Natalia Khuri, PhD

Curriculum Vitae

Contact

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Current Position

Educational Program Director
UCSF-Stanford Center of Excellence in Regulatory Sciences and Innovation
Stanford University

Adjunct Assistant Professor
Department of Bioengineering and Therapeutic Sciences
UC San Francisco

Education

2010–2014	*Ph.D. in Biophysics* University of California San Francisco
2005–2007	*M.S., Computer Science* San Jose State University
1995–1998	*MBA* San Francisco State University
1988–1993	*M. S., Economics*, summa cum laude Lomonosov Moscow State University Moscow, Russia

Honors and Awards

2013–2015	Achievement Rewards for College Scientists (ARCS) Scholarship
2014-2015	UCSF Discovery Fellowship
November 2014	Supercomputing 2014 Conference Broader Engagement Program Participation Award
2013	First Place Award of Excellence for oral presentation in Chemistry and Biochemistry, 94th AAAS Pacific Division conference
2013	AAAS Pacific Division Laurence M. Klauber Award of Excellence
2004–2005	NSF Research Opportunity Award
1991–1992	German Academic Exchange Service (DAAD) Scholarship

Professional Positions

01/2015–current	Educational Program Director Center of Excellence in Regulatory Sciences and Innovation (CERSI), Department of Bioengineering, Stanford University

	Adjunct Assistant Professor Department of Bioengineering and Therapeutic Sciences, UC San Francisco
08/2010–12/2014	Graduate Student Researcher Integrative Program in Quantitative Biology, UC San Francisco
05/1999–06/2010	Lecturer Department of Computer Science, San Jose State University
05/2004–08/2007	Visiting Faculty Department of Plant Biology, Carnegie Institution for Science

Publications

N. Khuri, A. Zur, M.B. Wittwer, L. Lin, S. W. Yee, K. M. Giacomini, A. Sali. *Discovery of Inhibitors of Human OATP2B1 Transporter by Virtual Screening Against Multiple Comparative Models and Machine Learning.* in review.

E. C. Chen, **N. Khuri**, X. Liang, A. Stecula, Y. Huang, A. Sali, K. M. Giacomini. Discovery of orthosteric and allosteric ligands of the Organic Cation Transporter, OCT1. in review.

D. Schneidman-Duhovny, **N. Khuri**, G.Q. Dong, M. Winter, E. Shifrut, N. Friedman, C. Craik, P. Paz, F. Aswad, A. Sali. *Predicting T-cell epitopes by integrated modeling of APC processing, MHCII presentation, and TCR recognition.* submitted.

S. Khuri, M. Van Hoven, **N. Khuri**. *Increasing The Capacity Of STEM Workforce: Minor in Bioinformatics* Proceedings of SIGCSE, Seattle, March 8–11, 2017.

R. Altman, S. Prabhu, A. Sidow, J. Zook, R. Goldfeder, D. Litwack, E. Ashley, G. Asimenos, C. Bustamante, K. Donigan, K. Giacomini, E. Johansen, **N. Khuri**, E. Lee, X. Liang, M. Salit, O. Serang, Z. Tezak, D. Wall, E. Mansfield, T. Kass-Hout. *A research roadmap for next-generation sequencing informatics*. Science Translational Medicine volume 8 (335), pp. 335ps10, 2016.

L. Wu, T-S. Moh, **N. Khuri**. *Twitter Opinion Mining for Adverse Drug Reactions.* IEEE BigData 2015, Santa Clara, Oct. 29 – Nov 1, 2015.

R. B. Altman, **N. Khuri**, M. Salit, K.M. Giacomini. *Unmet needs: Research helps regulators do their jobs.* Science Translational Medicine volume 7, Issue 315, pp. 315ps22, 2015.

B. Webb, N. Eswar, H. Fan, **N. Khuri**, U. Pieper, G. Q. Dong, and A. Sali. *Comparative Modeling of Drug Target Proteins.* Chemistry, Molecular Sciences and Chemical Engineering. Ed: J. Reedijk, Elsevier, Waltham, MA, 2014.

Wittwer M.B.*, Zur A.A.*, **Khuri N.***, Kido Y., Kosaka A., Zhang X., Morrissey K.M., Sali A., Huang Y., Giacomini K.M. *Discovery of potent, selective multidrug and toxin extrusion transporter 1 (MATE1, SLC47A1) inhibitors through prescription drug profiling and computational modeling.* J Med Chem. 2013 Feb 14;56(3):781-95. * **equal first author contribution**

Schlessinger A., **Khuri N.**, Giacomini K.M., Sali A. *Molecular modeling and ligand docking for Solute Carrier (SLC) transporters.* Curr Top Med Chem. 2013 Apr 11.

