James J. Vincent, Ph.D.
Curriculum Vitae

PERSONAL

Current Position

Director, Bioinformatics Core
Vermont Genetics Network
University of Vermont
Burlington, Vermont 05405

Office Address

120A Marsh Life Science Building
109 Carrigan Drive
University of Vermont
Burlington, Vermont 05405
802-656-9798 James.Vincent@uvm.edu

EDUCATION

Postdoctoral Fellow, 1999-2001
Cancer Research Training Award
The National Cancer Institute

Ph.D., Physical Chemistry, 1999
Application of Parallel Algorithms to Computational Chemistry
National Science Foundation Traineeship in High Performance Computing
The Pennsylvania State University

B.S., Computer Science, 1992
The University of Vermont

B.S., Chemistry, 1991
The University of Vermont

RESEARCH

University of Vermont 2007-present
Director, Bioinformatics Core, Vermont Genetics Network

Collaborate with a wide variety of researchers in life sciences on projects ranging from serum proteome analysis to de novo genome assembly.

The National Cancer Institute 1999-2007
Gene Discovery Group, Laboratory of Molecular Biology

Developed techniques and tools for gene tissue expression analysis leading to discovery of several new genes.

Immunotoxin Group, Laboratory of Molecular Biology

Engineered immunotoxins to reduce non-specific toxicity by shaping the electrostatic field of the Fv and lowering the isoelectric point.

The Pennsylvania State University 1992-1998

Developed massively parallel molecular and quantum mechanical chemistry codes for large-scale simulation studies of the effects of water on protein structure and charge distribution.

PEER REVIEWD PUBLICATIONS	
	Goswami T, Li X, Smith AM, Luderowski EM, Vincent JJ, Rush J, Ballif BA. Comparative phosphoproteomic analysis of neonatal and adult murine brain. Proteomics 2012, Jul;12(13):2185-9.
	Wang Q, Arighi CN, King BL, Polson SW, Vincent J, Chen C, et al. Community annotation and bioinformatics workforce development in concert--little skate genome annotation workshops and jamborees. Database (Oxford) 2012;2012:bar064.
	Tai CH, Vincent JJ, Kim C, Lee B. SE: An algorithm for deriving sequence alignment from a pair of superimposed structures. BMC Bioinformatics 2009;10 Suppl 1:S4.
	Levitin F, Weiss M, Hahn Y, Stern O, Papke RL, Matusik R, et al. PATE gene clusters code for multiple, secreted TFP/ly-6/upar proteins that are expressed in reproductive and neuron-rich tissues and possess neuromodulatory activity. J Biol Chem 2008, Jun 13;283(24):16928-39.
	Onda M, Nagata S, FitzGerald DJ, Beers R, Fisher RJ, Vincent JJ, et al. Characterization of the B cell epitopes associated with a truncated form of pseudomonas exotoxin (PE38) used to make immunotoxins for the treatment of cancer patients. J Immunol 2006, Dec 15;177(12):8822-34.
	Egland KA, Liu XF, Squires S, Nagata S, Man YG, Bera TK, et al. High expression of a cytokeratin-associated protein in many cancers. Proc Natl Acad Sci U S A 2006, Apr 11;103(15):5929-34.
	Vincent JJ, Tai CH, Sathyanarayana BK, Lee B. Assessment of CASP6 predictions for new and nearly new fold targets. Proteins 2005;61 Suppl 7:67-83.
	Tai CH, Lee WJ, Vincent JJ, Lee B. Evaluation of domain prediction in CASP6.

