

NARAYANAN B. PERUMAL

EDUCATION

B.Sc. Chemistry, University of Madras, Madras, India, 1975.
M.Sc. Chemistry, University of Madras, Madras, India, 1977.
Ph.D. Biological Sciences, Carnegie-Mellon University, Pittsburgh, PA, 1985.
M. S. Management IS, Florida State University, Tallahassee, FL, 2001.
Postdoctoral Training Eleanor Roosevelt Institute for Cancer Research, Denver, CO, 1985 – 89.

ACADEMIC APPOINTMENTS

August 2005 – Present: Assistant Professor, Indiana University-Purdue University Indianapolis, School of Informatics, Indianapolis, IN.
2002 – 2005: Visiting Assistant Professor, Indiana University-Purdue University Indianapolis, School of Informatics, Indianapolis, IN.
2001 – 2002: Visiting Assistant Professor, Indiana University, School of Informatics, Bloomington, IN.
1998 – 2001: Lecturer, Florida State University, Department of Information and Management Sciences, School of Business, Tallahassee, FL.
Summer 1999 & Summer 2000: Visiting Faculty, New Mexico State University, South West Biotechnology and Informatics Center, Las Cruces, NM.
1996-1998: Adjunct Assistant Professor, Florida A & M University, Department of Biology, Tallahassee, FL.
1995-1996: Postdoctoral Fellow, Pittsburgh Cancer Institute, Pittsburgh, PA.
1992-1994: Research Associate, University of Pittsburgh School of Medicine, Pittsburgh, PA.
1989-1992: Associate Research Scientist, Allegheny-Singer Research Institute, Pittsburgh, PA.

PROFESSIONAL ORGANIZATIONS

- Member, International Society for Computational Biology.
- Member, American Association for the Advancement of Science.
- Member, American Association of Immunologists.

HONORS AND AWARDS

- NIH-BRSG Award for 1990-91: Allegheny-Singer Research Institute, Pittsburgh.
- NIH-RCMI Junior Faculty Development Award, Fall 1997: Florida A & M University, College of Pharmacy and Pharmaceutical Sciences, Tallahassee.

TEACHING ASSIGNMENTS

- General Biology, Fall 1996 – Spring 1998, Florida A & M University, Tallahassee, FL
- Biology for Non Majors, Summer 1997, Florida A & M University, Tallahassee, FL
- Introduction to Information Systems, Fall 1998 – Spring 2001, Florida State University, Tallahassee, FL
- I101, Introduction to Informatics, Fall 2001, Spring and Summer 2002, Indiana University, Bloomington
- I501, Introduction to Informatics, Spring and Fall 2007
- I502, Introduction to Information Management, Fall 2002, Spring and Fall, 2003 – 2006, Spring 2007
- I532, Seminar in Bioinformatics, Fall 2002, Fall 2003, Spring 2005
- I505, Project Management, Fall 2005 – 2007

- I552, Independent Study in Bioinformatics, Fall 2002, Spring, Summer and Fall, 2003 – 2007
- I590, Topics in Informatics, Bioinformatics for Biologists – Tools and Applications, Summer 2006
- I690, Topics in Informatics, Seminar in Bioinformatics, Spring 2006
- I690, Topics in Informatics, Translational Bioinformatics Applications, Spring 2008
- I692, Thesis/Project in Bioinformatics, Fall 2002, Spring, Summer and Fall, 2003 - 2007

PROFESSIONAL SERVICE

- Reviewer, Annual ACM Symposium on Applied Computing – Bioinformatics Track (2004 – 07)
- Reviewer, Microsoft Fellowship, Office for Professional Development, IUPUI (2005)
- Reviewer, Weed Science Journal (2007)
- Program committee, Bioinformatics Curriculum Collaboration (2007)
- Book reviewer, Briefings in Bioinformatics (2007)
- Book reviewer, Project Management books (2007)

UNIVERSITY SERVICE

School Level

- Elected Member, Budgetary Affairs Committee (2005 – 07)
- Elected Member, Faculty Affairs Committee (2006 - Present)
- Elected Member, Technology and Library Committee (2007 - Present)
- Member, Graduate Student Selection Committee (2002 – Present)
- Member, Undergraduate Curriculum Committee, IU Bloomington (2001 – 02)

