CURRICULUM VITAE

Name: Vincent J. VanBuren, Ph.D.

Citizenship: USA

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Field of Specialization: Computational Systems Biology and Bioinformatics

Education:

1994	Cedar Crest College, Allentown, PA	B.S.	Biology
2002	Lehigh University, Bethlehem, PA	Ph.D.	Molecular Biology

Dissertation: Computational Modeling of Microtubule Structure and Assembly
Advisor: Lynne Cassimeris, Ph.D., Associate Professor of Molecular Biology, Department of Biological Sciences, Lehigh University
Co-Advisor: David J. Odde Ph.D., Associate Professor of Chemical Engineering, Department of Biomedical Engineering, University of Minnesota

Positions:

Assistant Professor
Department Head: Harris Granger, Ph.D., 254-742-7039

2006-present **Assistant Professor**, Department of Systems Biology and Translational Medicine, College of Medicine, Texas A&M Health Sciences Center, Temple, TX.

Postdoctoral Fellow
Supervisor: Minoru S.H. Ko, MD, Ph.D., 410-558-8359

2002-2006 **IRTA Postdoctoral Fellow**, Laboratory of Genetics, National Institute on Aging, National Institutes of Health, Baltimore, MD

Graduate School (1995-2002)
Advisor: Lynne Cassimeris, Ph.D., 610-758-6275

2001-2002 **Research Assistant**, Department of Biological Sciences, Lehigh University, Bethlehem, PA

2000-2001 **Aventis Fellow** (one of two awarded by Aventis Pharmaceuticals, Inc.), Department of Biological Sciences, Lehigh University, Bethlehem, PA

Positions (continued):

1999-2000	**Research Assistant**, Department of Biological Sciences, Lehigh University, Bethlehem, PA
1998-1999	**Dean's Fellow** (one of two awarded by the College of Arts and Sciences, Lehigh University), Department of Biological Sciences, Lehigh University, Bethlehem, PA
1995-1998	**Teaching Assistant** [**Genetics Laboratory** (3 semesters), **Histology Laboratory** (2 semesters), **Advanced Cell Biology Laboratory** (1 semester)], Department of Biological Sciences, Lehigh University, Bethlehem, PA

Other Professional Experience**:**

1998	**Lecturer** (faculty assignment), Human Genetics and Reproduction, Biological Sciences Department, Lehigh University
1998	**Computer Consultant and Technician**, Biological Sciences Department, Lehigh University

Research Interests:

- Novel data mining and analysis of DNA microarray experiments.
- Prediction of absolute transcript abundance from DNA microarray measured intensities.
- Probe design for high-throughput *in situ* hybridization and DNA microarrays.
- Computational analysis and modeling of gene regulatory and biochemical networks.
- Computational analysis and modeling of microtubule structure and assembly.

Honors:

Research Grants:

Extramural

2006-2010	National Scientist Development Grant [$260,000; including salary support], Project: *Reconstructing Biological Networks: Pathways Associated with Heart Development,* American Heart Association.
2000	Travel Award, American Society of Cell Biology annual meeting.

Intramural

2002-2006	Intramural Research Training Award, Postdoctoral Fellowship, NIA/NIH.
2003	Fellows Award for Research Excellence (FARE 2003), NIA/NIH.

Scholarships:

Extramural

2000-2001	Predoctoral Fellowship, Aventis Pharmaceuticals, Inc., Lehigh University.

Intramural

1998-1999	Dean's Predoctoral Fellowship, Lehigh University College of Arts and Sciences.

Society Memberships:

American Association for the Advancement of Science (AAAS)

Invited Talks:

February 2007 *Simulation of Microtubule Self-Assembly Kinetics and Structure*. Department of Biomedical Engineering, Texas A&M University, College Station, TX..

March 2006 *Computational modeling of microtubule structure and self-assembly kinetics.* Department of Applied Sciences, College of William and Mary, Williamsburg, VA.

