Progress Report of Center of Excellence 2015 – 2016

Funded by Department of Biotechnology Government of India

Center for Computational Biology and Bioinformatics School of Computational and Integrative Sciences Jawaharlal Nehru University New Delhi

The School of Computational and Integrative Sciences (SCIS) is involved in research and teaching programs in areas which are highly interdisciplinary in nature. The major aim of our school is to integrate computational and analytical tools and techniques from different branches of sciences and apply them to get deeper insights into some of the problems which are not hitherto attempted. The school's academic and research programs are currently structured and focused on the core area of Computational and Systems Biology and gradually emphasis is being laid on Complex Systems, Massive Modelling, Simulation and analysis. Department of Biotechnology (Govt. of India) has continued to support our school as **a "Centre of Excellence (COE)"** in Bioinformatics since beginning. Faculties and students are currently pursuing research in diverse fields such as Comparative Genomics, Structural Biology and in silico drug design, Biological Evolution, Biomolecular Simulations, data mining and analysis of large scale data, biophysics, systems biology, robotics, complex systems, artificial intelligence, Econophysics, Quantitative Finance and Statistial Physics. At Present there are thirteen core faculty and five adjunct faculty in our school. Four faculty are likely to join very soon.

SCIS is offering from academic year 2015 ,an integrated **M.Sc.-Ph.D. degree in Computational and Integrative Sciences** with a specialization in either Computational Biology or Complex Systems. The Computational Biology stream will have equivalence to the M.Sc. in Bioinformatics, while the Complex Systems stream will have equivalence to the M.Sc. in Physical Sciences. Additionally, SCIS also offers admission to its Pre-Ph.D. and Direct Ph.D. Programmes in Computational Biology and Bioinformatics. The School has encouraged intake from multiple disciplines into these Programmes - Information Technology, Engineering Sciences, Bioinformatics, the Life Sciences/Biotechnology, the Physical and Chemical Sciences, among others.

Teaching and research Programs are ably supported by good computational and communication infrastructure consisting of computer clusters with multiprocessor nodes, large-memory nodes and GPUs to facilitate specialized research in the new Building of SCIS.

School of Computational and Integrative Sciences currently offers the following three academic programs for the current year.
 (i)   Direct admission to Ph.D. program in Computational Biology and Bioinformatics
 (ii)   Pre-Ph.D./Ph.D. in Computational Biology and Bioinformatics
 (iii) M.Sc/Ph.D integrated in Computational and Integrative Sciences Specialization in Computational Biology or Complex Systems

Number of students under Current & earlier Courses offered :
 Total No of current Pre-Ph.D and Ph.D Students :   29
 Total No of current M.Tech Students   16 (2nd Year)
 Awarded Ph.D from 2003-2015:   25+7(submitted)
 No of students awarded Integrated M.Sc-Ph.D during 2015:   8
 During 2006-2015 M.Tech students passed: 101
 Post Graduate Diploma M.Phil (equivalent) in
 Bioinformatics during 2001-2006:   82

During 2015, seven Students were awarded Ph.D degree and four Ph.D students have submitted their thesis awaiting viva voce examination.

SCIS also has MoU with Queensland University, Australia and BII, Singapore. The student/faculty level exchange has taken place, benefiting the research activity of the School.

Publications during 2015-16:

1. Sarbashis Das , B.M. Fredrik Pettersson , Phani Rama Krishna Behra , Malavika Ramesh , Santanu Dasgupta , **Alok Bhattacharya** , and Leif A. Kirsebom, *Characterization of Three Mycobacterium spp. with Potential Use in Bioremediation by Genome Sequencing and Comparative Genomics Genome* Biol. Evol. 7(7):1871–1886

2. Tanmoy Roychowdhury , Saurav Mandal & **Alok Bhattacharya**, *Analysis of IS6110 insertion sites provide a glimpse into genome evolution of Mycobacterium tuberculosis*(2015) Scientific Reports | 5:12567 | DOI: 10.1038/srep12567

3. Avni Sinha, Kandasamy Eniyan, Swati Sinha, **Andrew Michael Lynn**, Urmi Bajpai

   Functional analysis of TPM domain containing Rv2345 of Mycobacterium tuberculosis identifies its phosphatase activity, Elsevier, doi:10.1016/j.pep.2015.03.003

4. Abdul Qayum, Rakesh Arya, Pawan Kumar, **Andrew M Lynn,** *Socio-economic, epidemiological and geographic features based on GIS-integrated mapping to identify malarial hotspots,* Malaria Journal (Impact Factor: 3.11). 05/2015; 14(1):192. DOI: 10.1186/s12936-015-0685-4 Source: PubMed

