



Dr. S. SELVARAJ
Assistant Professor (Retd)

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Academic Qualifications:

Degree	Subject	Year	University
Ph.D.	Biophysics	1990	University of Madras
Post M.Sc.	Bioscience	1978	University of Calcutta
M.Sc.	Biology	1977	Madurai Kamaraj University

Teaching Experience: 10 years

Name of the post	Institution	Period	
		From	To
UGC Emeritus Fellow	Bharathidasan University, Trichy - 620 024	21.05.2015	20.05.2017

Assistant Professor	Bharathidasan University, Trichy - 620 024	01.01.2006	20.05.2015
Lecturer	Bharathidasan University, Trichy - 620 024	11.02.2005	31.12.2005

Research Experience: 25 years

Name of the post	Institution	Period	
		From	To
Collaborative Scientist	RIKEN Tsukuba Institute, Tsukuba, JAPAN	15.07.1999	13.07.2001
Technical Officer (Special Grade)	Department of Physics, Bharathidasan University	22.09.1996	11.02.2005
Graduate Technician (Special Grade)	Department of Physics, Bharathidasan University	29.09.1995	21.09.1996
Graduate Technician (Selection Grade)	Department of Physics, Bharathidasan University	29.09.1988	28.09.1995
DBT National Associate	Molecular Biophysics Unit Indian Institute of Science, Bangalore	30.06.1994	29.06.1995
Graduate Technician	Department of Physics, Bharathidasan University	01.04.1982	28.09.1988
Graduate Technician	Department of Physics, Autonomous P.G. Centre, University of Madras, Tiruchirappalli	29.09.1978	31.03.1982

Areas of Research

Structural Biology & Computational Biology

Research Supervision / Guidance

Research	Program of Study	Completed	Ongoing
	Ph.D.	6	1
	M.Phil.	17	0

Publications

International		National		Others
Journals	Conferences	Journals	Conferences	Books / Chapters / Monographs / Manuals
67	31	0	18	3

h-index	:	21
i10 index	:	36
Total Citations	:	2133

Funded Research Projects

Completed Projects

S. No	Agency	Period		Project Title	Budget (Rs. In lakhs)
		From	To		
1	DST	2007	2011	Inter-residue interactions in Protein Structure, Folding and Stability.	18.23
2	JST-DST	2008	2011	Multi disciplinary Research field which combines information and communications technology with other fields - Research on the recognition mechanism for Biomolecular complexes using Grid computing.	8.4

Distinctive Achievements / Awards

1. UGC Emeritus Fellow (2015-17).
2. Biographical profile selected for inclusion in the First Edition of Marquis Who is Who in Asia (2007).
3. Invited to be a Mentor – for DBT STAR College scheme for three departments, viz. Computer Science, Computer Applications, Information Technology, of PSGR Krishnammal College for Women, Coimbatore.
4. National: DBT Biotechnology National Associate ship Award for the year 1993-94
5. National: DBT Overseas Training Program to visit Swedish University of Agricultural Sciences, Uppsala, Sweden in the year 1996.
6. Collaborative Scientist, RIKEN Life Science Center, Japan during 1999-2001.
7. University Second Rank Holder in M.Sc. (Biology).

Events organized in leading roles

Number of Seminars / Conferences / Workshops / Events organized: 2

1. National Seminar on Bioinformatics (NSB'09).
2. National Seminar on Bioinformatics (NSB'15).

Events Participated

Conferences / Seminars / Workshops: 49

1. 10th International Biophysics Congress July 29 - August 3, 1990, Vancouver, Canada.
2. National Symposium of Biophysics February, 7 – 9, 1991 Madras, India.
3. National Seminar on Mathematical modeling in Biology and Chemistry December, 17 – 20, 1991 Hyderabad, India.
4. International Seminar-cum-School on Macromolecular Crystallographic Data November, 16 – 20, 1995 Calcutta, India.
5. Genome Informatics 1999 Univ. Acad. Press, Tokyo, Japan.
6. Symposium on "Information Biology" January, 17-20, 2000 Nagai Memorial Hall, Shinjiku, Tokyo.
7. Third East Asian Biophysics Symposium May, 22 -26, 2000 Kyongju, Korea.
8. Joint Protein Meeting 2000 (51st Forum for Protein structure, 12th Annual meeting of the Protein Engineering Society of Japan, 7th Workshop on Principles of Protein Architecture) June, 7-10, 2000 Gakushuin Centenary Hall, Meijro, Tokyo, Japan.

