

Purvesh Khatri

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Education

- 2006 PhD Computer Science
Wayne State University, Detroit, MI
Thesis: Onto-Tools: Tools for Functional Design and Interpretation of High Throughput Gene Expression Data
- 2006 MS Computer Science
Wayne State University, Detroit, MI
Thesis: Onto-Express: Tool for Functional Profiling of Gene Expression Data
- 1998 B Eng Electronics Engineering
BVM Engineering College, Sardar Patel University, Gujarat, India

Academic Appointments

- 2014 Assistant Professor (Research) 10/1/14-9/30/18
Stanford Institute for Immunity, Transplant and Infection
Center for Biomedical Informatics Research
Department of Medicine, Stanford University
- 2013 Acting Assistant Professor 6/1/13-9/30/14
Stanford Institute for Immunity, Transplant and Infection
Center for Biomedical Informatics Research
Department of Medicine, Stanford University
- 2011 Research Associate 4/1/11-5/31/13
Divisions of Systems Medicine and Nephrology
Department of Pediatrics, Stanford University
- 2008 Postdoctoral Scholar 7/1/08-3/31/11
Center for Biomedical Informatics Research (BMIR)
Departments of Pediatrics and Medicine, Stanford University
- 2008 Part-time Faculty 1/1/08-4/30/08
Department of Computer Science, Wayne State University
- 2006 Postdoctoral Fellow 8/1/06-6/30/08
Intelligent Systems and Bioinformatics Laboratory
Department of Computer Science, Wayne State University
- 2000 Research Assistant 7/1/00-7/31/06
Intelligent Systems and Bioinformatics Laboratory
Department of Computer Science, Wayne State University

2003	Research Scientist Bioinformatics cell, Telemedicine and Advanced Technology Research Center, US Army Medical Research and Materiel Command	1/1/03-6/30/04
2002	Teaching Assistant Department of Computer Science, Wayne State University	8/1/02-12/31/02
2000	Research Assistant Center for Molecular Medicine and Genetics, Wayne State University	7/1/00-7/31/02

Awards and Honors

2016	Selected one of the science advances of 2016 by NIAID for Andres-Terre, <i>et. al.</i> Immunity 2015
2016	Teaching award-BMIR Division, Department of Medicine, Stanford University
2010	“Young Investigator Award” at American Transplant Congress 2010 for Meta-analysis of Solid Organ Transplant Data Sets Identifies Differentially Expressed microRNAs common in Heart, Kidney and Liver Allografts. (35 recipients out of more than 4,400 applicants worldwide)
2005	“Fast Breaking Paper” award in the field of Computer Science (Bioinformatics) for Khatri, <i>et. al.</i> Bioinformatics 2005 Sep;21(18):3587-95 by ISI Thomson-Scientific Essential Science Indicator. According to ISI Thomson, these papers comprise the top 1% of papers in each field and each year (http://esi-topics.com/fbp/2006/october06-SorinDraghici.html)
2004	Graduate Research Assistant Recognition Award. Department of Computer Science, Wayne State University, Detroit, MI, April 2004
2003	Graduate Research Assistant Recognition Award. Department of Computer Science, Wayne State University, Detroit, MI, April 2003
2002	Graduate Research Assistant Recognition Award. Department of Computer Science, Wayne State University, Detroit, MI, April 2002

Funding

ACTIVE

Khatri Vir Biotechnology, Inc. Strategic efforts in computational immunology using public data	6/14/2017 – 6/13/2020 PI	2.4 calendar
1U19AI109662 (Glenn) NIH Project 5: Accelerating novel countermeasures against RNA viruses through repurposing. Advancing Broad Spectrum Host Targeting Antiviral Strategies to the Clinic	4/1/2014 – 3/31/2018 Co-Investigator	2.4 calendar
U19 AI057229 (Davis) NIH Adaptive and innate immunity, memory and Repertoire in Vaccination and infection	5/1/2014 – 4/30/2019 Co-Investigator	1.2 calendar
U54I117925 (Musen) NIH Center for Expanded Data Annotation and Retrieval	9/1/2014 – 8/31/2018 Co-Investigator	1.8 calendar

Integrative Omics of Macrophage-Vascular Interaction in Pulmonary Hypertension (Rabinovitch) NIH Integrative Omics of Macrophage-Vascular Interaction in Pulmonary Hypertension	4/1/2015 – 03/31/2019 Co-Investigator	1.2 calendar
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Influenza Vaccine Prediction using GMR sensors (Utz/Wang) NIH	7/1/2016 – 06/30/2021 Co-Investigator	1.2 calendar
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Analysis of the immune state of latent Mtb infection and its progression to active diseases Gates Foundation	9/1/2016 – 08/31/2018 Co-Investigator	0.6 calendar
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Global Health-Vaccine Accelerator Program Infrastructure (Davis) Gates Foundation	10/1/2016 – 09/30/2018 Co-Investigator	1.2 calendar
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Multidimensional Analysis of Immune Status of Latent M. Tuberculosis Infection (Chien) NIH/NIAID	7/1/2016 – 06/30/2018 Co-Investigator	0.24 calendar
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PENDING

UH2AI132347 Secondary systems analysis of heterogeneous public data to identify markers of vaccine response Khatri NIH/NIAID	8/1/2017 – 07/31/2019 PI	1.2 calendar
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U01EB024464 Electrochemical RNA (E-RNA) sensors for rapid diagnosis of infection and 30-day mortality Khatri/Soh NIH/NIBIB	7/1/2017 – 06/30/2022 PI	1.8 calendar
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U01EB025141 Early rapid diagnosis of influenza infection using electro-chemical sensors Khatri/Soh NIH/NIBIB	12/1/2017 – 11/30/2021 PI	1.8 calendar
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COMPLETED

U01AI089859 Infrastructure Opportunity Fund Khatri NIH Development of HIPC data standards to support cross-center projects	1/1/2014 -6/30/2015 PI	1.2 calendar
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Proposal to enhance Cell Ontology Khatri NIAID/NIH	7/1/2015 – 6/30/2016 PI	0 calendar
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AMP RA/SLE leadership center (Utz) NIAMS/NIH	6/15/2015 – 5/31/2017 Co-Investigator	0.6 calendar
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Gates Foundation Khatri Gates Foundation Optimization and validation of a whole-blood transcriptional signature to distinguish bacterial infections from viral infections in resource-limited settings	7/1/2015 – 6/30/2017 PI	0.0 calendar
Vaccination and Infection: Indicators of immunological health and responsiveness (Davis) NIAID/NIH	7/15/2015 – 6/30/2016 Co-Investigator	0.5 calendar
Northrop Grumman Khatri Northrup Grumman	4/01/2015 – 9/29/2015 PI	0.01 calendar
Protein Methyltransferases in pancreatic cancer (Sage) Lustgarten Foundation	1/1/2015 – 12/31/2015 Co-Investigator	0.2 calendar
Prospective Validation of a Three-Gene Set for Diagnosis of Tuberculosis and Prognosis of Treatment Response (Khatri/Andrews) SPADA	1/1/2016 – 12/31/2016 PI	0% effort
Strategic effort in precision immunology – I-GPS (Altman) Pfizer	11/17/2015 – 11/16/2016 Co-Investigator	0% effort

