

Curriculum Vitae of N. Srinivasan

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Personal Details:

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Date of Birth:	1 April 1962
Sex:	Male
Place of Birth:	Madras (Chennai), India
Nationality:	Indian
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Research Interests:

Computational genomics, bioinformatics and structural biology involving relationship between protein structure, function and interactions. Cellular signal transduction. Protein-protein interactions, biological pathways.

Educational Qualifications:

1991	Ph.D Molecular Biophysics Unit, Indian Institute of Science, Bangalore. Thesis: <i>Conformational studies on globular proteins: Data analysis.</i>
1984	First class M.Sc in Biophysics at Dept. of Crystallography and Biophysics, University of Madras, India.
1982	First class B.Sc in Physics, University of Madras, India.

Positions:

Post	Funded by	Dates	Educational establishment
Professor	DBT, DST, CSIR New Delhi; Indo-French and Indo-UK collaborative grants	June '10 – Till date	Molecular Biophysics Unit, IISc, Bangalore. India
Associate Professor	DBT and CSIR, New Delhi; Indo-French and Indo-UK collaborative grants	June '04 – June '10	Molecular Biophysics Unit, IISc, Bangalore. India
Assistant Professor & International Senior Fellow of the Wellcome Trust.	The Wellcome Trust, London	June '98-June '04	Molecular Biophysics Unit, IISc, Bangalore. India
Visiting Professor	Reunion University, Reunion islands, France	Yearly visits since May '04	Biochemistry department, Reunion University, Reunion islands, France
Senior Fellow	Manchester University, UK	March 08 onwards – present position	Biological Sciences, Manchester University,
Honourary Research Fellow	Honourary position	Sep. '98 – Sep. 2000	Dept. Cryst. Birkbeck College, London, U.K.
Postdoctoral – Computing	Wellcome Trust, to Prof. Blundell	Oct '96-May '98	Dept. of Biochem., Univ. Cambridge, U.K.
Postdoctoral - crystallography & computing *	Ludwig Institute for Cancer Res., London, to Prof. Waterfield	Aug '94- Sep '96	Ludwig Institute for Cancer Res., University College, London, U.K.
Postdoctoral - Computing	A grant by Tripos Inc., St. Louis, to Prof. Blundell	Nov '91-July '94	Dept. Cryst. Birkbeck College, London, U.K.
Senior Research Fellow	Dept. of Sci. & Tech. India, to Prof. Balaram	Jan '91-Oct '91	Mol. Biophys. Unit, Indian Inst. of Sci., Bangalore.

* Honourary visiting research fellow in the laboratory of Prof. Blundell, Birkbeck college, London.

Research group:

Srinivasan's group has an average population of 15 members in the last 6 years with roughly half the number corresponding to PhD students and the other half corresponding to postdoctorals and technicians. So far, 12 of his students have obtained their PhD thesis under his guidance. Several students have done their Masters project with him.

Honours and Awards:

International Senior Fellow of the Wellcome Trust, UK

National Bioscience Award of DBT, Government of India.

Shanti Swarup Bhatnagar Prize awarded by the Council of Scientific and Industrial Research, Government of India – Highest Science prize in India

Membership / affiliations in professional bodies

Elected Fellow of the Indian Academy of Sciences, Bangalore

Elected Fellow of the National Academy of Sciences, India, Allahabad.

Member of the committee on Affiliates and Special Interests Group, International Society of Computational Biology (ISCB), USA

Visiting Professor of Bioinformatics to Reunion university, France since 2004 involving annual visits.

Visiting Professor of Bioinformatics to University of Nantes, France during July 2012

Senior Fellow of the Manchester University, UK

Other professional activities:

A faculty member in the *Faculty of 1000 in Biology* in the section *Structural Biology – Structural Genomics*.

Member of the Editorial Board of the journals

1. *Bioinformatics*
2. *PLoS ONE*
3. *F1000 Research*
4. *International Journal of Bioinformatics Research and Applications*
5. *Research & Reviews in Biosciences*
6. *Resonance*
7. *In Silico Biology*
8. *The Scientific World Journal - Structural Biology*
9. *Biology Direct*

Associate Editor of

1. ***International Journal of Knowledge Discovery in Bioinformatics***
2. ***Bioinformation***.

Acted as a Guest Editor for

1. ***PLoS Computational Biology***.
2. ***Journal of Biosciences***
3. ***Progress in Biophysics & Molecular Biology***

Member of the programme committee of PRIB 2007 (Pattern Recognition In Biology), an International conference held in Singapore in October 2007.

A speaker in the ***Keystone symposium*** held in Cambridge, UK in 2006 on ***Multi-protein complexes***.

