

Curriculum Vitae
Bruce X. Ling, Ph.D.

PI, Translational Medicine Program
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Mail code: 5208
Stanford, CA 94305

Education

1990 B.S., Biochemistry, Fudan University, China
1994 M.A., Molecular and Developmental Biology, UCLA, US
1996 Ph.D., Biological Chemistry, UCLA, US

Post-Doctoral Training

1996-1998 Postdoctoral training, medicine/oncology/Computer science, Stanford University, US
2000-2001 Business administration, Leavey School of Business, Santa Clara University, US

Academic Appointments

2016 - Assistant Professor of Surgery, Stanford University
2011 - PI, Translational Medicine Program, Dept. of Surgery, School of Medicine, Stanford University
2007-2010 Senior Scientist, Translational Medicine Program, Dept. of Pediatrics, School of Medicine, Stanford University
2006 Consultant, Biotechnology Core, Lucile Packard Children's Hospital, Stanford University

Industry Appointments

2004 - 2005 Director, Research & Development Informatics, Amgen San Francisco.
2002 - 2004 Research Director, Tularik Inc.
2001 - 2002 Director, R&D informatics, Tularik Inc.
2000 - 2001 Associate Director, Research & Development, DoubleTwist, Inc.
1999 - 2000 Project manager, Research, Pangea System, Inc.
1998 - 1999 Computation/Bioinformatics Scientist, Incyte Pharmaceuticals, Inc.

Society Membership

Investigator, March of the Dime Prematurity Research Center, Stanford University

National Symposia / Courses as Faculty

NA

Service

2005 - Member, Journal Editorial Board, Cancer Informatics

1997 Member, Medical Advisor Board, National Kidney Foundation of Northern California

Honors and Awards

2014-2016 American Heart Association Award

2014 Stanford Spark Innovation Program Scholar

2013 First place in clinical research, Stanford University Cardiovascular Institute 2013 research retreat (shared with Dr. Andrew Shin in CVICU)

2013 Stanford Spark Innovation Program Scholar

2012 Stanford Spark Innovation Program Scholar

2011 Stanford Spark Innovation Program Scholar

1997 – 1998 Walter Berry Medical Research Award

1997 National Kidney Foundation Research Award

1996 Dean's Fellowship, Stanford University

1992 -1993 University Fellowship, UCLA, CA

1991 - 1992 University Fellowship, University of Iowa, IA

1990 - 1991 University Fellowship, Fudan University, China

1990 Summa cum laude, Fudan University, China

1986 – 1990 University Fellowship, Fudan University, China

Research Interests

Translational Research

– Hypothesis driven, Big data Empowered, Translational discovery

<http://translationalmedicine.stanford.edu>

- The implementation and use of “big data” based medicine and data analysis in complex health care settings for improved cost and care effectiveness
- Multit-omics (genomics and proteomics focused) analyses of gene/protein biomarkers for the diagnosis and prognosis of the inflammatory entity of Necrotizing Enterocolitis (NEC), sepsis in premature infants, Kawasaki disease, CNS cancer metastasis, and women pregnancy preterm diseases.
- Precision medicine – development of novel computational analysis for NGS analysis and NGS based disease diagnostics integrating vast amount of public domain NGS genomic resources
- Clinical sensor – development of novel chemical based sensor technologies to allow urine based diagnostics

Editorial Review

Ad hoc reviewer for: *BMC medicine*, *PLOS ONE*, *PLOS Medicine*, *Molecular Cellular Proteomics*, *Bioinformatics*, *BMC bioinformatics*, and *EMBO medicine*. *JMIR mHealth* and *uHealth*

Clinical Research

2012-2014: Co-PI for the LPCH CVICU clinical dashboard and predictive analytics analysis and implementation.