9. Joint Protein Meeting 2000 (51st Forum for Protein structure, 12th Annual meeting of the Protein Engineering Society of Japan, 7th Workshop on Principles of Protein Architecture) June, 7-10, 2000 Gakushuin Centenary Hall, Meijro, Tokyo, Japan.
10. Joint Protein Meeting 2000 (51st Forum for Protein structure, 12th Annual meeting of the Protein Engineering Society of Japan, 7th Workshop on Principles of Protein Architecture) June, 7-10, 2000 Gakushuin Centenary Hall, Meijro, Tokyo, Japan.
11. Joint Protein Meeting 2000 (51st Forum for Protein structure, 12th Annual meeting of the Protein Engineering Society of Japan, 7th Workshop on Principles of Protein Architecture) June, 7-10, 2000 Gakushuin Centenary Hall, Meijro, Tokyo, Japan.
12. CBI (Chem-Bio Informatics Society) Millennium symposium on "Start up to the 21st Century" July, 26 – 28, 2000 Japan Pharmaceutical Building, Shibuya, Japan.
13. CBI (Chem-Bio Informatics Society) Millennium symposium on "Start up to the 21st Century" July, 26 – 28, 2000 Japan Pharmaceutical Building, Shibuya, Japan.
14. CBI (Chem-Bio Informatics Society) Millennium symposium on "Start up to the 21st Century" July, 26 – 28, 2000 Japan Pharmaceutical Building, Shibuya, Japan.
15. Genome Informatics 2000 Univ. Acad. Press, Tokyo, Japan.
16. Genome Informatics 2000 Univ. Acad. Press, Tokyo, Japan.
17. Genome Informatics 2000 Univ. Acad. Press, Tokyo, Japan.
18. The 1st Annual Meeting of the Protein Science Society of Japan 2001 June, 1 -3, 2001 Osaka, Japan.
19. The 1st Annual Meeting of the Protein Science Society of Japan 2001 June, 1 -3, 2001 Osaka, Japan.
20. The 1st Annual Meeting of the Protein Science Society of Japan 2001 June, 1 -3, 2001 Osaka, Japan.
21. Genome Informatics 2001 Univ. Acad. Press, Tokyo, Japan.
22. Genome Informatics 2001 Univ. Acad. Press, Tokyo, Japan.
23. Discussion Meeting on Structural Biology and Symposium on Biophysics, Department of Crystallography and Biophysics January, 21 – 23, 2002 University of Madras, Chennai.
24. Genome Informatics 2002 Univ. Acad. Press, Tokyo, Japan.
25. Genome Informatics 2002 Univ. Acad. Press, Tokyo, Japan.
26. Okazaki Lectures, An Asian Winter School on New Trends of Biochemical Physics March 8-11, 2002 Institute of Molecular Science, Okazaki, Japan.
27. International Symposium on "New Horizons in Molecular Sciences and Systems: An integrated approach October, 16-18, 2003 Okinawa, Japan.
28. International Symposium on "New Horizons in Molecular Sciences and Systems: An integrated approach October, 16-18, 2003 Okinawa, Japan
29. Genome Informatics 2003 Univ. Acad. Press, Tokyo, Japan.