Refereed manuscripts for publication in: *J. Mol. Biol., Proteins: Str. Fn. Gen., Prot. Engng., Prot. Sci., Bioinformatics, BMC Bioinformatics, BMC Structural Biology, J. Biomol. Str. Dyn., J. Biosci., Curr. Sci., Trends Biotech., PEDS, Prog. Biophys. Mol. Biol., BMC Genomics, BMC Microbiology, Amer. J. Pharmacogenomics, Nucl. Acids Res., FEBS Letters., PLoS Comp. Biol. J. Struct. Biol., Int. J. Biol. Macromol., J. Bact., Resonance, FEBS Journal, PLoS ONE, IJBRA, Plant Systematics and Evolution, DNA Research, Theory in Biosciences, BBA, Computers in Biology & Medicine, J Mol Recog*

Refereed grant applications for Department of Biotechnology, New Delhi, Career Development program of the Wellcome Trust, London, HFSP, France, Wellcome Trust's review of progress made by Sanger Centre, UK, Council of Scientific and Industrial Research and Department of Science and Technology, New Delhi, Department of Information Technology, Delhi. Acted as a member of the committee for the promotion of scientists working in CSIR institutions and various awards.

Acted as PhD thesis examiner of thesis submitted from Panjab university, University of Kerala, Central University – Hyderabad, Delhi University, Madurai-Kamaraj University, Jadhavpur university, Anna University, Reunion university, SASTRA and Bharathidasan University, Vellore Institute of Technology, Kuvempu University, Reunion university (France), Macquarie University, Sydney, Australia.

Acted as a referee for the promotion of a faculty member of Brigham Young University, USA, for a member of faculty in a South African University and for a faculty member in University of Manchester, UK.

Served as a coordinator of the Integrated PhD programme in Biological Sciences and a member of the core committee on Integrated PhD programmes, Indian Institute of Science.

Member of the Scientific Advisory Board of Jubilant Biosys.

General publications

- [1] C.Ramakrishnan, N.Srinivasan & D.Prashanth (1987) Conformation of glyceryl residues in globular proteins. *Int. J. Pept. Prot. Res.*, **29**, 629-637.
- [2] R.Sowdhamini, N.Srinivasan, B.Shoichet, D.V.Santi, C.Ramakrishnan & P.Balaram (1989) Stereochemical modeling of disulfide bridges: Criteria for introduction into proteins by site-directed mutagenesis. *Prot. Engng.*, **3**, 95-103.
- [3] C.Ramakrishnan & N.Srinivasan (1990) Glyceryl residues in proteins and peptides - An analysis. *Curr. Sci.*, **59**, 851-861.
- [4] N.Srinivasan, R.Sowdhamini, C.Ramakrishnan & P.Balaram (1990) Conformations of disulfide bridges in proteins. *Int. J. Pept. Prot. Res.*, **36**, 147-155.
- [5] N.Srinivasan, R.Sowdhamini, C.Ramakrishnan & P.Balaram (1991) Analysis of short loops connecting secondary structural elements in proteins. In *Molecular conformation and biological Interactions*, (Eds. P.Balaram & S.Ramaseshan) Indian Academy of Sciences, Bangalore. pp 59-73.
- [6] R.Sowdhamini, N.Srinivasan, C.Ramakrishnan & P.Balaram (1992) Orthogonal $\beta\beta$ motifs in proteins. *J. Mol. Biol.*, **223**, 845-851.
- [7] C.Ramakrishnan & N.Srinivasan (1992) Conformational preference of glyceryl residues in proteins. A further confirmation. *Proc. Ind. Natl. Acad. Sci.*, **B59**, 45-54.
- [8] N.Srinivasan (1993) Conformational studies on globular proteins: Data analysis. (A paper on the Ph.D thesis work). *J. Ind. Inst. Sci.*, **73**, 114-120.
- [9] N.Srinivasan & T.L.Blundell (1993) An evaluation of the performance of an automated procedure for comparative modelling of protein tertiary structure. *Prot. Engng.*, **6**, 501-512.
- [10] M.S.Johnson, N.Srinivasan, R.Sowdhamini & T.L.Blundell (1994) Knowledge-based protein modelling. *CRC Crit. Rev. Biochem. Mol. Biol.*, **29**, 1-68.
- [11] J.Emsley, H.E.White, B.P.O'Hara, G.Oliva, N.Srinivasan, I.J.Tickle, T.L.Blundell, M.B.Pepys & S.P.Wood (1994) Structure of pentameric human serum amyloid P component. *Nature*, **367**, 338-345.
- [12] A.C.W.May, M.S.Johnson, S.D.Rufino, H.Wako, Z.-Y.Zhu, R.Sowdhamini, N.Srinivasan, M.A.Rodionov & T.L.Blundell (1994) The recognition of protein structure and function from sequence: adding value to genome data. *Phil. Trans. Roy. Soc. (London)* **344**, 373-381.
- [13] C.M.Topham, N.Srinivasan, C.J.Thorpe, J.P.Overington & N.A.Kalsheker (1994) Comparative modelling of major dust mite allergen *Der p I*. Structure validation using an extended environmental amino acid propensity table. *Prot. Engng.* **7**, 869-894.