Scientific Committee Member

- 2012 Scientific Program Committee member for the Eighth International Conference on Data Integration in the Life Sciences (DILS 2012). June 28-29, 2012. University of Maryland, College Park, MD.
- 2012 Scientific Program Committee member, AMIA Summit on Translational Bioinformatics (TBI 2012). March 18-20, 2012. San Francisco, CA.
- 2010 Chair, Special session on Machine Learning Applications in Bioinformatics and Computational Biology; Int'l Conference on Machine Learning and Applications (ICMLA) 2010. Dec 12-14, 2010. Washington, DC. (http://www.icmla-conference.org/icmla10/CFP_SpecialSession7.html)
- 2009 Technical committee member for Special session on Machine Learning Applications in Bioinformatics and Computational Biology for the International Conference on Machine Learning and Applications (ICMLA) 2009.

Reviewer

Nature Biotechnology, Science Translational Medicine, Nucleic Acids Research, Public Library of Science (PLOS) Computational Biology, Bioinformatics, BMC Bioinformatics, BMC Genomics, BMC Medical Genomics, IEEE/ACM Transactions on Computational Biology and Bioinformatics, Journal of Biomedical Informatics, EMBO Molecular Medicine, Infection, Genetics and Evolution, Computational Statistics and Data Analysis, Drug Discovery Today, BioSystems

Student Mentoring

1. Aditya Rao, Immunology, PhD, Research advisor (Jan. 2017 – pres.)

2. Lawrence Bai, Immunology, PhD, Research co-advisor (June 2017 – pres.)
3. Madeleine Scott, MSTP, Research advisor (July 2016 – pres.)
4. Kelly McGill, Immunology, PhD, Research co-advisor (with PJ Utz; Jan. 2016 – pres.)
5. Jiaying Toh, Immunology, PhD, Research co-advisor (with Olivia Martinez; Apr. 2016 – pres.)
6. Winn Haynes, Biomedical Informatics, PhD, Research co-advisor (with PJ Utz; Feb. 2014 – pres.)
7. Erika Bongen, Immunology, PhD, Research co-advisor (with PJ Utz; Mar. 2014 – pres.)
8. Marta Andres-Terre, Immunology, PhD, Research co-advisor (with Denise Monack; Dec. 2013 –pres.)
9. Tim Sweeney, Biomedical Informatics and resident (surgery), Research advisor (Aug. 2013 – Sep. 2015)
10. Matthew Daniel Li, Stanford Medical Student, 2nd year, Research advisor (July 2013 – May 2016)
11. Charles Liu, Volunteer and Stanford SIMR program, Research advisor (Jan. 2012 – Jan. 2014)
12. Andrew Liu, Stanford SIMR program, Research advisor (June 2010 – Apr. 2011)

Publications

Peer-reviewed Journal Publications (indexed in PubMed)

1. Winston A Haynes, Aurelie Tomczak, **Purvesh Khatri**. *Gene annotation bias impedes biomedical research*. Scientific Reports (under revision).
2. Tej D. Azad B*, Michele Donato*, Line Heylen, Shai S Shen-Orr, Timothy E. Sweeney, Jonathan Scott Maltzman, Maarten Naesens, **Purvesh Khatri**. *Early dysregulation of inflammatory macrophages is a robust predictor of subclinical allograft injury and graft survival across transplanted organs*. JCI Insight 2018 (in press). *Contributed equally.
3. Timothy E Sweeney[§], Tej D Azad, Michele Donato, Winston A Haynes, Thanneer M Perumal, Ricardo Henao, Jesús F Bermejo-Martin, Raquel Almansa, Eduardo Tamayo, Judith A Howrylak, Augustine Choi, Grant P Parnell, Benjamin Tang, Marshall Nichols, Christopher W Woods, Geoffrey S Ginsburg, Stephen F Kingsmore, Larsson Omberg, Lara M Mangravite, Hector R Wong, Ephraim L Tsalik, Raymond J Langley, **Purvesh Khatri**[§]. *Unsupervised analysis of transcriptomics in bacterial sepsis across multiple datasets reveals three robust clusters*. Critical Care Medicine (accepted for publication). [§]co-corresponding authors.
4. Timothy E Sweeney*, Thanneer M Perumal*, Ricardo Henao, Marshall Nichols, Judith A Howrylak, Augustine M Choi, Jesús F Bermejo-Martin, Raquel Almansa, Eduardo Tamayo, Emma E Davenport, Katie L Burnham, Charles J Hinds, Julian C Knight, Christopher W Woods, Stephen F Kingsmore, Geoffrey S Ginsburg, Hector R Wong, Grant P Parnell, Benjamin Tang, Lyle L Moldawer, Frederick E Moore, Larsson Omberg, **Purvesh Khatri**[§], Ephraim L Tsalik[§], Lara M Mangravite[§], Raymond J Langley[§]. *Mortality prediction in sepsis via gene expression analysis: a community approach*. Nature Communications 2017 (accepted for publication). *Equal contribution, [§]Joint senior authors.
5. Marvin H. Gee, Arnold Han, Shane M. Lofgren, John F. Beausang, Juan L. Mendoza, Michael E. Birnbaum, Michael T. Bethune, Suzanne Fischer, Xinbo Yang, Raquel Gomez-Eerland, David B. Bingham, Leah V. Sibener, Ricardo A. Fernandes, Andrew Velasco, David Baltimore, Ton N. Schumacher, **Purvesh Khatri**, Stephen R. Quake, Mark M. Davis, K. Christopher Garcia. *Antigen identification from orphan T cell receptors expressed on tumor-infiltrating lymphocytes*. Cell 2017 (accepted for publication).
6. Timothy E. Sweeney, Neal J. Thomas, Judie A. Howrylak, Hector R. Wong, MD, Angela J. Rogers, **Purvesh Khatri**. *Multi-cohort analysis of whole-blood gene expression data does not form a robust diagnostic for ARDS*. American Journal of Respiratory Cell and Molecular Biology 2017 (accepted for publication).