30. The Fourth KIAS Conference on Protein Structure and Function: Theories and Computer Simulations of Proteins September 20-22, 2004 Korea Institute of Advanced Study, Seoul, Korea.
31. Theoretical Chemistry Symposium 2006 December, 11-13, 2006 School of Chemistry, Bharathidasan University, India.
32. National Symposium and Bioinformatics February, 9-10, 2007 Osmanabad, Maharashtra.
33. National Seminar of Bioinformatics and Computational Biology March, 21-22, 2007 Annamalai University, India.
34. Emerging Trends in Biotechnology for modern era September, 29-30, 2007 Latur, Maharashtra, India.
35. The First Japan-India Bilateral Symposium on Bioinformatics November, 6, 2008 Computational Biology Research Centre, Tokyo, Japan.
36. National Symposium on Cellular and Molecular Biophysics January, 22-24, 2009 Centre for Cellular and Molecular Biology (CCMB), Hyderabad.
37. National Symposium on Cellular and Molecular Biophysics January, 22-24, 2009 Centre for Cellular and Molecular Biology (CCMB), Hyderabad.
38. National Symposium on Cellular and Molecular Biophysics January, 22-24, 2009 Centre for Cellular and Molecular Biology (CCMB), Hyderabad.
39. National Symposium on Cellular and Molecular Biophysics January, 22-24, 2009 Centre for Cellular and Molecular Biology (CCMB), Hyderabad.
40. International Conference on Physics-Biology Interface (ICPBI) December, 13-16, 2009 SAHA Institute of Nuclear Physics, Kolkatta.
41. International Conference on Physics-Biology Interface (ICPBI) December, 13-16, 2009 SAHA Institute of Nuclear Physics, Kolkatta.
42. International Conference on Physics-Biology Interface (ICPBI) December, 13-16, 2009 SAHA Institute of Nuclear Physics, Kolkatta.
43. International Conference on Physics-Biology Interface (ICPBI) December, 13-16, 2009 SAHA Institute of Nuclear Physics, Kolkatta.
44. The Eighth Asia Pacific Bioinformatics Conference January, 18-21, 2010 National Centre for Biological Sciences (NCBS), Bangalore.
45. The Eighth Asia Pacific Bioinformatics Conference January, 18-21, 2010 National Centre for Biological Sciences (NCBS), Bangalore.
46. The Eighth Asia Pacific Bioinformatics Conference January, 18-21, 2010 National Centre for Biological Sciences (NCBS), Bangalore.
47. The Eighth Asia Pacific Bioinformatics Conference January, 18-21, 2010 National Centre for Biological Sciences (NCBS), Bangalore.
48. 2nd Indo-Japan Symposium on Bioinformatics December, 10 -11, 2010 Indian Institute of Technology, New Delhi.
49. National Symposium cum Workshop on Recent Trends in Structural Bioinformatics and Computer Aided Drug Design December, 20-22, 2010 Alagappa University, Karaikudi.

Other Training Programs: 4

1. Overseas Training Program of the DBT National Associateship, Swedish University of Agricultural Sciences, Uppsala, SWEDEN.
2. Collaborative Scientist – Worked on the development of a Protein-Ligand Interaction Database (ProLINT), The Institute of Physical and Chemical Research (RIKEN) Tsukuba, Japan.
3. To attend Okazaki Lectures, An Asian Winter School on New Trends of Biochemical Physics. March 8-11, 2002 at Institute of Molecular Science, Okazaki, Japan.
4. Visiting Researcher to the Molecular Function team of Computational Biology Research Center, Tokyo, Japan.

Overseas Exposure / Visits

1. Swedish University of Agricultural Sciences, Uppsala, SWEDEN
2. The Institute of Physical and Chemical Research (RIKEN) Tsukuba, JAPAN
3. Institute of Molecular Science, Okazaki JAPAN
4. Okinawa, JAPAN
5. Seoul, KOREA
6. Computational Biology Research Center, Tokyo, Japan.

Membership

Member

1. Nominated by the chancellor to the planning board of Bharathidasan University (2019-2022).

Academic Bodies (such as Board of Studies etc.,)

2. UG, PG, M. Tech. (Six-year Integrated), M. Phil. and PG Diploma programs in Bioinformatics, Bharathidasan University.
3. UG programme in Bioinformatics, Pondicherry University.
4. Board of Studies in Zoology, Holy Cross College (Autonomous), Tiruchirappalli and Lady Doak College (Autonomous), Madurai
5. PG Bioinformatics, Bishop Heber College (Autonomous), Tiruchirappalli.
6. Biodiversity Informatics course, Jamal Mohamed College, Tiruchirappalli.

Resource persons in various capacities

Number of Invited / Special Lectures delivered: 29

Others

1. No. of PhD Thesis evaluated : 3
2. No. of PhD Public Viva Voce Examination conducted : 1

Recent Publications

Books

1. Gromiha MM and Selvaraj S, Recent research developments in protein folding, stability and design. Research Signpost, Trivandrum, India (2002).
2. S. Selvaraj, Bioinformatics – An Introduction in “Research Methods in Life Sciences” (A. Singaravel and Chellam Balasundaram Eds.) UGC Academic College, Bharathidasan University, ISBN 978-81-908597-1-4.
3. S. Selvaraj, Protein Structure, Folding and Folding rate in “Advances in Biosciences” (A. Singaravel, G. Archunan and R. Rajaram (Eds.), UGC Academic College, Bharathidasan University, ISBN 978-81-908597-2-1.