Pieper U., Webb B.M., Dong G.Q., Schneidman-Duhovny D., Fan H., Kim S.J., **Khuri N.**, Spill Y., Weinkam P., Hammel M., Tainer J.A., Nilges M. and Sali A. *ModBase, a database of annotated comparative protein structure models, and associated resources.* Nucleic Acids Research, 2013 Nov 23.

Schlessinger A., Wittwer M.B., Dahlin A., **Khuri N.**, Bonomi M., Fan H., Giacomini K.M., Sali A. *High selectivity of the γ-aminobutyric acid transporter 2 (GAT-2, SLC6A13) revealed by structure-based approach.* J Biol Chem. 2012 Nov 2;287(45):37745-56.

Bhaya, D., Grossman, A.R., A.S. Steunou, A.-S., **Khuri N.**, Cohan, F.N., Hamamura, N., Melendrez, M.C., Bateson, M.M., Ward D.M. and Heidelberg, J.F. *Population level functional diversity in a microbial community revealed by comparative genomic and metagenomic analyses*, Nature ISME, 2007(1), 703-717.

Contributions to books and research articles

Steunou A.-S., Bateson M.M., Cohan F.M., Grossman A.R., **Khuri N.**, Ward D.M., Kuhl M., Heidelberg J., Bhaya B. *Thermophilic, mat-dwelling cyanobacterial strains and control of metabolism.* PHYCOLOGIA, 44 (4), p. 40, 2005.

Steunou A.-S., Bhaya D., Bateson M.M., Melendrez M.C., Ward D.M., Brecht E., Peters J.W., Kühl M., Grossman A.R. *In situ analysis of nitrogen fixation and metabolic switching in unicellular thermophilic cyanobacteria inhabiting hot spring microbial mats.* PNAS, vol. 103, no. 7, pp. 2398-2403, 2006.

M. Stamp and R.M. Low, Chapter in *Applied Cryptanalysis*, John Wiley and Sons, Inc, 2007.

Ward D.M., Cohan F.M., Bhaya D., Heidelberg J.F., Kuhl M., Grossman A.R. *Genomics, environmental genomics and the issue of microbial species.* Heredity (Edinb). 2008 Feb;100(2):207-19.

Tarhda, Z., Semlali,O., Kettani, A., Moussa, A., Abumrad, N.A., Ibrahimi A. *Three Dimensional Structure Prediction of Fatty Acid Binding Site on Human Transmembrane Receptor CD36.* Bioinform Biol Insights. 2013; 7: 369373.

Science Education Publications

Khuri S., **Khuri N.**, Picker A., Budd A., Chabanis-Davidson S., Willingale-Theune J. *Discovering Bioinformatics: a protein in the World Wide Web.* On-line Teacher Training (ELLS) TeachingBASE, EMBL.

Curriculum and Instructional Design and Development

academic courses

2016	BIOS244: Computational Methods in Pharmaceutical Research and Development, Stanford University BIOE249: Medical Device Regulation, UCSF
2015	BIOMEDIN 224: Principles of Pharmacogenomics, Stanford University PSPG245B: Systems Pharmacology, UC San Francisco

graduate and postgraduate professional courses

2017	Regulatory Considerations for Postmarketing of Drugs Adding Value to Drug Development Biomarkers, Precision Medicine, and CDx Development Programs
2016	Therapeutic Target Validation and Large Molecule Discovery Early Drug Development and Clinical Pharmacology Scientific and Regulatory Issues in Phases 2 and 3 Drug Development The Role of Regulatory Affairs Professionals on Drug Development Teams
2015	Introduction to FDA Drug Regulation Regulatory Framework for Mobile Health

online courses

2017	Regulatory Science for Next-Generation Sequencing Diagnostics Mobile Health: Industry Overview and the Evolving Regulatory Framework
2016	Introduction to Pharmacogenomics

Invited Presentations

March 25, 2017	*Towards Personalized Prescriptions*, 2017 Silicon Valley WiE Conference.
January 14, 2015	*Structural bioinformatics*, Genentech Inc.
January 28, 2015	*Network bioinformatics*, Genentech Inc.
January 7, 2013	*Structural bioinformatics and drug discovery*, 3^{rd} Workshop on Bioinformatics and Medical Information, Rabat, Morocco

Professional Service

2017–	Reviewer, 2017 BIOSTEC Conference
2016–	Reviewer, ACM SIGCSE Conference
2016	Local organizer, Biology and Mathematics in the Bay Area Conference (BaMBA), San Jose, California, USA
2015–	Reviewer, PLOS Computational Biology Journal
2015-	Reviewer, Molecular Pharmaceutics Journal
2015–	Member, American Society for Clinical Pharmacology and Therapeutics (ASCPT)
2013–	Member, American Association for the Advancement of Science (AAAS)
2013–	Member, Association of Computing Machinery (ACM)
2010	Member of the organizing committee Computational Systems Bioinformatics Conference (CSB 2010) Stanford, California, USA
2007	Local organizer Biology and Mathematics in the Bay Area Conference (BaMBA) San Jose, California, USA

Students Supervised or Mentored

1. Ishil Ozgener, Summer internship supervisor, Department of Plant Biology, Carnegie Institution for Science, 2004. Project: *Dynamic Web Content Management System for the Annotation of Microbial Genomes.* Current: Researcher at the Programming Principles and Tools group at Microsoft Research, Cambridge, UK.

