

**BIOGRAPHICAL SKETCH**

Provide the following information for the Senior/key personnel and other significant contributors.  
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NAME: Cronin, Robert, Michael, II

POSITION TITLE: Research Fellow, Biomedical Informatics. Clinical Instructor, Internal Medicine/Pediatrics

eRA COMMONS USER NAME (credential, e.g., agency login): CRONINRM

EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
Cornell University, Ithaca, NY	B.S.	05/2001	Computer Science
Cornell University, Ithaca, NY	M. Eng.	05/2002	Computer Science
The Ohio State University, Columbus, OH	M.D.	06/2009	Medicine
Vanderbilt University, Nashville, TN		06/2013	Internal Medicine & Pediatrics Residency
Vanderbilt University, Nashville, TN	M.S.	Planned 12/2015	Biomedical Informatics

**A. Personal Statement**

The goals of this project are to promote family engagement and disease self-management with the development of an extensive knowledge base of consumer health information needs and utilize technological interventions to promote self-management and engagement across a range of chronic pediatric health conditions. I will be a co-investigator for the proposed work and I have clinical informatics and pediatrics training, as well as experience in consumer health information needs and patient engagement technologies. I am an NLM fellow of Biomedical Informatics and Clinical Instructor of Medicine and Pediatrics at Vanderbilt University School of Medicine. I am a board certified Internist and Pediatrician and care for adult and pediatric patients in both inpatient hospital and outpatient clinic settings. I have an undergraduate and master's degree in computer science and am completing an M.S. in biomedical informatics. I have experience in multiple areas of informatics including data science and analysis, risk prediction modeling and patient engagement technologies. I have also had experience in the development of mobile technologies for physician and patient engagement.

**B. Positions and Honors****Positions and Employment**

2001-2002 Teaching Assistant, Cornell University Ithaca, NY  
 2001 Head Teaching Assistant, Cornell University Ithaca, NY  
 2003-2005 Academic Associate, Weill Cornell Medical College in Qatar Doha, Qatar  
 2009-2013 Internal Medicine/Pediatrics Residency, Vanderbilt University Medical Center, Nashville, TN  
 2012-2013 Internal Medicine/Pediatrics Clinic Chief  
 2013- Clinical Instructor in Internal Medicine/Pediatrics, Vanderbilt University Medical Center, Nashville, TN  
 2013- NLM Fellow in Biomedical Informatics, Vanderbilt University Medical Center, Nashville, TN  
 2013- Hospitalist, Maury Regional Hospital System, Columbia, TN

## Other Experience and Professional Memberships

2006-	Alpha Omega Alpha
2007-2009	Landacre Honor Society
2009-	Fellow, American Academy of Pediatrics
2009-	Member, American College of Physicians
2013-	Member, American Medical Informatics Association

## Honors

2004	Best Teaching Assistant, Weill Cornell Medical College in Qatar, Doha, Qatar
2006	Excellence in Volunteer Community Service, Ohio State University, Columbus, OH
2006	Laughlin-Craig Scholarship
2006	Roessler Scholarship
2007	Ansel Scholarship
2008	Outstanding Academic Achievement Scholarship

## C. Contribution to Science

### Patient Engagement:

I have worked on patient engagement since 2013 and have begun publishing papers. My major contribution is to discovery and understanding consumer health information needs, in particular through patient portals. I have also begun worked on evaluating extensions of meeting consumer health information needs through social networking platforms and mobile technologies.

1. **Cronin RM**, Davis SE, Shenson JA, Chen Q, Rosenbloom ST, Jackson GP. Growth of Secure Messaging Through a Patient Portal as a Form of Outpatient Interaction across Clinical Specialties. *Applied Clinical Informatics*. 2015;6(2):288-304.

### Personalized Medicine:

Another area of my research in biomedical informatics is personalized medicine. I have three publications in this area focusing on phenotype/genotype discovery and risk prediction modeling. These contributions have been attempting to discover different characteristics of a patient, from genotypes, phenotypes, and clinical factors to discover personalized risk and potential personalized treatments.