Campus Level

- Member, Academic Handbook Committee (2007 - Present)

OTHER PROFESSIONAL ACTIVITIES

Invited Talks

Computational Biology Workshop, Center for Genomics and Bioinformatics, Indiana University, Bloomington, February 28, 2002

Department of Biology, University of Missouri-Rolla, Rolla, Missouri, May 2, 2002

School of Computing, National University of Singapore (NUS), July 22, 2002

Department of Computer Science, Indiana University-Purdue University at Indianapolis, November 15, 2002

Division of Biostatistics, School of Medicine, Indiana University, Indianapolis, April 10, 2003

Eli Lilly and Company, Indianapolis, April 29, 2005

Department of Microbiology and Immunology, School of Medicine, Indiana University, Indianapolis, November 29, 2007

Poster Presentations

Perumal, N. B., and Minkley, E. G. Jr. (1982) Covalent Modification of the F Sex Factor *traT* Gene Product: Signal Sequence Cleavage and Diglyceride Addition. Poster presented at the ASM annual meeting, Atlanta, Georgia.

Harker, D., Jones, C., **Perumal, N.**, Wong, A., and Vora, S. (1987) Muscle- and Liver-Type Phosphofructokinase Gene Loci Map to Homologous Chromosomes in Man and Chimpanzees. Poster presented at the ASHG annual meeting, San Diego, California.

Perumal, N. B., Kenniston, T. W., Weng, Y., Peschon, J., and Appasamy, P. M. (1995) TCR Γ Gene Rearrangements Require An Intact Interleukin 7 (IL-7) Receptor. Poster presented at the 9th International Congress of Immunology, San Francisco, California.

Sankula, R., **Perumal, N.**, and Li, L. (2003) Evolution of Toll Genes from the Perspective of Transcriptional Regulatory Regions. Poster presented at the 11th International Conference on Intelligent Systems for Molecular Biology, Brisbane, Australia.

Childress, P. J., and **Perumal, N. B.** (2005) LymphTF-DB: A Database of Transcription Factors involved in Lymphocyte Development. Poster presented at the 13th International Conference on Intelligent Systems for Molecular Biology, Detroit, Michigan.

Liu, J., **Perumal, N. B.**, Uversky, V. N., and Dunker, A. K. (2005) Natively Unstructured Regions in Transcription Factors. Poster presented at the 13th International Conference on Intelligent Systems for Molecular Biology, Detroit, Michigan.

Perumal, N. B., and Singh, V. (2005) Computational Detection of Transcriptional Control Elements in Lymphocyte Development. Poster presented at the 13th International Conference on Intelligent Systems for Molecular Biology, Detroit, Michigan.

Shenoy, N., Burtschi, D. J., and **Perumal, N. B.** (2006) Computational Identification and Analysis of Transcriptional Control Elements Involved in the Differentiation and Maturation of Dendritic Cells. Poster presented at the CSHL meeting on Gene Expression & Signaling in the Immune System, Cold Spring Harbor, New York.

Perumal, N., Chilukuri, S., Sullivan Jr. W. J., Harris, A., Guenther, B. (2007) Microtubule-binding Proteins As Novel Drug Targets In Pathogens. Poster presented at the 5th Annual American Society for Microbiology Biodefense and Emerging Diseases Research Meeting, Washington, D.C.

Good, S. R., Thieu, V., Kaplan, M. H., and **Perumal, N. B.** (2007) Bioinformatic Analysis of Stat4 Target genes in Th1 Development. Poster presented at the Gordon Research Conference on Bioinformatics: Interface Between Computation and Experiment, Andover, New Hampshire.

Perumal, N., Cheng, B., and Mooney, S. (2007) Bioinformatics Curriculum Collaboration. Poster presented at the Gordon Research Conference on Bioinformatics: Interface Between Computation and Experiment, Andover, New Hampshire.

GRANTS AND FELLOWSHIPS

Summer Research Fellowship, Office for Professional Development, Indiana University-Purdue University Indianapolis, Summer 2003.