2016 Co-PI, big data analytics, LPCH Heart Center and Johnson Center

Patents/Copyright Held

US Patent/Copyright Pending or Issued:

1. US61/783,450: Provisional application, S12-310 (STAN-983PRV): Methods of Predicting Preeclampsia (serum peptide markers).
2. US61/731,640: Provisional application, S11-499 (STAN-939PRV2): Methods of Predicting Preeclampsia (serum protein markers).
3. US2013/0052665A1: Methods for diagnosis of systemic juvenile idiopathic arthritis (Plasma protein markers).
4. US61/59,3791 S07-246PRV: Methods for diagnosis of systemic juvenile idiopathic arthritis (Urine peptide markers).
5. US2011/0224101A1: Tumor associated proteome and peptidome analysis for multiclass cancer discrimination.
6. US61/496,684: Provisional application, S10-302 (STAN-788PRV): Biomarkers for Necrotizing Enterocolitis and Sepsis.
7. PCT/US12/23739 S09-260: Methods for diagnosis of Kawasaki disease.
8. S13-088 STAN-1924PRV: Levels of RAD54L protein in the blood identify subtypes of high grade serous ovarian cancer.
9. US provisional application S13-331 (STAN-1062PRV) 61/919,459: Parallel Analysis of Serum EpiCAM and MMP7 Can Discriminate Sepsis, Necrotizing Enterocolitis and Normal Control Patients
10. Stanford OTL Docket # S12-344: Novel diagnostic algorithm for acute kidney injury in hospitalized children.
11. Stanford OTL Docket # S13-229: SNP for predicting effectiveness of preterm birth diagnostic test.
12. Stanford OTL Docket #S13-171: A mutli-gene assay to predict brain metastasis from any primary tumors.
13. US Copyright © 2007 Bruce Ling, S07-242: “MASS-Conductor” - High throughput proteomic biomarker discovery platform.
14. US Copyright © 2011 Bruce Ling: Stanford “FDR server” statistical applications.
15. US Copyright © 2012 Bruce Ling, S13-204: A novel severity index for the congenital heart disease.
16. US Copyright © 2013 Bruce Ling, S13-094: Clinical dashboard systems with novel predictive and exploratory analytics for quality and cost improvements for inpatient care

Trainees

Trainee’s Name/Degree

Current Status and Address

Past trainee

Dan Li, Ph.D. (postdoc in Tularik 2002-2003)	Associate professor, Mount Sinai School of Medicine
Peifang Xiao, M.D. (visiting scholar 2011)	Pediatrician, Suzhou University
Sihua Peng, Ph.D. (visiting faculty 2011-2012)	Associate professor, Shanghai Ocean University
Gongxing Chen (visiting scholar 2011-2012)	Associate professor, Hangzhou

Jun Zhao (visiting scholar 2010-2011)	Normal University
Shuaibin Wu (postdoc 2011)	Professor, Ningxia University
	Investigator, Zhengzhou Tobacco
	Research Institute, China
	Analyst, Trading company
Qiaojun Wen (exchange Ph.D. student 2012-2013)	
Jun Ji (exchange Ph.D. student 2011-2013)	Assistant Professor, Qingdao University
Changlin Fu (exchange M.S. Student 2012-2013)	CEO, start up in Shanghai
Linhua Jiang, Ph.D. (visiting faculty 2012-2013)	Associate professor, East China Normal University
Xiaolin Zheng, Ph.D. (visiting scholar 2012-2013)	Associate professor, Zhejiang University
Jing Dong, M.D. (visiting scholar, 2013)	Assistant professor, China Medical University
Yingzhen Zhao, Ph.D. (visiting scholar, 2013-2014)	professor, Hangzhou Normal University
Shenghui Shi, Ph.D. (visiting scholar 2013-2014)	Associate professor, Beijing Chemical Engineering University
Ting Yang, Ph.D. (postdoc 2011-2012)	Associate professor, Jilin University
Zhongkai Hu (exchange Ph.D. student, 2013-2014)	Postdoc fellow, Stanford University
Feng Tian (exchange Ph.D. student, 2013)	Ph.D. 2014, Tsinghua University
Yanpeng Hao, Ph.D. (visiting scholar, 2014-2015)	Associate professor, South China University of Technology
Zhou Tan, Ph.D. (postdoc, 2014-2015)	Associate professor, Hangzhou Normal University
Le Zheng (exchange Ph.D. student, 2015)	Ph.D. 2016, Tsinghua University
Shiyang Hao, Ph.D. (postdoc, 2014-2015)	Instructor, Stanford University
Rui Liu, Ph.D. (postdoc, 2014-2015)	Associate professor, South China University of Technology
Guang Hu, Ph.D. (visiting scholar, 2015-2016)	Professor, Beijing University
Yue Wang, (exchange Ph.D. student, 2014-2015)	Director, Nanshan Robotics Inc. (China)
Irene Deng, Ph.D. (postdoc, 2015-2016)	Associate Professor,
Jianjian Lu, Ph.D. (postdoc, 2015-2016)	Surgeon, Beijing Union Medical College