7. Steven L. Raymond, María Cecilia López Henry V. Baker, Shawn D. Larson, Philip A. Efron, Timothy E. Sweeney, **Purvesh Khatri**, Lyle L. Moldawer, James L. Wynn. *Unique transcriptomic response to sepsis is observed among patients of different age groups*. PLOS One (accepted for publication).
8. Hector R Wong, Timothy E Sweeney, Kimberly W Hart, **Purvesh Khatri**, Christopher J Lindsell. *Pediatric sepsis endotypes among adults with sepsis*. Critical Care Medicine 2017 (in press).
9. HIPC-CHI Signatures Team and HIPC-I Consortium. *Multicohort analysis reveals baseline transcriptional predictors of influenza vaccination responses*. Science Immunology **2017**, 2: eaal4656.
10. Dadi Jiang, Brandon Turner, Jie Song, Ruijiang Li, Maximilian Diehn, Quynh-Thu Le, **Purvesh Khatri**, Albert C Koong. *Comprehensive Analysis of the Unfolded Protein Response in Breast Cancer Subtypes*. JCO Precision Oncology **2017**, 1:1-9.
11. Mitchell E Garber, Alok Saldanha, Joel S Parker, Wendell D Jones, Katri Kaukinen, Kaija Laurila, Marja-Leena Lähdeaho, **Purvesh Khatri**, Chaitan Khosla, Daniel C Adelman, Markku Mäki. *A B-Cell Gene Signature Correlates with the Extent of Gluten-induced Intestinal Injury in Celiac Disease*. Cell Mol Gastroenterol Hepatol. **2017**, 4(1):1:17.
12. Timothy E Sweeney, **Purvesh Khatri**. *Generalizable biomarkers in critical care: toward precision medicine*. Crit Care Med. **2017**, 45(6):934-9.
13. Timothy E. Sweeney, James L. Wynn, María Cernada, Eva Serna, Hector R. Wong, Henry V. Baker, Máximo Vento, and **Purvesh Khatri**. *Validation of the Sepsis MetaScore for Diagnosis of Neonatal Sepsis*. J Pediatric Infect Dis Soc. **2017**, Apr 13. doi: 10.1093/jpids/pix021.
14. Timothy E. Sweeney, Neal J Thomas, Judie A Howrylak, Hector R Wong, Angela J Rogers[§], **Purvesh Khatri**[§]. *Multi-cohort analysis of whole-blood gene expression data does not form a robust diagnostic for ARDS*. Crit Care Med. **2017** (Accepted for publication) [§]co-corresponding authors.
15. William Yuan, Dadi Jiang, Dhanya K. Nambiar, Lydia P. Liew, Michael Patrick Hay, Joshua Bloomstein, Peter Lu, Brandon Turner, Quynh-The Le, Robert Tibshirani, **Purvesh Khatri**, Mark Gerard Moloney, and Albert C. Koong. *Chemical Space Mimicry for Drug Discovery*. J Chem Inf Mod. **2017**, 57(4):875-82.
16. Timothy E Sweeney, Shane Lofgren, **Purvesh Khatri**[§], Angela J Rogers[§]. *Gene Expression Analysis to Assess the Relevance of Rodent Models to Human Lung Injury*. Am J Respir Cell Mol Biol. **2017**, 57(2):184-92. [§]co-corresponding authors.
17. Timothy E Sweeney, **Purvesh Khatri**. *Septic Cardiomyopathy: Getting to the Heart of the Matter*. Crit Care Med. **2017**, 45(3):556-7.
18. Adrian Vallejo, Naiara Perurena, Elisabet Guruceaga, Pawel K Mazur, Susana Martinez-Canarias, Carolina Zanduetta, Karmele Valencia, Andrea Arricibita, Dana Gwinn, Leanne C Sayles, Chen-Hua Chuang, Laura Gumbre, Peter Bailey, David K Chang, Andrew Biankin, Mariano Ponz-Sarvisé, Jesper B Andersen, **Purvesh Khatri**, Aline Bozec, E Alejandro Sweet-Cordero, Julien Sage, Fernando Lecanda, Silve Vicent. *An integrative approach unveils FOSL1 as an oncogene vulnerability in KRAS-driven lung and pancreatic cancer*. Nature Communications. **2017**, 8:14294.
19. Timothy E Sweeney, Winston A Haynes, Francesco Vallania, John P Ioannidis, **Purvesh Khatri**. *Methods to increase reproducibility in differential gene expression via meta-analysis*. Nucleic Acids Res. **2017**, 45(1):e1.
20. Timothy E Sweeney, **Purvesh Khatri**. *Benchmarking sepsis gene expression diagnostics using public data*. Crit Care Med. **2016**, 45(1):1-10. (Accompanied by an editorial)

21. Timothy E Sweeney, **Purvesh Khatri**. *Hospital-acquired Pneumonia: A Host of Factors*. Am J Respir Crit Care Med. **2017**, 194(11):1309-11.
22. Madeleine Scott, Francesco Vallania, **Purvesh Khatri**. *Meta-analysis of continuous phenotypes identifies a gene signature that correlates with COPD disease status*. Pac Symp Biocomput **2017**, 22:266-75.
23. Winston A Haynes, Francesco Vallania, Charles Liu, Erika Bongen, Aurelie Tomczak, Marta Andres-Terrè, Shane Lofgren, Andrew Tam, Cole A Deisseroth, Matthew D Li, Timothy E Sweeney, **Purvesh Khatri**. *Empowering multi-cohort gene expression analysis to increase reproducibility*. Pac Symp Biocomput **2017**, 22:144-53.
24. Shane Lofgren, Monique Hinchcliff, Mary Carns, Tammara Wood, Kathleen Aren, Esperanza Arroyo, Peggie Cheung, Alex Kuo, Antonia Valenzuela, Anna Haemel, Paul J Wolters, Jessica Gordon, Robert Spiera, Shervin Assassi, Francesco Boin, Lorinda Chung, David Fiorentino, Paul J Utz, Michael Whitfield, **Purvesh Khatri**. *Integrated, Multi-cohort Analysis of Systemic Sclerosis Identifies Robust Transcriptional Signature of Disease Severity*. JCI Insight. **2016**, 1(21):e89073.
25. Brooke A Napier, Sky W Brubaker, Timothy E Sweeney, Patrick Monette, Gregory H Rothmeier, Nina A Gertszov, Andreas Puschnik, Jan E Carette, **Purvesh Khatri**, Denise M Monack. *Complement pathway amplifies caspase-11–dependent cell death and endotoxin-induced sepsis severity*. J Exp Med. **2016** 213(11): 2365-82.
26. Timothy E Sweeney, Hector R Wong, **Purvesh Khatri**. *Robust classification of bacterial and viral infections via integrated host gene expression diagnosis*. Sci Transl Med. **2016**, 8(346):346ra91.
27. Timothy E Sweeney, Lindsay Braviak, Cristina M Tato, **Purvesh Khatri**. *Genome-wide expression for diagnosis of pulmonary tuberculosis: a multicohort analysis*. Lancet Respir Med. **2016**, 4(3):213-24. (Accompanied by an editorial)
28. Marta Andres-Terre, Helen M McGuire, Yannick Pouliot, Erika Bongen, Timothy E Sweeney, Cristina M Tato, **Purvesh Khatri**. *Integrated, multi-cohort analysis identifies conserved transcriptional signature across multiple respiratory viruses*. Immunity. **2015**, 43:1199-211. (Accompanied by an editorial)
29. Timothy E Sweeney and **Purvesh Khatri**. *Comprehensive Validation of the FAIM3: PLAC8 Ratio in Time-matched Public Gene Expression Data*. Am J Respir Crit Care Med. **2015** 192(10):1260-61.
30. Mark Musen, Carol A Bean, Kei-Hoi Cheung, Michel Dumontier, Kim A Durante, Olivier Gevaert, Alejandra Gonzalez-Beltran, **Purvesh Khatri**, Steven H Kleinstein, Martin J O'Connor, Yannick Pouliot, Philippe Rocca-Serra, Susanna-Assunta Sansone, Jeffrey A Wisner. *The center for expanded data annotation and retrieval*. J Am Med Inform Assoc. **2015**, 22(6):1148-52.
31. Pawel K Mazur, Alexander Herner, Stephano S Mello, Matthias Wirth, Simone Hausmann, Francisco J Sánchez-Rivera, Shane M Lofgren, Timo Kuschma, Stephan A Hahn, Deepak Vangala, Marija Trajkovic-Arsic, Aayush Gupta, Irina Heid, Peter B Noël, Rickmer Braren, Mert Erkan, Jörg Kleeff, Bence Sipos, Leanne C Sayles, Mathias Heikenwalder, Elisabeth Heßmann, Volker Ellenrieder, Irene Esposito, Tyler Jacks, James E Bradner, **Purvesh Khatri**, E Alejandro Sweet-Cordero, Laura D Attardi, Roland M Schmid, Guenter Schneider, Julien Sage, Jens T Siveke. *Combined inhibition of BET family proteins and histone deacetylases as a potential epigenetics-based therapy for pancreatic ductal adenocarcinoma*. Nat Med. **2015**, 21:1163-71.
32. Timothy E. Sweeney, Aaditya Shidham, Hector R. Wong, **Purvesh Khatri**. *A Comprehensive Time-Course-Based Multi-Cohort Analysis of Sepsis and Sterile Inflammation Reveals a Robust Diagnostic Gene Set*. Sci Transl Med. **2015**, 7(287):287ra71.