Research Articles in Peer Reviewed Journals

1. M. Michael Gromiha, R. Nagarajan and S. Selvaraj, (2019). “Protein structural bioinformatics: an overview”, Encyc Bioinf Comp Biol. (in press) INVITED REVIEW.
2. David MR, Subbiah P, Samuel S, (2018). “QSAR analysis of Multimodal Antidepressants Vortioxetine Analogs using Physicochemical Descriptors and MLR Modeling”, Curr Comput Aided Drug Des. doi: 10.2174/1573409914666181011144810. (Impact factor: 1.033).
3. D Mary Rajathej and S. Selvaraj, (2017), "A web-database IR-PDB for sequence repeats of proteins in the Protein Data Bank", International Journal of Knowledge Discovery in Bioinformatics, 7(2), 1-10.

4. K.M. Saravanan and S. Selvaraj, (2017), "Comparative Analysis of Inter residue Contact Energy Potentials with Surrounding Hydrophobicity Model", *International Journal for Computational Biology*, 6(1), 1-6.
5. K.M. Saravanan and S. Selvaraj, (2017), "Dihedral angle preferences of amino acid residues forming various non-local interactions in proteins", *Journal of Biological Physics*, 43 (2), 265-278. (Impact factor: 1.394).
6. S Sugunakala and S Selvaraj, (2017), "Identification of potential inhibitors of Epidermal Growth Factor Receptor Tyrosine Kinase by Virtual Screening and Docking Studies", *International Journal of Pharmaceutical Sciences and Research*, 8 (3), 1264. (Impact factor: 1.11).
7. KM Saravanan, S Suvaithenamudhan, S Parthasarathy and S Selvaraj, (2017), "Pairwise contact energy statistical potentials can help to find probability of point mutations", *Proteins: Structure, Function, and Bioinformatics*, 85 (1), 54-64. (Impact factor: 2.499).
8. S Samuel and H Balasubramanian, (2017), "Long-range contacts in unfolding of two-state proteins", *Protein and peptide letters*, 24 (3), 206-214. (Impact factor: 1.069).
9. S Sugunakala and S Selvaraj, (2016), "2D QSAR and Virtual Screening based on Pyridopyrimidine Analogs of Epidermal Growth Factor Receptor Tyrosine Kinase", *Current computer-aided drug design*, 12 (3), 229. (Impact factor: 1.155).
10. S Usha and S Selvaraj (2016), "Prediction of kinase-inhibitor binding affinity using energetic parameters", *Bioinformation* 12 (3), 172-181. (Impact factor: 0.8).
11. K.M. Saravanan and S. Selvaraj, (2015), "Better theoretical models and protein design experiments can help to understand protein folding", *Journal of Natural Science, Biology, and Medicine*, 6 (1), 202.
12. N Saranya, KM Saravanan, MM Gromiha and S Selvaraj, (2015), "Analysis of secondary structural and physicochemical changes in protein-protein complexes", *Journal of Biomolecular Structure and Dynamics*, 34 (3), 508-516. (Impact factor: 2.3).
13. S Usha and S Selvaraj, (2014), "Structure-wise discrimination of adenine and guanine by proteins on the basis of their nonbonded interactions", *Journal of Biomolecular Structure and Dynamics*, 33 (7), 1474-1492. (Impact factor: 2.3).

14. RD Mary, MK Saravanan and S Selvaraj, (2014), "Conservation of inter-residue interactions and prediction of folding rates of domain repeats", *Journal of Biomolecular Structure and Dynamics*, 33 (3), 534 – 551. (Impact factor: 2.3).
15. S Usha and S Selvaraj, (2013), "Structure-wise discrimination of cytosine, thymine, and uracil by proteins in terms of their nonbonded interactions", *Journal of Biomolecular Structure and Dynamics*, 32(10), 1686-704. (Impact factor: 2.3).
16. M Sivaji, V Sadasivam, J Narayanasamy, S Samuel and C Fan, (2014), "Detection, Characterization and Evolution of Internal Repeats in Chitinases of Known 3-D Structure", *PloS one* , 9(3), e91915. (Impact factor: 3.234).
17. MR David and S Selvaraj, (2013), "Analysis of sequence repeats of proteins in the PDB", *Computational Biology and Chemistry*, 47, 156–166. (Impact factor: 1.014).
18. KM Saravanan and S Selvaraj, (2013), "Performance of secondary structure prediction methods on proteins containing structurally ambivalent sequence fragments", *Peptide Science*, 100, 148-153.
19. KM Saravanan and S Selvaraj, (2013), "Search and Analysis of Identical Reverse octapeptides in Unrelated Proteins", *Genomics, proteomics & bioinformatics*, 11, 114–121. (Impact factor: 0.661).