Current trainee

Zhongkai Hu, Ph.D. (postdoc)
Yunliang Chen, Ph.D. (visiting scholar)
Fang Cao, Ph.D. (visiting scholar)
Dongyan Zhang, Ph.D. (visiting scholar)

Ongoing Research Support

Endowment support

Donation supporting pediatrics research 2015

Donation supporting postdoctoral fellows 2015

American Heart Association (PI Cohen/Ling, Co-I UCSD Burns) 2013-2015

Validation of vasculitis biomarkers to diagnose Kawasaki disease

Completed Research Support

Corporate research project (PI: Ling) 1/00-1/01

DoubleTwist, Inc.

Develop high throughput novel algorithms for high throughput genome ontological classification

Corporate research project (PI: Ling) 1/01-1/04

Tularik Inc.

Develop high throughput computation platform (the Discovery® Platform) to enable globally integrated high throughput small molecule screening in either cell based or biochemical assays.

Corporate research project (PI: Ling) 1/01-1/03

Tularik Inc.

Developed informatics platform for array CGH to screen for genetic lesions in cancer to discover novel cancer targets

Corporate research project (PI: Ling) 1/04-1/05

Amgen San Francisco

Develop compound property based CSAR/QSAR models to address compound PGP (P-glycoprotein, Efflux pump) liability in compound brain permeability for CNS programs

Corporate research project (PI: Ling) 1/04-1/05

Amgen San Francisco

Discover cancer targets through the large-scale tumor tissue sequencing and SNP analysis of somatic mutations in the potential targets of the interest and to explore their implications in cancer

Children's health initiative (CHI)

Lucille Packard Foundation (PI: Krensky; CoI: Ling 100%) 1/06 – 9/09

Develop proteomic (2D gel DIGE and LCMS) platforms to discover diagnostic and prognostic biomarkers for in urine, plasma and tissue.

Develop high throughput computational platform for feature detection and discovery of discriminative features in LCMS based biomarker discovery

Lucile Park Foundation (Supervisor: Cohen, Co-I: Ling, 100%) 10/10 – 2/11

Children's health initiative (CHI) transition fund.
Pediatric disease biomarker discovery and translational analytic support.

ACE pilot grant (PI: Mellins, Co-I: Ling) 04/09 – 03/11
Prognostic proteomic markers in systemic juvenile idiopathic arthritis & adult onset Stills' disease.

Stanford pediatric research fund (co-PIs: Cohen, Wang, Ling 5%) 1/1/11 – 1/1/12
Development of an ultra-sensitive nano biosensor test for impending SJIA flare to translate our recent findings of a SJIA flare plasma protein signature

Spark/Spectrum Innovation Award (co-PIs: Sylvester, Ling) 3/2011 – 3/2012
Biosensors and biomarkers to manage NEC and Sepsis

Stanford Bio-X Interdisciplinary Initiatives Program – Round 5 (co-PIs: Sylvester, Wang, Ling) 11/10 – 11/12
Biosensors and biomarkers for neonatal disease

Spark/Spectrum Innovation Award (co-PIs: Butte, Ling) 3/12 – 3/13
Preeclampsia biomarker discovery and validation

FDA 1UO1FD004194-01 (PI: Sylvester, Co-I)
Qualifying Studies of Biomarkers for Neonatal Disease 2011-2013

SPECTRUM / SPARK Program (PI Sylvester, Co-I: Ling)
Urinary Biosensors for Personalized Neonatal Care 2011-2013

SPECTRUM / SPARK Program (co-PIs: Ling/Cohen)
Identification of vasculitis biomarkers to diagnose Kawasaki disease 2014.1-12

Macklin Foundation funded project (Co-PIs: Burns/Cohen/Ling)
Planning grant for Kawasaki disease diagnostic test 2013.8-2-2014.3

Stanford University CVICU funded project (Co-PIs: Ling/Shin)
CVICU KPI analysis 2012.10-2014.10

PEER-REVIEWED PUBLICATIONS (1-58)