33. Matthew D Li, Terry C Burns, Alexander A Morgan, **Purvesh Khatri**. *Integrated Multi-Cohort Transcriptional Meta-Analysis of Neurodegenerative Diseases*. Acta Neuropathol Commun. **2014**, 2(1):1-23.
34. Pawel K. Mazur*, Nicolas Reynoird*, **Purvesh Khatri**, Pascal W.T.C. Jansen, Alex Wilkinson, Shichong Liu, Olena Barbash, Glenn S. Van Aller, Michael Huddleston, Peter J. Tummino, Ryan G. Kruger, Benjamin Garcia, Atul J. Butte, Michiel Vermeulen, Julien Sage, and Or Gozani. *SMYD3 links methylation of MAP3K2 to Ras-driven cancer*. Nature. **2014**, 510:283-7.
35. Ron Chen*, **Purvesh Khatri***, Pawel K. Mazur, Melanie Polin, Yanyan Zheng, Dedeepya Vaka, Chuong D. Hoang, Joseph Shrager, Yue Xu, Silvestre Vicent, Atul Butte, and Alejandro Sweet-Cordero. *A meta-analysis of lung cancer gene expression identifies PTK7 as a survival gene in lung adenocarcinoma*. Cancer Res. **2014**, 74(10):2892-902. *Co-first authors.
36. Alexander A. Morgan, Matthew D Li, Achal S Achrol, **Purvesh Khatri**, and Samuel H Cheshier. *Multiplex meta-analysis of medulloblastoma expression studies with external controls*. Pac Symp Biocomput **2014**, 19:99-109.
37. Nadine S. Jahchan, Joel T. Dudley, Pawel K. Mazur, Natasha Flores, Dian Yang, Alec Palmerton, Anne-Flore Zmoos, Dedeepya Vaka, Kim Q.T. Tran, Margaret Zhou, Karolina Krasinska, Jonathan W. Riess, Joel W. Neal, **Purvesh Khatri**, Kwon S. Park, Atul J. Butte, Julien Sage. *A Drug Repositioning Approach Identifies Tricyclic Antidepressants as Inhibitors of Small Cell Lung Cancer and Other Neuroendocrine Tumors*. Cancer Discov. **2013**, 3(12):1364-77.
38. **Purvesh Khatri**, Silke Roedder, Naoyuki Kimura, Alexander A Morgan, Matthew Vitalone, Michael P Fischbein, Robert C Robbins, Atul J Butte and Minnie M Sarwal. *Gene expression meta-analysis identifies core immune response module and suggests novel therapeutics in solid organ transplant rejection*. J Exp Med. **2013**, 210:2205-21. (Identified as “moving the field towards finishing line” in the accompanying editorial.)
39. Silvestre Vicent, Leanne C. Sayles, Dedeepya Vaka, **Purvesh Khatri**, Olivier Gevaert, Ron Chen, Yanyan Zheng, Anna K. Gillespie, Nicole Clarke, Yue Xu, Joseph Shrager, Choang Hoang, Sylvia Plevritis, Atul Butte, E. Alejandro Sweet-Cordero. *Cross-species functional analysis of cancer-associated fibroblasts identifies a critical role for CLCF1 and IL6 in non-small cell lung cancer in vivo*. Cancer Res. **2012**, 72(22):5744-56.
40. Li Li*, **Purvesh Khatri***, Tara Sigdel*, Tim Tran, et al. *A Five-Gene Peripheral Blood Diagnostic Test for Acute Rejection in Renal Transplantation*. Am J Transplant. **2012**, 12(10):2710-18. (Identified as “a landmark in furthering diagnosis of acute rejection in renal transplant” in the accompanying Editorial.) *Joint first authors.
41. Tara K Sigdel, Li Li, Tim Q Tran, **Purvesh Khatri**, Maarten Naesens, Poonam Sansanwal, Hong Dai, Szu-chuan Hsieh, Minnie Sarwal. *Non-HLA Antibodies to Immunogenic Epitopes Predict the Evolution of Chronic Renal Allograft Injury*. J Am Soc Nephrol. **2012**, 23(4):750-63.
42. **Purvesh Khatri**, Marina Sirota, Atul J. Butte. *10 years of Functional Pathway Analysis: Current Approaches and Unaddressed Challenges*. PLoS Comput Biol. **2012**, 8(2):e1002375. (Most cited paper of 2012 across all PLoS journals; Faculty of 1000 “Must read” paper in [top 2%](#) of papers published in biology and medicine; viewed more than [35,000](#) times on PLoS Computational Biology web site within the first two years of publication.)
43. Tara Sigdel, Sang Woo, Hong Dai, **Purvesh Khatri**, Bryan Myers, Minnie Sarwal, Richard Lafayette. *Integrative Antibiomics Identifies Novel Autoantibody Biomarkers for IgA nephropathy*. Clin J Am Soc Nephrol. **2011**, 6(12):2775-84.
44. **Purvesh Khatri**, Minnie Sarwal, Atul Butte. *Applications of Translational Bioinformatics in Transplantation*. Clin Pharmacol Ther. **2011**, 90(2):323-7. (Cited by [6](#) articles)