January 2006 *Preliminary studies in systems biology: reconstructing biological networks and building the Complementome.* (Temple) *Computational modeling of microtubule structure and self-assembly kinetics.* (College Station) Department of Systems Biology and Translational Medicine, College of Medicine, Texas A&M University Health Sciences Center, Temple, TX, and College Station, TX (2 talks).

December 2005 *Computational modeling of microtubule structure and self-assembly kinetics.* Department of Basic Medical Sciences, College of Osteopathic Medicine of the Pacific, Western University of Health Sciences, Pomona, CA.

June 2004 *Systems modeling and reconstruction of biological networks.* H. Lee Moffitt Cancer Research Center, University of Southern Florida, Tampa, FL.

May 2004 *Systems modeling: informatics infrastructure for basic research in regenerative medicine, and novel biological networks.* Department of Internal Medicine, University of Michigan, Ann Arbor, MI.

December 2003 *The fruits of computational biology: analysis, tools, models, and hypotheses.* Department of Biochemistry, Robert Wood Johnson Medical School, Piscataway, NJ.

August 2001 *Pseudomechanical simulation of microtubules and preliminary description of a full 3-D mechanical model of microtubule assembly.* Laboratory of Genetics, National Institute on Aging, NIH, Baltimore, MD.

October 2000 *A pseudomechanical model of microtubule dynamic instability.* Department of Biomedical Engineering, University of Minnesota, Minneapolis, MN.

Professional Activities:

September 2006-Present

Director, SBTM Microarray Laboratory, Department of Systems Biology and Translational Medicine, Texas A&M HSC, Temple, TX.

August 2006-Present

Seminar Coordinator, Department of Systems Biology and Translational Medicine, Texas A&M HSC, Temple, TX.

February 2007-Present

Member, Pre- and Post-doctoral Training Program Assessment and Revision Committee, Department of Systems Biology and Translational Medicine, Texas A&M HSC, Temple, TX.

February 2007-Present

Chair, Faculty Oversight Committee for the Departmental Microarray Laboratory, Department of Systems Biology and Translational Medicine, Texas A&M HSC, Temple, TX.

October 2006

NSF Review Panelist, Arlington, VA.

August 2006-February 2007

Member, Faculty Oversight Committee for the departmental Microarray Core Facility, Department of Systems Biology and Translational Medicine, Texas A&M HSC, Temple, TX.

August 2006-present

Member, Faculty Committee for Biocomputing, Department of Systems Biology and Translational Medicine, Texas A&M HSC, Temple, TX.

Professional Activities (continued):

2001	**Ex Officio Committee Member**, Search Committee for a new faculty appointment in Molecular Modeling, Department of Biological Sciences, Lehigh University
1997-2001	**Graduate Student Representative** at departmental faculty meetings, Department of Biological Sciences, Lehigh University
1996-1997	**Graduate Student Representative** at Graduate Student Council Meetings

Mentoring:

Postdoctoral Fellows:

August 2006 - present. Daniel C. Jupiter, PhD in Mathematics.

January 2007 - present. Hung-Chung (Joe) Huang, PhD in Computational Biochemistry.

Teaching:

Spring 2007: Directed Study for James Littlejohn, MD/PhD student, Texas A&M HSC College of Medicine: *A Systems Biology Database for Mouse Heart Development*

Fall 2006: MPHY 601: Methods in Cell Physiology, Texas A&M HSC College of Medicine Microarray Lectures

BIBLIOGRAPHY

1. **VanBuren, V.**, Odde, D.J., Cassimeris, L. (1999) Modeling Tube Tops: A Model for Tubulin-Tubulin Interactions in Microtubule Statics and Dynamics (abstract). ***Mol Biol Cell*** 10(S): 376a.

2. **VanBuren, V.**, Cassimeris, L., Odde, D.J. (2000) Static Modeling of Microtubular Structures (abstract). ***Mol Biol Cell*** 11(S): 357a.

