, Del Fiol G. Practical Choices for Infobutton Customization: Experience from Four Sites. AMIA 2013 Fall Symposium. (Paper presentation)

Overby CL*, Kohane I*, Williams MS, Kannry J, Starren JB, Bottinger E, Gottesman O, Denny JC, Weng C, Tarczy-Hornoch P, Hripcsak G. Opportunities for Genomic Clinical Decision Support Interventions. Genetics in Medicine. 2013; 15, 817-823. (*indicates co-first author)

- o **AMIA President's pick session** (11/2013): Paper was covered during this panel on "Integrating Genomic Data into the EHR: The eMERGE Experience" [link]
- o ACMG Media coverage (09/2013): "Genetics in Medicine publishes special issue dedicated to genomics in electronic health records" [link]
- o Invited commentary in a special Issue of Genetics in Medicine on electronic health record (EHR) integration (Guest Editors: Drs. Joseph Kannry and Marc Williams)

Lau B, Overby CL, Wirtz HS, Devine EB. The Association between Use of a Clinical Decision Support Tool and Adherence to Monitoring for Medication-Laboratory Guidelines in the

Ambulatory Setting. Applied Clinical Informatics. 2013; 4:476-491.

Gottesman O, Scott SA, Ellis SB, Overby CL, Ludtke A, Hulot J, Hall J, Chatani K, Myers K, Kannry JL, Bottinger EP, The CLIPMERGE PGx Program: Clinical Implementation of Personalized Medicine through Electronic Health Records and Genomics – Pharmacogenomics, Clinical Pharmacology & Therapeutics. 2013 Aug;94(2):214-7. doi:10.1038/clpt.2013.72. Epub 2013 Apr 3.

Del Fiol G, Curtis C, Cimino JJ, Iskander A, Kalluri ASD, Jing X, Hulse NC, Long J, Overby CL, Schardt C, Douglas DM. Disseminating Context-Specific Access to Online Knowledge Resources within Electronic Health Record Systems. Studies in Health Technology and Informatics. 2013; 192:672-6.

Overby CL, Weng C, Harian K, Perotte A, Friedman C, Hripcsak G. Evaluation considerations for EHR-based phenotyping algorithms: A case study for drug-induced liver injury. AMIA Summit on Translational Bioinformatics, Mar 18-20th, 2013. San Francisco, CA. (Paper presentation).

- o **Nomination for Distinguished Paper Award**

Overby CL, Chung WK, Hripcsak G, Kukafka R. Cancer Genetic Counselor Information Needs for Risk Communication: A Qualitative Evaluation Interview Transcripts. Journal of Personalized Medicine. 2013; 3(3):238-250.

Overby CL, Tarczy-Hornoch P. Personalized Medicine: Challenges and Opportunities for Translational Bioinformatics. Personalized Medicine. 2013; 10(4);453-462.

- o Invited commentary in Personalized Medicine

Conference Abstracts
Overby CL, Sabain S, Torres J, Kukafka R. An Instrument to Assess Patient Pre-visit Preparation for Cancer Genetic Counseling: A Preliminary Assessment. Individualizing Medicine Conference 2013. Rochester, MN. (Poster presentation)

2012 Publications

Peer-reviewed Journal and Conference Papers

Overby CL*, Tarczy-Hornoch P*, Kalet I, Thummel K, Smith J, Del Fiol G, Fenstermacher D, Devine EB. Development of a prototype model for integrating pharmacogenomics findings into clinical practice. Journal of Personalized Medicine. 2012; 2(4):241-256. (*indicates co-first

author)

- o In a special issue of Journal of Personalized Medicine titled "Untold Stories about Personalized Medicine: If You Thought Personalized Medicine is for Others to Worry about, Think Again" (Guest Editor: Dr. Felix W. Frueh)

Overby CL, Devine EB, Tarczy-Hornoch P, Kalet I. Deriving Rules and Assertions From Pharmacogenomic Knowledge Resources In Support of Patient Drug Exposure Predictions. Journal of the American Medical Informatics Association. 2012; 19(5):840-850.