45. Silke Roedder, Matthew Vitalone, **Purvesh Khatri**, Minnie M Sarwal. *Biomarkers in solid organ transplantation: establishing personalized transplantation medicine*. Genome Med. **2011**, 3:37.
46. Maarten Naesens, **Purvesh Khatri**, Li Li, Tara Sigdel, Rong Chen, Atul Butte, Oscar Silvatierra, Minnie Sarwal. *Progressive histological damage in renal allografts is associated with expression of innate and adaptive immunity genes*. Kidney Int. **2011**, 80:1364-76.
47. Alexander A. Morgan, **Purvesh Khatri**, Richard Hayden Jones, Minnie M. Sarwal, and Atul J. Butte. *Comparison of Multiplex Meta-analysis Techniques for Understanding the Acute Rejection of Solid Organ Transplants*. BMC Bioinformatics. **2010**, 11(Suppl 9):S6.
48. Larry A. Sonna, Matthew M. Kuhlmeier, **Purvesh Khatri**, Dechang Chen, and Craig M. Lilly. *A microarray analysis of the effects of moderate hypothermia and rewarming on gene expression by human hepatocytes (HepG2)*. Cell Stress Chaperones. **2010**, 15(5):687-702.
49. Kandasamy K, Mohan SS, [32 authors] **Khatri P**, [3 authors]. Leonard WJ, Pandey A. *NetPath: a public resource of curated signal transduction pathways*. Genome Biol. **2010**, 11(1):R3.
50. Shai Shen-Orr*, Robert Tibshirani*, **Purvesh Khatri**, Dale Bodian, Frank Staedtler, Nicholas M. Perry, Trevor Hastie, Lihua Ying, Minnie M. Sarwal, Mark M. Davis, Atul J. Butte. *A Method to systematically identify Cell-Type-Specific Differential Gene Expression from Complex Tissues*. Nat Methods. **2010**, 7(4):287-9.
51. **Purvesh Khatri**, Minnie Sarwal. *Using Gene Arrays in Diagnosis of Rejection*. Curr Opin Organ Transpl. **2009**, 14(1):34-9.
52. Adi Laurentiu Tarca, Sorin Draghici, **Purvesh Khatri**, Sonia S Hassan, Pooja Mittal, Jung-Sun Kim, Chong Jai Kim, Juan Pedro Kusanovic, Roberto Romero. *A Novel Signaling Pathway Impact Analysis (SPLA)*. Bioinformatics. **2009**, 25(1):75-82.
53. Bogdan Done, **Purvesh Khatri**, Arina Done, Sorin Draghici. *Predicting novel human gene ontology annotations using semantic analysis*. IEEE/ACM Trans Comput Biol Bioinform. **2008**, 7(1):91-9.
54. Sorin Draghici, **Purvesh Khatri**, Adi Laurentiu Tarca, Kashyap Amin, Arina Done, Calin Voichita, Constantin Georgescu, Roberto Romero. *A systems biology approach for pathway level analysis*. Genome Res. **2007**, 17(10):1537-45.
55. **Purvesh Khatri**, Calin Voichita, Khalid Kattan, Nadeem Ansari, Avani Khatri, Constantin Georgescu, Adi Laurentiu Tarca, Sorin Draghici. *Onto-Tools: New Additions and Improvements in 2006*. Nucleic Acids Res. **2007** Jul;35:W206-11.
56. **Purvesh Khatri**, Dechang Chen, Jaques Reifman, Larry Sonna. *Software Tool for Analysis of Variance of DNA Microarray Data*. U.S. Army Research Institute of Environmental Medicine Technical Report T03-1. Natick, MA 01760-5007.
57. Sorin Draghici, Sivakumar Sellamuthu, and **Purvesh Khatri**. *Babel's tower revisited: a universal resource for cross-referencing across annotation databases*. Bioinformatics. **2006**, 22(23):2934-9.
58. **Purvesh Khatri**, Valmik Desai, Adi L. Tarca, Sivakumar Sellamuthu, Derek E. Wildman, Roberto Romero, and Sorin Draghici. *New Onto-Tools: Promoter-Express, nsSNPCounter, and Onto-Translate*. Nucleic Acids Res. **2006** Jul;34:W626-31.
59. Sorin Draghici, **Purvesh Khatri**, Aron C. Eklund, Zoltan Szallasi. *Reliability and reproducibility issues in DNA microarray measurements*. Trends Genet. **2006**, Feb; 22(2):101-9.
60. **Purvesh Khatri**, Sorin Draghici. *Ontological analysis of gene expression data: current tools, limitations, and open problems*. Bioinformatics. **2005** Sep;21(18): 3587-95. (Received "Fast Breaking Paper" award by ISI Thompson, <http://esi-topics.com/fbp/fbp-october2006.html>).

61. **Purvesh Khatri**, Bogdan Done, Archana Rao, Arina Done, Sorin Draghici. *A semantic analysis of the annotations of the human genome*. *Bioinformatics*. **2005** Aug;21(16):3416-21.
62. **Purvesh Khatri**, Sivakumar Sellamuthu, Pooja Malhotra, Kashyap Amin, Arina Done, and Sorin Draghici. *Recent additions and improvements to the Onto-Tools*. *Nucleic Acids Res*. **2005** Jul;33:W762-5.
63. Sorin Draghici*, **Purvesh Khatri***, Yanhong Liu, Kitty J. Chase, Elizabeth A. Bode, David A. Kulesh, Leonard P. Wasieloski, David A. Norwood, Jaques Reifman. *Identification of Genomic Signatures for the Design of Assays for the Detection and Monitoring of Anthrax Threats*. *Pac Symp Biocomput*. **2005**, 248-59.
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65. Sorin Draghici, **Purvesh Khatri**, Pratik Bhavsar, Abhik Shah, Stephen A. Krawetz, Michael Tainsky. *Onto-Tools, the toolkit of the modern biologist: Onto-Express, Onto-Compare, Onto-Design and Onto-Translate*. *Nucleic Acids Res*. **2003** Jul;31(13):3775-81.
66. Sorin Draghici, **Purvesh Khatri**, Abhik Shah, Michael Tainsky. *Assessing the functional bias of commercial microarrays using the Onto-Compare database*. *Biotechniques*. **2003** Mar;Suppl:55-61.
67. Sorin Draghici, **Purvesh Khatri**, Rui P. Martins, G. Charles Ostermeier, Stephen A. Krawetz. *Global functional profiling of gene expression*. *Genomics* **2003** Feb;81(2):98-104.
68. G. Charles Ostermeier, David J. Dix, David Miller, **Purvesh Khatri**, Stephen A. Krawetz. *Spermatozoal RNA profiles of normal fertile men*. *Lancet*. **2002** Sep;360(9335):772-7.
69. **Purvesh Khatri**, Sorin Draghici, G. Charles Ostermeier, Stephen A. Krawetz. *Profiling Gene Expression Utilizing Onto-Express*. *Genomics*. **2002** Feb;79(2):266-70.