1. Thompson JS, Ling X, Grunstein M. Histone H3 amino terminus is required for telomeric and silent mating locus repression in yeast. *Nature*. 1994;369(6477):245-7. Epub 1994/05/19. doi: 10.1038/369245a0. PubMed PMID: 8183346.
2. Lenfant F, Mann RK, Thomsen B, Ling X, Grunstein M. All four core histone N-termini contain sequences required for the repression of basal transcription in yeast. *EMBO J*. 1996;15(15):3974-85. Epub 1996/08/01. PubMed PMID: 8670902; PMCID: 452117.
3. Ling X, Harkness TA, Schultz MC, Fisher-Adams G, Grunstein M. Yeast histone H3 and H4 amino termini are important for nucleosome assembly in vivo and in vitro: redundant and position-independent functions in assembly but not in gene regulation. *Genes Dev*. 1996;10(6):686-99. Epub 1996/03/15. PubMed PMID: 8598296.

4. Ling X, Kamangar S, Boytim ML, Kelman Z, Huie P, Lyu SC, Sibley RK, Hurwitz J, Clayberger C, Krensky AM. Proliferating cell nuclear antigen as the cell cycle sensor for an HLA-derived peptide blocking T cell proliferation. *J Immunol.* 2000;164(12):6188-92. Epub 2000/06/08. PubMed PMID: 10843669.
5. Ling X, Tamaki T, Xiao Y, Kamangar S, Clayberger C, Lewis DB, Krensky AM. An immunosuppressive and anti-inflammatory HLA class I-derived peptide binds vascular cell adhesion molecule-1. *Transplantation.* 2000;70(4):662-7. Epub 2000/09/06. PubMed PMID: 10972226.
6. Pouliot Y, Gao J, Su QJ, Liu GG, Ling XB. DIAN: a novel algorithm for genome ontological classification. *Genome Res.* 2001;11(10):1766-79. Epub 2001/10/10. doi: 10.1101/gr.183301. PubMed PMID: 11591654; PMCID: 311153.
7. Jiang Y, Chen D, Lyu SC, Ling X, Krensky AM, Clayberger C. DQ 65-79, a peptide derived from HLA class II, induces I kappa B expression. *J Immunol.* 2002;168(7):3323-8. PubMed PMID: 11907089.
8. Li S, Liao J, Cutler G, Hoey T, Hogenesch JB, Cooke MP, Schultz PG, Ling XB. Comparative analysis of human genome assemblies reveals genome-level differences. *Genomics.* 2002;80(2):138-9. Epub 2002/08/06. PubMed PMID: 12160725.
9. Pei L, Peng Y, Yang Y, Ling XB, Van Eyndhoven WG, Nguyen KC, Rubin M, Hoey T, Powers S, Li J. PRC17, a novel oncogene encoding a Rab GTPase-activating protein, is amplified in prostate cancer. *Cancer Res.* 2002;62(19):5420-4. PubMed PMID: 12359748.
10. Li S, Cutler G, Liu JJ, Hoey T, Chen L, Schultz PG, Liao J, Ling XB. A comparative analysis of HGSC and Celera human genome assemblies and gene sets. *Bioinformatics.* 2003;19(13):1597-605. Epub 2003/09/12. PubMed PMID: 12967954.
11. Ling XB, Cutler G, Hoey T. Genomic resources for cancer biology researchers. . In: LaRoche B, editor. *Oncogenomics Handbook* Humana Press. ; 2004.
12. Ling XB. A machine to make a future - Biotech chronicles. . *J Clin Invest.* 2005(115):2303-4. ; PMCID: PMC1193899.
13. Liu JJ, Cutler G, Li W, Pan Z, Peng S, Hoey T, Chen L, Ling XB. Multiclass cancer classification and biomarker discovery using GA-based algorithms. *Bioinformatics.* 2005;21(11):2691-7. Epub 2005/04/09. doi: bti419 [pii] 10.1093/bioinformatics/bti419. PubMed PMID: 15814557.
14. Chen Z, Wang W, Ling XB, Liu JJ, Chen L. GO-Diff: mining functional differentiation between EST-based transcriptomes. *BMC Bioinformatics.* 2006;7:72. Epub 2006/02/17. doi: 10.1186/1471-2105-7-72. PubMed PMID: 16480524; PMCID: 1388240.
15. Li WX, Li L, Eksterowicz J, Ling XB, Cardozo M. Significance analysis and multiple pharmacophore models for differentiating P-glycoprotein substrates. *J Chem Inf Model.* 2007;47(6):2429-38. Epub 2007/10/25. doi: 10.1021/ci700284p. PubMed PMID: 17956085.
16. Ling XB. High throughput screening informatics. *Comb Chem High Throughput Screen.* 2008;11(3):249-57. Epub 2008/03/14. PubMed PMID: 18336217.
17. Sigdel TK, Lau K, Schilling J, Sarwal M. Optimizing protein recovery for urinary proteomics, a tool to monitor renal transplantation. *Clin Transplant.* 2008;22(5):617-23. PubMed PMID: 18459997.
18. Allibhai T, DiGeronimo R, Whitin J, Salazar J, Yu TT, Ling XB, Cohen H, Dixon P, Madan A. Effects of moderate versus deep hypothermic circulatory arrest and selective cerebral perfusion on cerebrospinal fluid proteomic profiles in a piglet model of