- [14] N.Srinivasan, V.S.Anuradha, C.Ramakrishnan, R.Sowdhamini & P.Balaram (1994) Conformational characteristics of asparaginyl residues in proteins. *Int. J. Pept. Prot. Res.* **44**, 112-122.
- [15] S.Zarina, C.Slingsby, R.Jaenicke, Z.H.Zaidi, H.Driessen & N.Srinivasan (1994) Three dimensional model and quaternary structure of the human eye lens protein γ -crystallin based on β and γ -crystallin X-ray coordinates and ultracentrifugation. *Prot. Sci.* **3**, 1840-1846.
- [16] N.Srinivasan, H.E.White, J.Emsley, S.P.Wood, M.B.Pepys & T.L.Blundell (1994) Comparative analyses of pentraxins: implications for protomer assembly and ligand binding. *Structure.* **2**, 1017-1027.
- [17] L.E.Donate, E.Gherardi, N.Srinivasan, R.Sowdhamini, S.Aparicio & T.L.Blundell (1994) Molecular evolution and domain structure of plasminogen-related growth factors (HGF/SF and HGF1/MSP). *Prot. Sci.* **3**, 2378-2394.
- [18] R.Sowdhamini, N.Srinivasan, K.Guruprasad, S.D.Rufino, V.Dhanaraj, S.P.Wood, J.Emsley, H.E.White & T.L.Blundell (1995) Protein three-dimensional structure and molecular recognition: A story of soft locks and keys. *Pharmaceutica Acta Helvetiae.*, **69**, 185-192.
- [19] S.D.Rufino, N.Srinivasan, R.Sowdhamini, J.Murray-Rust, L.E.Donate, A.C.W.May, K.Guruprasad, V.Dhanaraj, B.L.Sibanda & T.L.Blundell (1995) Structure-based design of proteins. Learning from evolution by comparative analyses of protein families. In Proceedings of the Annual Symposium on Protein Engineering, September 1994, Oxford, U.K. pp. 1-8.
- [20] D.V.Nataraj, N.Srinivasan, R.Sowdhamini & C.Ramakrishnan (1995) α -turns in protein structures. *Curr. Sci.*, **69**, 434-447.
- [21] N.Srinivasan, M.D.Waterfield & T.L.Blundell (1995) Regions binding $\beta\gamma$ subunits in $G\alpha$ and PH domains have common structural motifs. *Proceedings of the International conference on Molecular Structural Biology*, 17-20 Sep. 1995, Vienna. (Eds. A.J.Kungl, P.J.Andrew & H.Schreiber) pp. 27-39.
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- [23] N.Srinivasan, M.D.Waterfield & T.L.Blundell (1996) Comparative analysis of the regions binding $\beta\gamma$ -subunits in $G\alpha$ and PH domains. *Biochem. Biophys. Res. Commn.*, **220**, 697-702.
- [24] N.Srinivasan, S.D.Rufino, M.B.Pepys, S.P.Wood & T.L.Blundell (1996) A superfamily of proteins with the lectin fold. *Chemtracts Biochem. Mol. Biol.*, **6**, 149-164.