Book Chapters

1. **Purvesh Khatri**. *Knowledge Base-Driven Pathway Analysis*. In: S Aerni, M Sirota (eds.). [A Bioinformatics Guide for Molecular Biologists](#) (Chap. 10). New York, NY: Cold Spring Harbor Laboratory Press, **2014**. ISBN: 9781936113224
2. **Purvesh Khatri**, Minnie M Sarwal. *Functional Pathway Analysis for Understanding Immunologic Signature of Rejection: Current Approaches and Outstanding Challenges*. In: FM Marincola, E Wang (eds.) [Immunologic Signatures of Rejection](#) (239-56). New York, NY: Springer, **2011**. ISBN: 9781441972194
3. **Purvesh Khatri**, Sorin Draghici, Adi L. Tarca, Sonia S. Hassan, Roberto Romero. *A system biology approach for the steady-state analysis of gene signalling networks*. In: L Rueda, D Mery, J Kittler (eds.) [Progress in Pattern Recognition, Image Analysis and Applications](#) (LNCS 4756, 32-41) New York, NY: Springer, November **2007**. ISBN: 9783540767244
4. **Purvesh Khatri**, Sorin Draghici. *A comparison of existing tools for ontological analysis of gene expression data (The Gene Ontology Project)*. In: L Jorde, P Little, M Dunn, S Subramaniam (eds.) [Encyclopedia of Genetics, Genomics, Proteomics and Bioinformatics](#). Hoboken, NJ: John Wiley & Sons, Inc., October **2005**. ISBN: 9780470011539

Peer-reviewed Conference Publications

1. Calin Voichita, **Purvesh Khatri**, Sorin Draghici. *Identifying Uncertainty Regions in Support Vector Machines Using Geometric Margin and Convex Hulls*. *IEEE World Congress on Computational Intelligence, WCCI 2008*, Hong Kong, China; June 1-6, **2008**.

2. **Purvesh Khatri**, Sorin Draghici, Adi L. Tarca, Sonia S. Hassan, Roberto Romero. *A system biology approach for the steady-state analysis of gene signalling networks*. 12th Iberoamerican Congress on Pattern Recognition, CIARP 2007, Valparaiso, Chile; Nov. 13-16, **2007**.
3. Bogdan Done, **Purvesh Khatri**, Arina Done, Sorin Draghici. *Semantic analysis of genome annotations using weighting schemes*. 2007 IEEE Symposium on Computational Intelligence in Bioinformatics and Computational Biology (IEEE CIBCB 2007). Honolulu, HI; Apr. 1-5, **2007**.
4. Valmik Desai, **Purvesh Khatri**, Arina Done, Aviva Friedman, Michael Tainsky, and Sorin Draghici. *A Novel Bioinformatics Technique for Predicting Condition-Specific Transcription Factor Binding Sites*. 2006 IEEE Symposium on Computational Intelligence in Bioinformatics and Computational Biology (IEEE CIBCB 2005). San Diego, CA; Nov. 14-15, **2005**.

Conference Podium Presentations

1. Francesco Vallania, Andrew Tam, Shane Lofgren, Steven Schaffert, Erika Bongen, Michael Alonso, Mark Davis, Ed Engleman, **Purvesh Khatri**. *Leveraging heterogeneity in public data to reduce bias and increase accuracy of cell-mixture deconvolution*. ISMB July 2017, Prague.
2. Winston Haynes, Rohit Vashisht, Francesco Vallania, Greg Caskins, Charles Liu, Erika Bongen, Shane Lofgren, Paul J Utz, Timothy E Sweeney, Nigam Shah, **Purvesh Khatri**. *Understanding human disease relationships through integrated molecular and clinical analysis*. ISMB July 2017, Prague.
3. Michele Donato, Tej Deepak Azad, Line Heylen, Shai Shen-Orr, Timothy Sweeney, Maarten Naesens, **Purvesh Khatri**. *Dysregulated innate immune response is a robust marker of allograft injury and survival across all transplanted organs*. AMIA-TBI Mar 27, **2017**.
4. Shane Lofgren, Monique Hinchcliff, Mary Carns, Tammara Wood, Kathleen Aren, Esperanza Arroyo, Peggie Cheung, Alex Kuo, Antonia Valenzuela, Anna Haemel, Paul Wolters, Jessica Gordon, Robert Spiera, Shervin Assassi, Francesco Boin, Lorinda Chung, David Fiorentino, PJ Utz, Michael Whitfield, **Purvesh Khatri**. *Multi-cohort Analysis of Systemic Sclerosis Identifies Robust Transcriptional Signature of Disease Severity*. AMIA-TBI Mar 27, **2017**.
5. Erika Bongen, Francesco Vallania, PJ Utz, Timothy Sweeney, **Purvesh Khatri**. *Sex differences in immune system gene expression*. AMIA-TBI Mar 27, **2017**.
6. Winston Haynes, Rohit Vashisht, Francesco Vallania, Charles Liu, Greg Gaskin, Erika Bongen, Shane Lofgren, Timothy Sweeney, PJ Utz, Nigam Shah, **Purvesh Khatri**. *Understanding human disease relationships through integrated molecular and clinical analysis*. AMIA-TBI Mar 27, **2017**.
7. Aurelie Tomczak, Jonathan Mortensen, Rainer Winnenburg, Winston Haynes, Charles Liu, Dominique Alessi, Francesco Vallania, Shane Lofgren, Varsha Swamy, Nigam Shah, Mark Musen, **Purvesh Khatri**. *Effect of evolution of the Gene Ontology on interpretation of experiments: implications for reproducibility*. AMIA-TBI Mar 27, **2017**.
8. Francesco Vallania, Andrew Tam, Shane Lofgren, Michael Alonso, Edgar Engleman, **Purvesh Khatri**. *immunoStates: a new strategy to remove platform and disease bias in cell- mixture deconvolution*. AMIA-TBI Mar 27, **2017**.
9. Timothy E Sweeney, Aaditya Shidham, Hector R Wong, **Purvesh Khatri**. *A Comprehensive Time-Course-Based Meta-Analysis of Sepsis and Sterile Inflammation Reveals a Robust Diagnostic Gene Set*. AMIA-TBI Mar 25, **2015**.
10. Timothy E Sweeney, Aaditya Shidham, Hector R Wong, **Purvesh Khatri**. *1002: A Comprehensive Time-Course-Based Meta-Analysis of Sepsis and Sterile Inflammation Reveals a Robust Discriminatory Gene Set*. Critical Care Medicine 42 (12), A1601, **2014**.