3. **VanBuren, V.**, Odde, D.J., Cassimeris, L. (2002) Estimates of Lateral and Longitudinal Bond Energies within the Microtubule Lattice. ***Proc Natl Acad Sci USA***, 99(9): 6035-40.

4. **VanBuren, V.**, Piao, Y., Dudekula, D.B., Qian, Y., Carter, M.G., Martin, P.R., Stagg, C.A., Bassey, U.C., Aiba, K., Hamatani, T., Kargul, G.J., Luo, A.G., Kelso, J., Hide, W., Ko, M.S.H. (2002) Assembly, Verification, and Initial Annotation of the NIA Mouse 7.4K cDNA Clone Set. ***Genome Research***, 12:1999-2003.

5. **VanBuren, V.**, Yoshikawa, T., Hamatani, T., Ko, M.S.H. (2003) Probe Design for Large-Scale Molecular Biology Applications. ***IEEE CSB Proceedings (CSB2003)***. 502-503.

6. Sharov, A.A., Piao, Y., Matoba, R., Dudekula, D.B., Qian, Y., **VanBuren, V.**, Falco, G., Martin, P.R., Stagg, C.A., Bassey, U.C., Wang, Y., Carter, M.G., Hamatani, T., Aiba, K., Akutsu, H., Sharova, L., Tanaka. T.S., Kimber, W.L., Yoshikawa, T., Jaradat, S.A., Pantano, S., Nagaraja, R., Boheler, K.R., Taub, D., Longo, D.L., Schlessinger, D., Keller, J., Klotz, E., Kelsoe, G., Umezawa, A., Vescovi, A.L., Rossant, J., Kunath, T., Hogan, B.L.M., Curci, A., D'Urso, M., Kelso, J., Hide, W., and Ko, M.S.H. (2003) Transcriptome analyses yield gene sets correlated with developmental potential in mouse stem cells and early embryos. ***PLoS Biology***, 1(3): 410-419.

7. Carter, M.G., Piao, Y., Dudekula, D.B., Qian, Y., **VanBuren, V.**, Sharov, A.A., Tanaka, T.S., Martin, P.R., Bassey, U.C., Stagg, C.A., Aiba, K., Hamatani, T., Ko, M.S.H. (2003) The NIA Mouse cDNA Project: Building a Gene Catalog of Mouse Stem Cells and Early Embryos. ***CR Biologies***, 326 (10-11): 931-940.

8. Hamatani T, Falco G, Carter MG, Akutsu H, Stagg CA, Sharov AA, Dudekula DB, **VanBuren V**, Ko MS. (2004) Age-associated alteration of gene expression patterns in mouse oocytes. ***Hum Mol Genet***. 13 (19): 2263-2278. [Aug 18 Epub ahead of print].

9. **VanBuren, V.** and Ko, M.S.H. (2005) Regulation of genome activity and genetic networks in mammals (invited book chapter). ***Mammalian Genomics***. CAB International Publishing, Cambridge, Massachusetts. 201-220.

10. **VanBuren, V.** and Ko, M.S.H. (2005) Principles and applications of embryogenomics (invited encyclopedia section). ***Encyclopedia of Molecular Cell Biology and Molecular Medicine.*** Wiley-VCH, Berlin. 529-556.

11. **VanBuren, V.**, Cassimeris, L., Odde, D.J. (2005) A mechanochemical model for microtubule structure and self-assembly kinetics. ***Biophysical Journal*** 89:2911-2926. [June 10 Epub ahead of print]
New and Notable commentary: Schek, H.T. III, and Hunt A.J. (2005) Microtubules: Mechanical meets chemical. ***Biophysical Journal*** 89:2909-2910.

12. Carter, M.G., Sharov, A.A., **VanBuren, V.**, Dudekula, D.B., Carmack, C.E., and Ko, M.S.H. (2005) A mouse whole-genome oligonucleotide microarray platform for transcript copy number estimation. ***Genome Biology*** 6:R61.