- cardiopulmonary bypass. *J Thorac Cardiovasc Surg.* 2009;138(6):1290-6. Epub 2009/08/08. doi: 10.1016/j.jtcvs.2009.06.001. PubMed PMID: 19660276.
19. Ling XB, Cohen H, Jin J, Lau I, Schilling J. FDR made easy in differential feature discovery and correlation analyses. *Bioinformatics.* 2009;25(11):1461-2. Epub 2009/04/21. doi: btp176 [pii]
10.1093/bioinformatics/btp176. PubMed PMID: 19376824.
20. Sigdel TK, Ling XB, Lau K, Li L, Schilling J, Sarwal MM. Urinary peptidomic analysis identifies potential biomarkers for acute rejection of renal transplantation. *Clinical Proteomics.* 2009(5):103-13. .
21. Yang Q, Whitin JC, Ling XB, Nayak NR, Cohen HJ, Jin J, Schilling J, Yu TT, Madan A. Plasma biomarkers in a mouse model of preterm labor. *Pediatr Res.* 2009;66(1):11-6. Epub 2009/03/17. doi: 10.1203/PDR.0b013e3181a207e3. PubMed PMID: 19287348.
22. Zhou L, Cai M, Ling XB, Wang Q, Lau K, Zhao J, Schilling J, Chen L. Cancer Biomarker Discovery via Targeted Profiling of Multiclass Tumor Tissue-Derived Proteomes. . *Clinical Proteomics.* 2009;5(3-4):163-9.
23. Ling XB, Lau K, Deshpande C, Park JL, Milojevic D, Macaubas C, Xiao C, Lopez-Avila V, Kanegaye J, Burns JC, Cohen H, Schilling J, Mellins ED. Urine Peptidomic and Targeted Plasma Protein Analyses in the Diagnosis and Monitoring of Systemic Juvenile Idiopathic Arthritis. *Clin Proteomics.* 2010;6(4):175-93. Epub 2010/12/03. doi: 10.1007/s12014-010-9058-8. PubMed PMID: 21124648; PMCID: 2970804.
24. Ling XB, Mellins ED, Sylvester KG, Cohen HJ. Urine peptidomics for clinical biomarker discovery. *Advances in clinical chemistry.* 2010;51:181-213.
25. Ling XB, Park JL, Carroll T, Nguyen KD, Lau K, Macaubas C, Chen E, Lee T, Sandborg C, Milojevic D, Kanegaye JT, Gao S, Burns J, Schilling J, Mellins ED. Plasma profiles in active systemic juvenile idiopathic arthritis: Biomarkers and biological implications. *Proteomics.* 2010;10(24):4415-30. Epub 2010/12/08. doi: 10.1002/pmic.201000298. PubMed PMID: 21136595; PMCID: 3517169.
26. Ling XB, Sigdel TK, Lau K, Ying L, Lau I, Schilling J, Sarwal MM. Integrative urinary peptidomics in renal transplantation identifies biomarkers for acute rejection. *J Am Soc Nephrol.* 2010;21(4):646-53. Epub 2010/02/13. doi: 10.1681/ASN.2009080876. PubMed PMID: 20150539; PMCID: 2844301.
27. Ling XB, Lau K, Kanegaye JT, Pan Z, Peng S, Ji J, Liu G, Sato Y, Yu TT, Whitin JC, Schilling J, Burns JC, Cohen HJ. A diagnostic algorithm combining clinical and molecular data distinguishes Kawasaki disease from other febrile illnesses. *BMC Med.* 2011;9:130. doi: 10.1186/1741-7015-9-130. PubMed PMID: 22145762; PMCID: 3251532.
28. Ling XB, Sylvester KG. Proteomics and Biomarkers in Neonatology. *NeoReviews.* 2011(12):585-91.
29. Ling XB, Macaubas C, Alexander HC, Wen Q, Chen E, Peng S, Sun Y, Deshpande C, Pan KH, Lin R, Lih CJ, Chang SY, Lee T, Sandborg C, Begovich AB, Cohen SN, Mellins ED. Correlation analyses of clinical and molecular findings identify candidate biological pathways in systemic juvenile idiopathic arthritis. *BMC Med.* 2012;10:125. Epub 2012/10/25. doi: 10.1186/1741-7015-10-125. PubMed PMID: 23092393; PMCID: 3523070.