11. Timothy E Sweeney, **Purvesh Khatri**. *Gene Expression Can Robustly Separate Infectious and Non-Infectious Inflammation*. Journal of the American College of Surgeons 219(3), S43. American College of Surgeons Clinical Congress, **2014**.
12. Michael Januszzyk, Michael Sorkin, Robert C. Rennert, Geoffrey C. Gurtner, **Purvesh Khatri**, Atul J. Butte. *Identification of Transcriptionally-Defined Cancer Subpopulations Through Integration of Public Microarray Data with Single Cell Gene Expression Profiling*. AMIA 2014 Joint Summits on Translational Science, **2014**.
13. **Purvesh Khatri**. *Novel Method for Meta-analysis of Acute Rejection across Multiple Organ Data Sets Identifies a Core Immune Response Module for Repositioning Novel Therapeutics in Transplantation*. 2012 Summit on Translational Bioinformatics (TBI). San Francisco, CA, Mar 19-23, **2012**.
14. **Purvesh Khatri**. *A common immune response module for acute rejection across multiple organs can reposition novel therapeutics for organ transplantation*. 3rd International Conference on Transplantomics and Biomarkers in Organ Transplantation. La Jolla, CA, Mar 8-10, **2012**.
15. **Purvesh Khatri**, Shai Shen-Orr, Robert Tibshirani, Atul Butte, Minnie Sarwal. *Novel Cell-type Specific Deconvolution of Whole-Blood Gene Expression Profiles in Renal Acute Rejection*. American Transplant Congress, San Diego, CA, May 1-5, **2010**.
16. **Purvesh Khatri**, Richard Hayden Jones, Atul J Butte, Minnie M Sarwal. *Meta-analysis of Solid Organ Transplant Data Sets Identifies Differentially Expressed microRNAs common in Heart, Kidney and Liver Allografts*. American Transplant Congress, San Diego, CA, May 1-5, **2010**. (Selected for “Young Investigator Award”)
17. **Purvesh Khatri**, Adi Laurentiu Tarca, Kashyap Amin, Arina Done, Calin Voichita, Constantin Georgescu, Roberto Romero, Sorin Draghici. *A systems biology approach for steady-state analysis of signaling pathways*. 16th Annual International Conference on Intelligent Systems for Molecular Biology. Toronto, Canada, July 19-23, **2008**.
18. Sorin Draghici, **Purvesh Khatri**. *A systems biology approach for pathway level analysis*. Pacific Symposium on Biocomputing (PSB 2007). Wailea, Maui, HI, Jan 3-7, **2007**.
19. Sorin Draghici, **Purvesh Khatri**, Constantin Georgescu, Adi Laurentiu Tarca. *A systems biology approach for pathway level analysis*. Pacific Symposium on Biocomputing (PSB 2007). Wailea, Maui, HI, Jan 3-7, **2007**.
20. Sorin Draghici, Kashyap Amin, Arina Done, **Purvesh Khatri**. *Beyond classical statistics - A systems biology approach for pathway level analysis*. 14th Annual International Conference on Intelligent Systems for Molecular Biology (ISMB), 2006. Fortaleza, Brazil, Aug 6-10, **2006**.
21. Sivakumar Sellamuthu, **Purvesh Khatri**, Sorin Draghici. *Onto-Translate: Resolving name space issues in the existing biological annotation databases*. 10th Annual International Conference on Research in Computational Molecular Biology (RECOMB). Venice Lido, Italy, Apr 2-5, **2006**.
22. *Recent additions and improvements to the Onto-Tools*. Gene Ontology Consortium User Meeting. University of Bergen. Bergen, Norway, Sep 14-15, **2005**.
23. *Onto-Tools, A toolset for modern biologists: Onto-Express, Onto-Compare, Onto-Design, Onto-Translate and Onto-Miner*. Great Lakes Bioinformatics, Michigan State University. East Lansing, MI, Aug 19-20, **2003**.

Invited Talks

1. Keynote, Accelerating Biology 2018: Digitizing Life, Pune, India, Jan 9-11, **2018**
2. Keynote, 11th AAIP Global Healthcare Summit. Kolkatta, India, Dec 28-31, **2017**

3. Precision Medicine in Rheumatic Diseases: Hopes & Challenges. American College of Rheumatology Annual Meeting, San Diego, CA. *"Heterogeneity" and "dirty data": blessings in disguise for precision medicine.* Nov 4, **2017**
4. Keynote, Fellowship research retreat. Division of Gastroenterology and Hepatology, Stanford University. *"Heterogeneity" and "dirty data": blessings in disguise for biomedical research.* Nov 3, **2017**
5. National Academies of Sciences, Engineering, and Medicine's symposium. International Coordination for Science Data Infrastructure. Washington, DC. *Leveraging heterogeneity in public data for accelerating translational medicine.* Nov 1, **2017**
6. Grand rounds, University of Massachusetts, Worcester, MA. *"Heterogeneity" and "dirty data": blessings in disguise for basic and translational research.* Oct 18, **2017**
7. Grand rounds, Pulmonary and Critical Care Medicine, Stanford, CA. *Integrating existing data in your translational research.* Oct 13, **2017**
8. Foundation for Innovative New Diagnostics-New Diagnostics Working Group (FIND-NDWG) Symposium at the 48th Union World Conference on Lung Health. Guadalajara, Mexico. *Diagnostic, prognostic and mechanistic signature of tuberculosis by leveraging heterogeneity in public data.* Oct 11, **2017**.
9. Grand Challenges Annual Meeting 2017. Washington, DC. *"Heterogeneity" and "dirty data": blessings in disguise for basic and translational research.* Oct 1-4, **2017**.
10. Stanford Immunology Retreat. Asilomar, CA. *"Heterogeneity" and "dirty data": blessings in disguise for basic and translational research.* Sep 15-17, **2017**.
11. 3rd international workshop on clinical tolerance, Stanford, CA. *Identification and validation of robust gene signatures for graft injury using heterogeneous public data.* Sep 8-9, **2017**.
12. NHLBI Advancing Pneumonia Research in Heart, Lung, and Blood Diseases Working group. *Leveraging heterogeneity in host response for diagnosis and therapies of infectious diseases.* August 21-22, **2017**.
13. 10th integrative biology symposium, Hanover, NH. *Adventures of a data parasite: accelerating translational medicine using public data.* May 23, **2017**
14. SystemX alliance workshop on Big Data, Diagnostic Devices and Bioelectric Interfaces in Medicine, Stanford, CA. *Leveraging heterogeneity in public data for precision medicine.* Apr 18, **2017**
15. Statistics and Genomics Seminar, University of California, Berkeley, CA. *Data Re-Use is Not Parasitism: Translational Medicine Using Public Data.* Apr 13, **2017**
16. Keynote, Grand Challenges India, New Delhi, India. *Igniting Young Minds: translational medicine using public data.* Mar 24, **2017**
17. CHI Molecular Tri-Conference, San Francisco, CA. *Accelerating diagnosis and therapy of infectious diseases using public heterogeneous data.* Feb 20-22, **2017**
18. Madagascar: a crucible for science, health and the environment. Stanford, CA. *Leveraging heterogeneity in public data for translational medicine.* Feb 8, **2017**
19. Pacific Symposium on Biocomputing, Big Island Hawaii, HI. *Adventures of a "data parasite": translational medicine using heterogeneous data.* Jan 3, **2017**
20. Collaborative Centers for Human Immunology, Bethesda, MD. *Translational medicine using heterogeneous public data.* Nov 30-Dec 2, **2016**
21. American Medical Informatics Association, Chicago, IL. *Re-use is not parasitism.* Nov 13, **2016**
22. SCOT trial meeting, American College of Rheumatology, Washington, DC. *Integrated multi-cohort analysis of SSc skin.* Nov 12, **2016**
23. Cornell University, Ithaca, NY. *Adventures of a "data parasite": accelerating translational medicine using heterogeneous data.* Nov 11, **2016**