1. **Cronin RM**, Field JR, Bradford Y, Shaffer CM, Carroll RJ, Mosley JD, Bastarache L, Edwards TL, Hebrbring SJ, Lin S, Hindorff LA, Crane PK, Pendergrass SA, Ritchie MD, Crawford DC, Pathak J, Bielinski SJ, Carrell DS, Crosslin DR, Ledbetter DH, Carey DJ, Tromp G, Williams MS, Larson EB, Jarvik GP, Peissig PL, Brilliant MH, McCarty CA, Chute CG, Kullo IJ, Bottinger E, Chisholm R, Smith ME, Roden DM, Denny JC. Phenome-wide association studies demonstrating pleiotropy of genetic variants within FTO with and without adjustment for body mass index. *Front Genet* 2014;5:250. doi:10.3389/fgene.2014.00250
2. Karnes JH, **Cronin RM**, Rollin J, Teumer A, Pouplard C, Shaffer CM, Blanquicett C, Bowton EA, Cowan JD, Mosley JD, Van Driest SL, Weeke PE, Wells QS, Bakchoul T, Denny JC, Greinacher A, Gruel Y, Roden DM. A genome-wide association study of heparin-induced thrombocytopenia using an electronic medical record. *Thromb Haemost*. 2014 Dec 11;113(3). [Epub ahead of print]
3. **Cronin RM**, VanHouten JP, Siew ED, Eden SK, Fihn SD, Nielson CD, Peterson JF, Baker CR, Ikizler A, Speroff T, Matheny MK, National Veterans Health Administration Inpatient Risk Stratification Models for Hospital-Acquired Acute Kidney Injury. *JAMIA*. In press.

## Collaborations:

I have collaborated in multiple areas of biomedical informatics and medicine. My major contributions are through my clinical knowledge of both internal medicine and pediatrics, as well as my knowledge as a computer scientist and data scientist. I have eight publications on the area.

1. White LJ, Cantrell SA, **Cronin R II**, Koser S, Keseg D, Sayre MR. More chest compressions and fewer shocks are given during out-of-hospital cardiac arrest resuscitation with the 2005 AHA Guidelines. *Circulation* 2007; 116: II\_433.
2. Schwaderer AL, **Cronin R**, Mahan JD, et al. Low bone density in children with hypercalciuria and/or nephrolithiasis. *Pediatr Nephrol Berl Ger* 2008;23:2209–14. doi:10.1007/s00467-008-0929-4
3. O'Leary MF, Chappell JD, Stratton CW, **Cronin RM**, Taylor MB, Tang YW. Complex Febrile Seizures Followed by Complete Recovery in an Infant with High Titer 2009 Pandemic Influenza A (H1N1) Infection. *J Clin Microbiol.* 2010 Oct;48(10):3803-5.
4. Wei WQ, **Cronin RM**, Xu H, Lasko TA, Bastarache L, Denny JC. Development and evaluation of an ensemble resource linking medications to their indications. *J Am Med Inform Assoc.* 2013 Sep-Oct;20(5):954-61. doi: 10.1136/amiajnl-2012-001431. Epub 2013 Apr 10.
5. Gobbel GT, Garvin J, Reeves R, **Cronin RM**, Heavirland J, Williams J, Weaver A, Jayaramaraja S, Giuse D, Speroff T, Brown SH, Xu H, Matheny ME. Assisted annotation of medical free text using RapTAT. *J Am Med Inform Assoc.* 2014 Jan 15. doi: 10.1136/amiajnl-2013-002255.

## Complete List of Published Work in MyBibliography:

[http://www.ncbi.nlm.nih.gov/sites/myncbi/1vSYCg\\_3gOxkX/bibliography/44362998/public/?sort=date&direction=ascending](http://www.ncbi.nlm.nih.gov/sites/myncbi/1vSYCg_3gOxkX/bibliography/44362998/public/?sort=date&direction=ascending)

## D. Research Support

### Ongoing Research Support

5 T15 LM007450-12 (Program Director: Cynthia S. Gadd, Ph.D.)  
National Library of Medicine, NIH  
“Vanderbilt Biomedical Informatics Training Program”

07/01/2007 – 06/30/2017

Under this funding, I worked on the following projects:

PI: Gretchen Purcell-Jackson, MD, PhD

- 1) Patient Portal Use Among Clinical Subspecialties
- 2) Inpatient Use of a Patient Portal
- 3) Pediatric use of a Patient Portal

Role: Research Fellow/Trainee

PI: Michael Matheny MD, MS, MPH

- 1) Development of an Automated Nephrotoxicity Pharmacosurveillance system
- 2) Development and Evaluation of a Machine Learning Assisted Annotation Tool for PTSD
- 3) ADAHF: Automated Data Acquisition for Heart Failure Performance Measures and Treatment

Role: Research Fellow/Trainee

PI: Joshua Denny, MD,MS

- 1) VESPA (Vanderbilt Electronic Systems for Pharmacogenomic Assessment)
- 2) Evaluation of Phenotyping Methods Using the Synthetic Derivative and the Statistical Browser
- 3) From GWAS to PheWAS: Scanning the EMR phenome for gene-disease associations

Role: Research Fellow Trainee

**Completed Research Support**

None