- o **Editors' Choice award**, Journal of the American Medical Informatics Association
- o **Invited JAMIA journal club presentation** [link]

Conference Abstracts

Overby CL, Hripcsak G, Shen Y. Estimating heritability of drug induced liver injury from genome-wide common variants. 8th annual PGRN Statistical Analysis Workshop, Dec 4-5th, 2012. Austin, TX. (Oral presentation)

Gottesman O, Ellis S, Overby C, Scott S, Ludtke A, Kannry J, Patel K, Hulot JS, Bottinger EB. CLIPMERGE PGx: Clinical Implementation of Personalized Medicine through Electronic Health Records and Genomics - Pharmacogenomics. Individualizing Medicine 2012 Conference at Mayo Clinic, Rochester, MN. (Poster presentation)

Overby CL, Devine EB, Abernethy N, McCune J, Tarczy-Hornoch P. Assessing the effective communication of pharmacogenomics knowledge embedded in the electronic health record to support drug therapy individualization. AMIA 2012 Annual Symposium. Chicago, IL. (Podium presentation)

Overby CL, Hripcsak G, Shen Y. Estimating heritability captured by common variants in pharmacological traits. NLM Annual Biomedical Informatics Trainee Meeting 2012. Madison, WI. (Poster presentation)

2011 and Earlier Publications

Doctoral Dissertation

"A Clinical Decision Support Model for Incorporating Pharmacogenomics Knowledge Into Electronic Health Records for Drug Therapy Individualization: A Microcosm of Personalized

Medicine." 2011. University of Washington. Advisor: Dr. Peter Tarczy-Hornoch.

Peer-reviewed Journal and Conference Papers

Overby CL, Tarczy-Hornoch P, Hoath J, Smith JW, Devine EB, Fenstermacher D. An Evaluation of Functional and User Interface Requirements for Phamracogenomic Clinical Decision Support. IEEE Health Informatics, Imaging, and Systems Biology (HISB) Conference 2011, San Jose, CA (Paper presentation)

Overby CL, Devine EB, Tarczy-Hornoch P, Kalet I. Deriving Rules and Assertions From Pharmacogenomic Knowledge Resources In Support of Patient Drug Response Predictions. Intelligent Data Analysis in Biomedicine and Pharmacology (IDAMAP) Conference 2010, Washington, DC. (Paper presentation)

Overby CL, Tarczy-Hornoch P, Hoath J, Kalet I, Veenstra D. Feasibility of Incorporating Genomic Knowledge Into Electronic Medical Records for Pharmacogenomic Clinical Decision Support. BMC Bioinformatics. 2010 Oct 28; 11 Supp 9:S10

> o **Outstanding paper award**, presented at 2010 AMIA Summit on Translational Bioinformatics and selected to be published as a journal article.

Overby CL, Tarczy-Hornoch P, Demner-Fushman D. The Potential for Automated Question Answering in the Context of Genomic Medicine: An Assessment of Existing Resources and Properties of Answers. BMC Bioinformatics. 2009 Sept 17; 10 Supp 9:S8

> o **Outstanding paper award**, presented at 2009 AMIA Summit on Translational Bioinformatics and selected to be published as a journal article.

Fenstermacher D, Street C, McSherry T, Nayak V, Overby C, Feldman M. The Cancer Biomedical Informatics Grid (caBIGTM) Conf Proc IEEE Eng Med Biol Soc Proceedings. 2005; 1:743. (Paper presentation)

Conference Abstracts

Overby CL, Tarczy-Hornoch P. Predicting the false-positive rate for a well-established mutation panel test: Implications for genome-wide testing. University of Washington, Graduate & Professional Student Senate (GPSS) Science and Policy Summit, May 29th, 2011 (Poster presentation)

Overby CL, Tarczy-Hornoch P. Predicting the Impact of Clinical and Analytical Validity on Genetic Test Results. NLM Annual Biomedical Informatics Trainee Meeting 2010. Aurora, CO. (Poster presentation)

Overby CL, Galdzicki M, Gennari J. Features of Simulation Environments Utilized in

Biomedical Research. NLM Annual Biomedical Informatics Trainee Meeting 2008, Bethesda, MD. (Poster presentation)

Overby CL, Galdzicki M, Gennari JH. Analysis of simulation environments utilized in biomedical research. AMIA 2008 Annual Symposium Proceedings. 6:1077. (Poster presentation)

Overby CL, Demner-Fushman D, Aaronson A. NLM Tools for Translational Questions. NIH Research Festival 2008, Bethesda, MD. (Poster presentation)

Overby CL, Kirk JA, Shroff SG. A Model Based Analysis of Steady-State versus Dynamic Aspects of the Relationship between Calcium and Force. Summer Research Symposium at Duquesne University. 2007. Pittsburgh, PA. (Poster and oral presentation)

*indicates co-first author

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