24. Grand Challenges, London, UK. *Adventures of a “data parasite”: accelerating translational medicine using heterogeneous data.* Oct 26, **2016**
25. Cepheid, Sunnyvale, CA. *Host-response diagnostics for infectious diseases using public data.* Sep 9, **2016**
26. Grand rounds, Stanford University, Stanford, CA. *Adventures of a “data parasite”: accelerating translational medicine using heterogeneous data.* Aug 10, **2016**
27. EternaCon, Stanford University, Stanford, CA. *Robust 3-gene signature for diagnosis of tuberculosis using public data.* July 16, **2016**
28. University of Alabama, Birmingham, AL. *Integrated multi-scale analysis of public data for translational medicine.* July 14-15, **2016**
29. Yale Symposium on Influenza, Yale University, New Haven, CT. *Accelerating translational medicine using public data.* June 24, **2016**
30. Summer school for computational immunology, Yale University, New Haven, CT. *Multi-cohort analysis of gene expression data.* June 22, **2016**
31. Summer school for computational immunology, Yale University, New Haven, CT. *Pathway analysis: current approaches and limitations.* June 21, **2016**
32. Grand rounds, University of Texas, Houston, TX. *Accelerating translational medicine using public data.* June 16-17, **2016**
33. 17th Annual UC System-wide Bioengineering Symposium at University of California, San Francisco, CA. *Translational medicine using publicly available heterogeneous data.* June 14, **2016**
34. Big data bioinformatics, GLCbio, Boston, MA. *Accelerating biomarker discovery using public data.* May 25-27, **2016**
35. MedImmune, Mountain View, CA. *Leveraging heterogeneity in public data for translational medicine.* May 23, **2016**
36. One Health Symposium, Stanford, CA. *Accelerating translational medicine using heterogeneous public data.* Apr 30, **2016**
37. Grand rounds, Division of Infectious Diseases, Stanford University, Stanford, CA. *Adventures of a “data parasite”: novel diagnostics and therapies using public data.* Mar 31, **2016**
38. Biomarkers in infectious diseases, GLCbio, San Diego, CA. *Accelerating biomarker discovery using public data.* Mar 21-23, **2016**
39. Scleroderma Research Foundation, San Francisco, CA. *Integrated multi-cohort analysis of systemic sclerosis.* Mar **2016**
40. CHI Molecular Tri-Conference (session chair and talk for infectious diseases diagnosis), San Francisco, CA. *Novel diagnostic approaches in infectious diseases.* Mar 7-9, **2016**
41. Arthritis Foundation, Atlanta, GA. *Systems approach for computational immunology.* Feb 23-24, **2016**
42. Grand rounds, Northwestern University, Chicago, IL. *Accelerating translational medicine using heterogeneous public data.* Feb 10-12, **2016**
43. Grand rounds, Pulmonary and Critical Care Medicine, Stanford, CA. *Translational medicine using public data.* Sep 18, **2015**
44. Big Data in Biomedicine, Stanford, CA. *Understanding immunology using public data.* May 20-22, **2015**
45. Arthritis Foundation, Atlanta, GA. *Framework for integrated multi-cohort analysis of molecular data.* May 13-14, **2015**
46. NIH Perinatology Research Branch, Detroit, MI. *Onto-Tools: toolkit for higher level analysis of gene expression data.* May **2013**

47. Keynote, Childhood Leukemia International Consortium, University of California, Berkeley, CA. *Translational medicine using multi-scale analysis of public data: studies in cancer and drug repositioning*. Oct 3, **2012**
48. Functional Genomics Data Society (FGED), Cambridge, MA. *Meta-analysis of public domain data sets for translational medicine*. Jan 25-26, **2012**
49. Institute for Digital Biology, Mississippi State University, Starkville, MS. *Onto-Tools: a toolkit for modern biologists*. May 20-22, **2008**
50. US Army Medical Research and Materiel Command, Fort Detrick, MD. *Onto-Expression: tool for identifying significant processes in high throughput gene expression data*. July 18, **2003**
51. The Frederick Forum on Bioinformatics and Chemoinformatics, National Cancer Institute and US Army Medical Research and Materiel Command, Fort Detrick, MD. *Data analysis for microarrays*. June 24-25, **2003**

Patent Applications and Disclosures

1. Biomarkers for use in prognosis of mortality in critically ill patients. US provisional application no. 62/354,789 (Licensed to Inflammatrix, Inc.)
2. Methods for diagnosis of bacterial and viral infections. US provisional application no. 62/346,962 (Licensed to Inflammatrix, Inc.)
3. Methods for diagnosis of tuberculosis. US provisional application no. 62/241,506. (Licensed to Cepheid and Fasttrack Diagnostics)
4. Methods for diagnosis of sepsis. WO2016/145426A1 (Licensed to ChromaCode, Inc. and Inflammatrix, Inc.)
5. Biomarkers of ovarian cancer. US provisional patent application no. 14/914, 245. (Licensed to mProbe, Inc.)
6. Identification of new therapeutic uses for known therapeutic agents US provisional patent no. 14/361,668
7. Protein and Gene Biomarkers for Rejection of Organ Transplants. US provisional patent no. 9,535,075. WO/2011/119980. (Licensed to Organ-i)
8. Onto-Express: A Tool for Functional Profiling of Bioinformatics Data. January 2, 2002. US Patent Application No. 60/347,383.