	Proteins 2005;61 Suppl 7:183-92.
	Onda M, Vincent JJ, Lee B, Pastan I. Mutants of immunotoxin anti-tac(dsfv)-PE38 with variable number of lysine residues as candidates for site-specific chemical modification. 1. Properties of mutant molecules. Bioconjug Chem 2003;14(2):480-7.
	Egland KA, Vincent JJ, Strausberg R, Lee B, Pastan I. Discovery of the breast cancer gene BASE using a molecular approach to enrich for genes encoding membrane and secreted proteins. Proc Natl Acad Sci U S A 2003, Feb 4;100(3):1099-104.
	Bera TK, Maitra R, Iavarone C, Salvatore G, Kumar V, Vincent JJ, et al. PATE, a gene expressed in prostate cancer, normal prostate, and testis, identified by a functional genomic approach. Proc Natl Acad Sci U S A 2002, Mar 5;99(5):3058-63.
	Onda M, Nagata S, Tsutsumi Y, Vincent JJ, Wang Q, Kreitman RJ, et al. Lowering the isoelectric point of the fv portion of recombinant immunotoxins leads to decreased nonspecific animal toxicity without affecting antitumor activity. Cancer Res 2001, Jul 1;61(13):5070-7.
	Olsson P, Bera TK, Essand M, Kumar V, Duray P, Vincent J, et al. GDEP, a new gene differentially expressed in normal prostate and prostate cancer. Prostate 2001, Sep 15;48(4):231-41.
	Benesi, A. J., Subramanya, R., Merz, K. M. Jr. and Vincent, J. J. NMR Simulations on MPP Systems, In Industrial Strength Parallel Computing:Programming Massively Parallel Processing Systems. Morgan Kaufman, 1999.
	Wolfgang CD, Essand M, Vincent JJ, Lee B, Pastan I. TARP: A nuclear protein expressed in prostate and breast cancer cells derived from an alternate reading frame of the T cell receptor gamma chain locus. Proc Natl Acad Sci U S A 2000, Aug 15;97(17):9437-42.
	Dixon, S. L., Vincent, J. J., van der Vaart, A., & Merz, K. M. (1998). Applications of the semiempirical divide-and-conquer molecular orbital method. In *ABSTR PAP AM CHEM S* (Vol. 215, pp. U207-U207).
	Vincent, J., Dixon, S., & Merz, K. M. (1997). Parallel implementation of a linear scaling divide and conquer semiempirical molecular orbital algorithm. In *ABSTR PAP AM CHEM S* (Vol. 214, pp. 112-COMP).
	Vincent, J., Dixon, S. L., and Merz, K. M. Jr. Parallel Implementation of a Divide and Conquer Semiempirical Algorithm. Theor Chem Acc 1998 (4).
	Vincent JJ, Merz KM. A Highly Portable Parallel Implementation Of Amber4 Using The Message-Passing Interface Standard. J Comput Chem 1995, Nov;16(11):1420-7.

	Vincent, J. J., Damodaran, K. V., & Merz, K. M. (1994). Parallel Molecular-Dynamics Simulations - Methodology And Applications To Lipid Bilayers. In *Abstr Pap Am Chem S* (Vol. 208, Pp. 38-Comp).
	Vincent, J. J., & Merz, K. M. (1994). A Portable Parallel Implementation Of A Molecular-Dynamics Program. In *Abstr Pap Am Chem S* (Vol. 208, Pp. 102-Comp). Retrieved From Science Citation Index.

GRANTS

Co-PI

An open access, shared database resource for eukaryotic metagenetics research
W. Kelley Thomsa, Holly Bik, James Vincent
Regional Awards for Cyber Enabled Research (RACER)
NECC October, 2010 - September, 2011

Senior Personnel

Improving Connectivity between the University of Vermont and the Vermont State Colleges for STEM Research and Education
National Science Foundation
Sept 2011 – Sept 2013
$1,000,000

Collaborative Research: North East Cyberinfrastructure Consortium
National Science Foundation
9/1/09 - 8/31/12
$1,199,921

Vermont Genetics Network - Vermont INBRE
National Institutes of Health / NCRR
8/1/2010 - 5/31/2015
$16,061,701

Vermont Genetics Network Administrative Supplements to Advance Translational (T1 & T2) Research
National Institutes of Health / NCRR
09/09/2009 – 09/08/2011
$1,709,913