- [25] N.Srinivasan, K.Guruprasad & T.L.Blundell (1996) Comparative modelling of proteins. In *Protein structure prediction - A practical approach*. (Ed. M.J.E.Sternberg) Oxford University Press, Oxford. pp. 111-140.
- [26] N.Srinivasan, B.Bax, T.L.Blundell & P.J.Parker (1996) Structural aspects of the functional modules in human protein kinase C α deduced from comparative analyses. *Proteins Str. Fn. Gen.*, **26**, 217-235.
- [27] T.L.Blundell & N.Srinivasan (1996) Symmetry, stability and dynamics of multidomain and multicomponent protein systems. *Proc. Natl. Acad. Sci. (USA)*, **93**, 14243-14248.
- [28] C.Ramakrishnan, N.Srinivasan & D.V.Nataraj (1996) Motifs and conformational analysis of aminoacid residues adjoining β -turns in proteins. *Int. J. Pept. Prot. Res.*, **48**, 420-428.
- [29] N.Srinivasan & T.L.Blundell (1996) Insights on the structures of functional modules in protein kinase C family. In *Molecular Biology Intelligence Unit - Protein kinase C*. (eds. P.J.Parker & L.V.Dekker). R.G.Landes company, Texas. pp. 11-24.
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- [37] I.Korn, S.Gutkind, N.Srinivasan, T.L.Blundell, C.C.Allende & J.E.Allende (1999) Interactions of protein kinase CK2 subunits. *Mol. Cell. Biochem.*, **191**, 75-83.
- [38] A.R.Walker, P.A.Davison, C.Agnese, B.-Winfield, C.M.James, N.Srinivasan, T.L.Blundell, J.J.Esch, M.D.Marks & J.C.Gray (1999) The TTG1 (*Transparent Testa, Glabra1*) locus which regulates trichome differentiation and anthocyanin biosynthesis in Arabidopsis encodes a WD40-repeat protein. *Plant Cell* **11**, 1337-1349.
- [39] N.Srinivasan & V.S.R.Rao (1999) Structural features of protein – carbohydrate interactions in galactose and mannose binding proteins complexes. (in *Perspectives in Structural Biology*. Eds. M.Vijayan, N.Yathindra & A.S.Kolaskar) Indian Academy of Sciences. pp. 355-366.
- [40] L.A.Lindsey-Boltz, G.Chawla, N.Srinivasan, U.Vijayraghavan & M.A.Garcia-Blanco (2000) The Carboxy Terminal WD Domain of the pre-mRNA splicing Factor Prp17p is Critical for Function. *RNA* **6**, 1289-1305.
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- [42] S.Deam, N.Srinivasan, J.Westby, E.H.Horn & G.Dolan (2001) Factor X Nottingham and factor X Taunton: Two novel mutations in factor X resulting in loss of functional activity and an interpretation using molecular modelling. *Thrombosis and Haemostasis* **85**, 265-269.
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- [44] S. Sujatha, S. Balaji & N. Srinivasan (2001) PALI - Web-interfaced access to a database of alignments and phylogeny of homologous protein structures. *Bioinformatics*, **17**, 375-376.
- [45] R.J.Newbold, E.C.Raux, C.E.Walker, S.E.Wilkie, N.Srinivasan, D.M.Hunt, S.S.Bhattacharya & M.J.Warren (2001) A cone-rod dystrophy caused by the destabilisation of human GCAP1 by a proline to leucine mutation. *Human Mol. Gen.* **10**, 47-54.
- [46] S. Balaji & N. Srinivasan (2001) Use of a database of structural alignments and phylogenetic trees in investigating the relationship between sequence and structural variability among homologous proteins. *Prot. Engng.*, **14**, 219-226.

- [47] R.Bhandari, N. Srinivasan, Mahaboobi, K. Suguna & S.S.Visweswariah (2001) Functional inactivation of the human guanylyl cyclase C receptor: Modelling and mutation of the protein kinase -like domain. *Biochemistry*, **40**, 9196-9206.
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- [50] A. Krupa & N. Srinivasan (2002) Lipopolysaccharide phosphorylating enzymes encoded in the genomes of Gram-negative bacteria are related to the eukaryotic protein kinases. *Prot. Sci.* **11**, 1580-1584.
- [51] S.Gupta, S.B. Pandit, N. Srinivasan & D. Chatterji (2002) Proteomics analysis of carbon starved *Mycobacterium smegmatis*: Induction of Dps like protein. *Prot. Engng.* **15**, 503-511.
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- [53] N.Eswar, H.A.Nagarajaram, C.Ramakrishnan & N.Srinivasan (2002) Influence of solvent molecules on the stereochemical code of glycyl residues in proteins. *Proteins Str. Fn. Gen.*, **49**, 326-334.
- [54] S. Sehrawat, N. Srinivasan & K.P.Gopinathan (2002) Functional characterization and structural modeling of late gene expression factor 4 from *Bombyx mori* nucleopolyhedrovirus. *Biochem. J.* **368**, 159-169.
- [55] A. Krupa & N. Srinivasan (2002) Repertoire of protein kinases encoded in the draft version of the human genome: Atypical variations and uncommon domain combinations. *Genome Biology* **3**, 66.1-66.14.
- See *Nature News India* (March 2003 issue, pp.12) for a news item on this work.
- [56] V.S. Gowri, S.B. Pandit, P.S. Karthik, N. Srinivasan & S. Balaji (2003) Integration of related sequences with protein three-dimensional structural families in an updated version of PALI database *Nucleic Acids Res.* **31**, 486-488.
- [57] S.B. Pandit, S. Balaji, V.S. Gowri, K.R. Abhinandan, R. Vaishnavi & N. Srinivasan (2003) SUPFAM - Release 1.2. *Nucleic Acids Res.* <http://www3.oup.co.uk/nar/database/summary/219> -On-line publication.

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