Role: Principal Investigator

Title: Computational Identification of Transcriptional Control Elements in Lymphocytic Development.

Amount: \$7,000

Research Support Funds Grant, Research and Sponsored Programs, Indiana University-Purdue University Indianapolis, 2006 – 07.

Role: Principal Investigator

Title: Informatics Approaches to Drug discovery with Microtubule Associated Proteins.

Amount: \$30,000

IUPUI Signature Center Initiative, Office of the Executive Vice Chancellor and Dean of Faculties, 2008 – 10.

Role: Co-Investigator

Title: The Indiana Center for Systems Biology and Personalized Medicine.

Amount: \$75,000

PRINT AND ELECTRONIC PUBLICATIONS

Teaching

Perumal, N.B. (2001) Computational Management of Biological Information. Web course published at http://darwin.nmsu.edu/molb_resources/tutorials/comp-bio/test.htm.

Research

Childress, P. J., Fletcher, R. L., and **Perumal, N. B.** (2007) LymphTF-DB: A Database of Transcription Factors involved in Lymphocyte Development. *Genes and Immunity*, **8**, 360 - 365.

Liu, J., **Perumal, N. B.**, Oldfield, C. J., Su, E. W., Uversky, V. N., and Dunker, A. K. (2006) Intrinsic Disorder in Transcription Factors. *Biochemistry*, **45**, 6873 – 6888.

Childress, P. J., and **Perumal, N. B.** (2005) LymphTF Database. Web site published at http://www.iupui.edu/~tfinterx/template_search.php.

Perumal, N. B., Kenniston, T. W., Tweardy, D. J., Dyer, K. F., Hoffman, R., Peschon, J., and Appasamy, P. M. (1997) TCR Γ Genes Are Rearranged but Not Transcribed in IL-7R α Deficient Mice. *J. Immunol.* **158**, 5744-5750.

Appasamy, P. M., Dhawan, M., Kenniston, T. W., and **Perumal, N.** (1996) Interleukin 7 Responsive Genes in Pre-B Cells Identified By Differential Display PCR. *FASEB J.* **10**, 926.

Perumal, N. B., and Appasamy, P. M. (1996) A Transfection System to Study the Regulation of TCR Gamma Genes. *FASEB J.* **10**, 248.

Perumal, N. B., McMaster, J. H., and Novak, J. F. (1993) Isolation and Characterization of a Monoclonal Antibody Recognizing a Murine Osteosarcoma Cell-Surface Antigen. *Frontiers in Osteosarcoma Research*, pp. 167-170, Hogrefe-Huber Publishers, Seattle.

Perumal, N. B., McMaster, J. H., and Novak, J. F. (1991) Isolation and Characterization of a Monoclonal Antibody Against a Cell-Surface Antigen of C3HOS Osteosarcoma. *FASEB J.* **5**, A464.

Perumal, N. B., and Minkley, E. G. Jr. (1984) The Product of the F Sex Factor *traT* Surface Exclusion Gene is a Lipoprotein. *J. Biol. Chem.* **259**, 5357-5360.

Book Reviews

Perumal, N. (2007) Cardiac Gene Expression: Methods and Protocols. Edited by Jun Zhang and Gregg Rokosh. *Briefings in Bioinformatics* doi: 10.1093/bib/bbm062.

Work in Progress

Good, S. R., Thieu, V., **Perumal, N. B.**, and Kaplan, M. H. Genomic Analysis of Stat4 Target genes in Th1 Development. Manuscript in preparation.

Good, S. R., Kaplan, M. H., and **Perumal, N. B.** Identification and Analysis of Co-regulators of Stat4 in Th1 Development. Manuscript in preparation.

Perumal, N. B., Shenoy, N., William, A., and Guenther, B. Biochemical analysis and similarity search on two microtubule-binding domains from Ensconsin. Manuscript in preparation.

Perumal, N.B., Chilukuri, S., and Guenther, B. Microtubule binding proteins in perturbing microbial pathogenesis. Manuscript in preparation.

Kollipara, R. K., Sankula, R., and **Perumal, N. B.** Toll Evolution: A Perspective from Regulatory Regions. Manuscript in preparation.