30. Qin XJ, Ling BX. Proteomic studies in breast cancer (Review). *Oncol Lett.* 2012;3(4):735-43. Epub 2012/06/29. doi: 10.3892/ol.2012.573. PubMed PMID: 22740985; PMCID: 3362396.
31. Ji J, Ling J, Jiang H, Wen Q, Whitin JC, Tian L, Cohen HJ, Ling XB. Cloud-based solution to identify statistically significant MS peaks differentiating sample categories. *BMC Res Notes.* 2013;6:109. Epub 2013/03/26. doi: 10.1186/1756-0500-6-109. PubMed PMID: 23522030; PMCID: 3621609.
32. Ling XB, Kanegaye JT, Ji J, Peng S, Sato Y, Tremoulet A, Burns JC, Cohen HJ. Point-of-care differentiation of Kawasaki disease from other febrile illnesses. *J Pediatr.* 2013;162(1):183-8 e3. Epub 2012/07/24. doi: 10.1016/j.jpeds.2012.06.012. PubMed PMID: 22819274.
33. Liu LY, Yang T, Ji J, Wen Q, Morgan AA, Jin B, Chen G, Lyell DJ, Stevenson DK, Ling XB, Butte AJ. Integrating multiple 'omics' analyses identifies serological protein biomarkers for preeclampsia. *BMC Med.* 2013;11(1):236. Epub 2013/11/08. doi: 10.1186/1741-7015-11-236. PubMed PMID: 24195779.
34. Sutherland SM, Ji J, Sheikhi FH, Widen E, Tian L, Alexander SR, Ling XB. AKI in hospitalized children: epidemiology and clinical associations in a national cohort. *Clin J Am Soc Nephrol.* 2013;8(10):1661-9. Epub 2013/07/09. doi: 10.2215/CJN.00270113. PubMed PMID: 23833312; PMCID: 3789331.
35. Wen Q, Liu LY, Yang T, Alev C, Wu S, Stevenson DK, Sheng G, Butte AJ, Ling XB. Peptidomic Identification of Serum Peptides Diagnosing Preeclampsia. *PLoS One.* 2013;8(6):e65571. Epub 2013/07/11. doi: 10.1371/journal.pone.0065571. PubMed PMID: 23840341; PMCID: 3686758.
36. Hao S, Jin B, Shin AY, Zhao Y, Zhu C, Li Z, Hu Z, Fu C, Ji J, Wang Y, Zhao Y, Dai D, Culver DS, Alfreds ST, Rogow T, Stearns F, Sylvester KG, Widen E, Ling XB. Risk prediction of emergency department revisit 30 days post discharge: a prospective study. *PLoS One.* 2014;9(11):e112944. doi: 10.1371/journal.pone.0112944. PubMed PMID: 25393305; PMCID: 4231082.
37. Ji J, Ling XB, Zhao Y, Hu Z, Zheng X, Xu Z, Wen Q, Kastenberg ZJ, Li P, Abdullah F, Brandt ML, Ehrenkranz RA, Harris MC, Lee TC, Simpson BJ, Bowers C, Moss RL, Sylvester KG. A data-driven algorithm integrating clinical and laboratory features for the diagnosis and prognosis of necrotizing enterocolitis. *PLoS One.* 2014;9(2):e89860. Epub 2014/03/04. doi: 10.1371/journal.pone.0089860. PubMed PMID: 24587080; PMCID: 3938509.
38. Patel CJ, Yang T, Hu Z, Wen Q, Sung J, El-Sayed YY, Cohen H, Gould J, Stevenson DK, Shaw GM, Ling XB, Butte AJ, March of Dimes Prematurity Research Center at Stanford University School of M. Investigation of maternal environmental exposures in association with self-reported preterm birth. *Reprod Toxicol.* 2014;45:1-7. Epub 2014/01/01. doi: 10.1016/j.reprotox.2013.12.005. PubMed PMID: 24373932; PMCID: 4316205.
39. Sylvester KG, Ling XB, Liu GY, Kastenberg ZJ, Ji J, Hu Z, Peng S, Lau K, Abdullah F, Brandt ML, Ehrenkranz RA, Harris MC, Lee TC, Simpson J, Bowers C, Moss RL. A novel urine peptide biomarker-based algorithm for the prognosis of necrotising enterocolitis in human infants. *Gut.* 2014;63(8):1284-92. Epub 2013/09/21. doi: 10.1136/gutjnl-2013-305130. PubMed PMID: 24048736; PMCID: 4161026.
40. Sylvester KG, Ling XB, Liu GY, Kastenberg ZJ, Ji J, Hu Z, Wu S, Peng S, Abdullah F, Brandt ML, Ehrenkranz RA, Harris MC, Lee TC, Simpson BJ, Bowers C, Moss RL. Urine protein biomarkers for the diagnosis and prognosis of necrotizing