Administrative Supplements for Enhancing NCRR Pilot Project Mechanism
Vermont Genetics Network INBRE
National Institutes of Health
09/16/2009 - 08/19/2011
$329,918

SOFTWARE

AMBER 5.0, D. A. Case, D. A. Pearlman, J. W. Caldwell, T. E. Cheatham III, W. S. Ross, C. Simmerling, T. Darden, K. M. Merz, R. V. Stanton, A. Cheng, J. J. Vincent, M. Crowley, D. M. Ferguson, R. Radmer, G. L. Seibel, U. Chandra Singh, P. Weiner, P. A. Kollman 1997 University of California San

Francisco

ROAR 1.0, A. Cheng, R. S. Stanton, J. J. Vincent, K. V. Damodaran, S. L. Dixon, D. S. Hartsough, M. Mori, S. A. Best and K. M. Merz, Jr. 1997 The Pennsylvania State University

PATENTS

Pastan, I. Bera, T., Wolfgang, C., Lee, B., Vincent, J.: Gene expressed in prostate cancer and methods of use Patent no. 7,816,087, 2010

Onda, M., Nagata, S., Tsutsumi, Y., Vincent, J., Kreitman, R.J., Vasmatzis, G., Lee, B.K., and Pastan, I.: Reduction of the nonspecific animal toxicity of immunotoxins by mutating the framework regions of the Fv to lower the isoelectric point Patent no. 7,521,054, 2009

Egland, K.A., Vincent, J., Lee, B.K, Strausberg, R. and Pastan, I.: BASE, a new cancer gene, and methods and uses thereof. NIH DHHS Reference No: E-321-02/0. U.S. Patent Application No. 60/432,531, filed 12/10/02.

Bera, T., Lee, B.K., Salvatore, G., Vincent, J., and Pastan, I.: PATE, a gene expressed in prostate cancer, prostate and testis, and uses thereof. NIH (DHHS) Ref. No. E-221-01/0. PCT International Application PCT/US02/19086. Filed: June 14, 2002.

Bera, T., Wolfgang, C., Lee, B.K., Vincent, J., and Pastan, I.: New gene expressed in prosate cancer and methods of use. NIH (DHHS) Ref. No. E-005-02/0. New Provisional Patent Application. Filed: November 14, 2001.

INVITED TALKS

Community Resource Solutions to Analyzing Large Genomic Data Sets, Session Chair, ABRF 2013, Palm Spring, CA, March 2013

Practical Cloud Computing for Bioinformatics, University of Rhode Island, February 22, 2013

North East Cyberinfrastructure Consortium (NECC) and the Impact on Research in the Northeast, Northeast Regional Life Sciences Core Directors Meeting, Whitefied, NH, October 24, 2012

Basic and Translational Science Strategic Planning, Vermont Cancer Center, University of Vermont, September 9 and 29, 2012

Metagenomic Survey of Blue-Green Algae A Pilot Project of the NECC, NECC Annual Meeting - University of Delaware, March 2012

Next Generation DNA Sequencing, Northeast Regional Life Sciences Core Directors Meeting (NERLSCD), Cornell University, November 2011

Impact of Cyberinfrastructure on Research Projects of the NECC, VT EPSCoR Annual Meeting, June 2011

Metagenomes of Algal Blooms , NECC Annual Meeting, Orono, ME, March 2011

Metagenomic Survey of Blue-Green Algae, ABRF, San Antonio, TX, February 2011

Moving Forward in the Efficient Management and Utilization of Core Facilities Workshop, NIH/NCRR, Bethesda, MD, November 2010

Metagenomic Survey of Blue-Green Algae, A Pilot Project of the NECC, University of Vermont, September 2010

A Collaborative Pilot Project in Metagenomics, Northeast Regional IDeA Meeting, Whitefield, NH August 2009

Leveraging Regional and National Resources through Tools, Networks, and Forums, Clinical Translational Informatics Meeting, Scottsdale, AZ Feb. 2009