2. Tom Dillig, Summer internship supervisor, Department of Plant Biology, Carnegie Institution for Science, 2004. Project: *Dynamic Web Content Management System for the Annotation of Microbial Genomes.* Current: Senior lecturer at University College London, UK.

3. Priya Mathew, MS Thesis committee member, Department of Software Engineering, San Jose State University, 2005. Project: *Web-based Genomics Analysis Pipeline for Microbial Genomes.* Current: IMPAC Medical Systems, Inc., Sunnyvale, California.

4. Nikhila Rao, MS Thesis committee member, Department of Software Engineering, San Jose State University, 2005. Project: *Cyanobacterial Operon Prediction Pipeline Using Comparative Genomics.* Current: Senior Software Engineer at FireEye, Inc.

5. Renee Halbrook, Undergraduate internship supervisor, Department of Plant Biology, Carnegie Institution for Science, 2005-2006. Project: *Web-based Management System for Metagenomics Analysis.*

6. Khoi Ho. Undergraduate research project mentor, 2005. Project: *Clustering Bacterial Genomes Using Comparative Sequence Analysis.*

7. Ching Chia Li, MS Thesis committee member, Department of Computer Science, San Jose State University, 2008. Project: *DNA Fragment Assembly Algorithms: Towards a Solution for Long Repeats.*

8. Yulia Newton, Undergraduate research project mentor, Department of Computer Science, SJSU, 2011. Project: *Building Drug-Target Interaction Networks.* Current: PhD student at the University of California Santa Cruz.

9. Claudia Tishler, High school student, San Jose Harker School, 2011. Project: *Homology Modeling of Human Transporter Proteins Involved in Autism.* Current: Undergraduate student at the University of California, Berkeley.

10. Miaoer (Miao) Yu, MS Thesis committee member, Department of Computer Science, San Jose State University, 2012. *Computational Modeling of Protein Dynamics with Gromacs and Java.* Current: Software engineer at IBM.

11. Hardik Shah. MS Thesis committee member, Department of Computer Science, San Jose State University, 2012. *Algorithms for Predicting Secondary Structures of Human Viruses.*

12. Anthony Bortolazzo, Undergraduate research project mentor, Department of Biological Sciences, San Jose State University, 2013. Project: *Computational Modeling of Cryptic Splicing in Disease.* Current: PhD student at the University of Wisconsin-Maddison.

13. Dhivya Srinivasan, Graduate research project mentor, Department of Computer Science, San Jose State University, 2013. Project: *Higher Order PWM for Modeling Transcription Factor Binding Sites.*

14. Zineb Tarhda, Graduate research project mentor, Medical Biotechnology and Pharmacology and Toxicology Lab, Faculty of Medicine and Pharmacy, University Mohammed V Souissi, Rabat, Morocco, 2013. Project: *Three Dimensional Structure Prediction of Fatty Acid Binding Site on Human Transmembrane Receptor CD36.* doi: 10.4137/BBI.S12276.

15. Santrupti Nerli, Graduate research project mentor, Department of Computer Science, San Jose State University, 2013. Project: *Maximal Dependence Decomposition Algorithm for Identification of Conserved Motifs.* Current: PhD candidate in Computer Science, UC Santa Cruz.

16. Xiaohan Li, Graduate research project mentor, Department of Computer Science, San Jose State University, 2013-3104. Project: *Attribute Selection Methods in Rough Set Theory.* Current: Software Engineer at Cisco.

17. Melissa Lemke, Amgen undergraduate research mentor, University of California San Francisco, 2014. Project: *Structure-based approach to ligad discovery for the human organic cation transporter 1 (OCT1).* Current: Undergraduate student at the University of Michigan.

18. Jennifer Wu, Graduate research project mentor, Department of Computer Science, San Jose State University, 2014. Project: *Using Probabilistic Graphic Models to Solve NP-Complete Puzzle Problems.*

19. Priya Jayachandran, PharmD research project mentor, School of Pharmacy, UC San Francisco, 2015. Project: *Regulatory Science Applications for Transporter Mediated Drug-Drug Interactions.*

20. Pratikshya Mishra, Graduate research project mentor, Department of Computer Science, San Jose State University, 2017. Project: *Rough-set feature selection with evolutionary algorithms*.

Stanford, February 15, 2017