- enterocolitis in infants. *J Pediatr*. 2014;164(3):607-12 e1-7. Epub 2014/01/18. doi: 10.1016/j.jpeds.2013.10.091. PubMed PMID: 24433829; PMCID: 4161235.
41. Cheng R, Leung RK, Chen Y, Pan Y, Tong Y, Li Z, Ning L, Ling XB, He J. Virtual Pharmacist: A Platform for Pharmacogenomics. *PLoS One*. 2015;10(10):e0141105. doi: 10.1371/journal.pone.0141105. PubMed PMID: 26496198; PMCID: PMC4619711.
42. Hao S, Wang Y, Jin B, Shin AY, Zhu C, Huang M, Zheng L, Luo J, Hu Z, Fu C, Dai D, Wang Y, Culver DS, Alfreds ST, Rogow T, Stearns F, Sylvester KG, Widen E, Ling XB. Development, Validation and Deployment of a Real Time 30 Day Hospital Readmission Risk Assessment Tool in the Maine Healthcare Information Exchange. *PLoS One*. 2015;10(10):e0140271. doi: 10.1371/journal.pone.0140271. PubMed PMID: 26448562; PMCID: PMC4598005.
43. Hu Z, Hao S, Jin B, Shin AY, Zhu C, Huang M, Wang Y, Zheng L, Dai D, Culver DS, Alfreds ST, Rogow T, Stearns F, Sylvester KG, Widen E, Ling X. Online Prediction of Health Care Utilization in the Next Six Months Based on Electronic Health Record Information: A Cohort and Validation Study. *J Med Internet Res*. 2015;17(9):e219. doi: 10.2196/jmir.4976. PubMed PMID: 26395541.
44. Hu Z, Jin B, Shin AY, Zhu C, Zhao Y, Hao S, Zheng L, Fu C, Wen Q, Ji J, Li Z, Wang Y, Zheng X, Dai D, Culver DS, Alfreds ST, Rogow T, Stearns F, Sylvester KG, Widen E, Ling XB. Real-time web-based assessment of total population risk of future emergency department utilization: statewide prospective active case finding study. *Interact J Med Res*. 2015;4(1):e2. doi: 10.2196/ijmr.4022. PubMed PMID: 25586600; PMCID: 4319080.
45. Kim D, Fu C, Ling XB, Hu Z, Tao G, Zhao Y, Kastenber ZJ, Sylvester KG, Wang SX. Pilot Application of Magnetic Nanoparticle-Based Biosensor for Necrotizing Enterocolitis. *J Proteomics Bioinform*. 2015;Suppl 5. doi: 10.4172/jpb.S5-002. PubMed PMID: 26798207; PMCID: PMC4718576.
46. Shin AY, Hu Z, Jin B, Lal S, Rosenthal DN, Efron B, Sharek PJ, Sutherland SM, Cohen HJ, McElhinney DB, Roth SJ, Ling XB. Exploring Value in Congenital Heart Disease: An Evaluation of Inpatient Admissions. *Congenit Heart Dis*. 2015;10(6):E278-87. doi: 10.1111/chd.12290. PubMed PMID: 26219731.
47. Shin AY, Jin B, Hao S, Hu Z, Sutherland S, McCammond A, Axelrod D, Sharek P, Roth SJ, Ling XB. Utility of clinical biomarkers to predict central line-associated bloodstream infections after congenital heart surgery. *Pediatr Infect Dis J*. 2015;34(3):251-4. doi: 10.1097/INF.0000000000000553. PubMed PMID: 25232780.
48. Tan Z, Hu Z, Cai EY, Alev C, Yang T, Li Z, Sung J, El-Sayed YY, Shaw GM, Stevenson DK, Butte AJ, Sheng G, Sylvester KG, Cohen HJ, Ling XB. Serological targeted analysis of an ITIH4 peptide isoform: a preterm birth biomarker and its associated SNP implications. *J Genet Genomics*. 2015;42(9):507-10. doi: 10.1016/j.jgg.2015.06.001. PubMed PMID: 26408095.
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54. Lei Q, Zhou X, Zhou YH, Mai CY, Hou MM, Lv LJ, Duan DM, Wen JY, Lin XH, Wang PP, Ling XB, Li YM, Niu JM. Prehypertension During Normotensive Pregnancy and Postpartum Clustering of Cardiometabolic Risk Factors: A Prospective Cohort Study. *Hypertension.* 2016;68(2):455-63. doi: 10.1161/HYPERTENSIONAHA.116.07261. PubMed PMID: 27354425.
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INVITED SEMINARS