Bioinformatics/Computational Biology Panelist (2008) Northeast Regional Life Sciences Core Directors Meeting, Burlington, VT Oct. 2008

Presenter (2008) National IDeA States of Biomedical Research Excellence, Core Technology Breakout Session, Washington DC August 2008,

Panelist (2008) Science Career Panel, Career Day, Vermont Genetics Network, Burlington, VT April 2008

The Role of Bioinformatics in Gene Discovery, Department of Computer Science, The University of Vermont 2003

MIMD and SIMD Algorithms for Scientific Applications, Aerospace Engineering, The Pennsylvania State University 1994

Optimization of Parallel Codes for the T3D, Pittsburgh Supercomputing Center 1993

Parallel Molecular Dynamics for the SP2, Center for Academic Computing
The Pennsylvania State University 1993

POSTER PRESENTATIONS

Comparative Phosphoproteomic Analysis of Neonatal and Adult Murine Brain, HUPO 11th Annual World Congress, Boston, Massachusetts , September 9 - 13, 2012

NECC Shared Data Center , NECC Annual Meeting, Orono, ME, March 2011

Metagenomes of Algal Blooms , NECC Annual Meeting, Orono, ME, March 2011

Skate Genome Project: A Cyber-Enabled Research And Workforce Development, Plant & Animal Genomes XIX Conference, San Diego, CA, January 2011

Skate Genome Project: a Cyber-Enabled Research and Workforce Development, NISBRE, NIH, Bethesda, MD, June , 2010

NECC - North East Cyberinfrastructure Consortium, NISBRE, NIH, Bethesda, MD, June , 2010

Vermont Cyberinfrastructure Enabling Collaborative Research Through Shared Infrastructure, NSF Cyberworkshop, Arlignton, VA, October 2010

Discovering Prostate Specific Genes Through Bioinformatics, New Discoveries in Prostate Cancer Biology and Treatment Meeting, American Association for Cancer Research 2001

Lowering the Isoelectric Point of the Fv Portion of Immunotoxin anti-Tac(Fv)-PE38 Reduces Nonspecific Animal Toxicity
American Society for Biochemistry and Molecular Biology Meeting 2000

Applications of the semiempirical divide-and-conquer molecular orbital method
American Chemical Society Meeting 1998

Parallel Semiempirical Divide and Conquer Algorithms for Proteins
American Chemical Society Meeting 1997

Parallel Molecular Dynamics Simulations – Methodology and Applications to Lipid Bilayers
American Chemical Society 1994

A Portable Parallel Implementation of AMBER 4
American Chemical Society Meeting 1994

PROFESSIONAL DEVELOPMENT

GMOD Summer School, NESCent, Durham, NC, August 24-29, 2012

Director, Bioinformatics Core 2007 - present
Vermont Genetics Network
University of Vermont, Burlington, Vermont

Information Technology Specialist, 2001-2007
Postdoctoral Fellow 1999-2001
The National Cancer Institute, National Institutes of Health, Bethesda, Maryland

National Science Foundation Traineeship 1994-1998
Research Assistant 1993-1994
Teaching Assistant 1992-1993
The Pennsylvania State University, State College, Pennsylvania

Consultant 1996-1998
Hubble Net Incorporated, St. Louis, Missouri

Software Engineer 1991-1992
Bio-Tek Instruments Incorporated, Winooski, Vermont

Teaching Assistant 1988-1991
Departments of Chemistry and Computer Science
The University of Vermont, Burlington, Vermont

AWARDS

Technology Transfer Award National Cancer Institute 2001, 2002, 2003

Cancer Research Training Award, National Cancer Institute 1999-2001

Traineeship in High Performance Computing, National Science Foundation 1995-1999

Roberts Graduate Student Award, The Pennsylvania State University 1998

Dean's Recognition Award, The University of Vermont 1991

American Chemical Society Undergraduate Award in Analytical Chemistry
The University of Vermont 1990