1. 1994 West Coast Chromatin and Chromosomes Conference, Pacific Grove, CA
2. 2000 National High Technology Exchange Conference, Shenzhen, China
3. 2000 Genome Research Center, Yang Ming Medical University, Taiwan

4. 2000 Genome Conference, National Chiao Tung University, Taiwan
5. 2002 TAC-CCL&STC-2002, Santa Clara, CA
6. 2001 The Santa Clara Valley Chapter of the IEEE Computer Society, Stanford, CA
7. 2002 Tularik Inc. Research Retreat, Pacific Grove, CA
8. 2002 Executive IT Life Science Forum, New York, NY
9. 2003 BIO-IT World, Boston, MA
10. 2003 CHI's Molecular Medicine Tri-Conference, Santa Clara, CA
11. 2003 Keystone Symposia (Functional Genomics), Santa Fe, NM
12. 2003 The Drug Discovery & Development Information Integration Congress, Miami Beach, FL
13. 2004 AccelrysWorld 2004. San Diego, CA
14. 2005 Internal and external knowledge sharing for pharma industry, London, UK
15. 2005 Pharmaceutical Technology Congress, Loews Philadelphia, PA
16. 2006 Genentech, South San Francisco, CA
17. 2009 Genentech, South San Francisco, CA
18. 2009 SRI, Menlo Park, CA
19. 2011 Zhejiang University, Hangzhou, China
20. 2012 Kawasaki disease annual international conference, Kyoto, Japan
21. 2013 Big data 2013 summit, Beijing, China
22. 2013 Beijing University, Zhejiang University, Tsinghua University, Chinese academy of Sciences, China
23. 2014 Zhejiang University, Hangzhou, China
24. 2014 Tsinghua University, Hangzhou, China
25. 2015 Tsinghua University, Hangzhou, China

26. 2015 IKDS, Hawaii, USA
27. 2015 IEEE, Philadelphia, USA
28. 2015 The 3rd Oriental Pediatrics Conference, Shanghai, China
29. 2016 LPCH, Stanford, USA
30. 2016 Xi'an Jiaotong University, Xi'an, China
31. 2016 Zhejiang University, Hangzhou, China
32. 2016 Shanghai Jiaotong University, Shanghai, China
33. 2016 Tianjin Cancer Hospital, Tianjin, China
34. 2016 Diagnostics and Genetics Testing Forum, Shanghai, China
35. 2016 The 1st International Pediatrics Precision Medicine Forum, Shanghai, China