5. Deepti Singh, Surender Rawat, Mohd Waseem,Sunita Gupta, **Andrew M Lynn,** *Molecular modeling and simulation studies of recombinant laccase from Yersinia enterocolitica suggests significant role in the biotransformation of non-steroidal anti-inflammatory drugs* Biochemical and Biophysical Research Communications (Impact Factor: 2.3). 12/2015; 469(2). DOI: 10.1016/j.bbrc.2015.11.096

6. "Statistical mechanics of competitive resource allocation using agent-based models", **A. Chakraborti**, D. Challet, A. Chatterjee, M. Marsili, Y.-C. Zhang, B.K. Chakrabarti, Physics Reports 552, 1-25 (2015).

7. "Invariant features of spatial inequality in consumption: the case of India", Arnab Chatterjee, Anindya S. Chakrabarti, Asim Ghosh, **Anirban Chakraborti**, Tushar K. Nandi, Physica A 442, 169-181 (2016).

8. **Singh, G.P.** and Kansal, K., *Basic Results on Crisp Boolean Petri Nets*, **accepted** for the publication in LNCS, Springer.

9. Kansal, S., **Singh, G.P.** and Acharya, M., *On the problem of characterizing Boolean Petri nets*, Int. Jr. of Comp. Appli., Found. of Comp. Sci., New York, USA, **128**(2), October 2015, 1-4, ISBN 973-93-80889-69-7.

10. **Singh, G.P.**, *Basic properties of Petri nets*, SRMS Journal of Mathematical Sciences, published by Department of Mathematics, Shri Ram Murti Smarak College of Engg. & Tech., Bareilly-243202, U.P., India, **1**(1), 2015, 54-71, ISBN: 2394-725X.

11. **Singh, G.P**., Kansal, S. and Acharya, M., *Characterization of Boolean Petri net containing strong chain cycle*, **submitted to Elsevier**.

12. Khan ,Taushif & **Ghosh Indira**; Modularity in protein structures: A study on all alpha proteins. Journal of Biomolecular Structure & Dynamics, **2015 Feb** 11:1-15.

13. Rama Kaalia,Amit Kumar,Ashwin Srinivasan, and **Indira Ghosh;**, An Ab Initio Method for Designing Multi-Target Specific Pharmacophores using Complementary Interaction Field of Aspartic Proteases. Mol. Inf. **2015**, 34, 2 –16

14. Topological variance in protein structure: an insight from kinetics and functional study

T Khan, I Ghosh , Journal of Biomolecular Structure and Dynamics 33 (sup1), 113-114

15. Garg R, Shankar R, Thakkar B, Kudapa H, Krishnamurthy L, Mantri N, Varshney RK, Bhatia S, **Jain M.** (2015) Transcriptome analyses reveal genotype- and developmental stage-specific molecular responses to drought and salinity stresses in chickpea.*Scientific Reports* (*accepted*). (IF = 5.578)

16. Mohd Shariq; Navin Kumar; Rajesh Kumari; Amarjeet Kumar; **Naidu Subbarao**; Gauranga Mukhopadhyay, Biochemical Analysis of CagE: a VirB4 Homologue of Helicobacter pylori Cag-T4SS PlosOne(2015)

17. Priyanka, **Naidu Subbarao**, Niti Puri, Rakesh Tyagi Transcription regulation of nuclear receptor PXR: role of SUMO-1 modification and NDSM in receptor function, Molecular and Cellular Endocrinology,2015

18. Sumit K Chaturvedi; Parvez Alam; Javed M Khan; Mohammad K Siddiqui; Zeeshan Ahmad; Ponnusamy Kalaiarasan; **Naidu Subbarao**; Biophysical insight into the anti-amyloidogenic behavior of taurine, International Journal of Biological Macromolecules, 80, 375-384(2015)

19. Mohd Ishtikhar, Mohd. Sajid Ali, Ayman M. Atta, H. A. Al-Lohedan, Lokesh Nigam, **Naidu Subbarao**, Rizwa H Khan, Interaction of biocompatible natural rosin-based surfactants with human serum albumin: A biophysical study Journal of luminiscence,167, 399-407(2015)

20. Functional dissection of Proliferating Cell Nuclear Antigens (1&2) in human malarial parasite Plasmodium falciparum : possible involvement in DNA replication and DNA damage response, Biochemical Journal, 470 (1), 115-129(2015)

21. Mohammad Hassan Baig, Khurshid Ahmad, Qambar Hasan, Mohd Kalim Ahmad Khan, **Naidu Subbarao**, Mohammad Amjad Kamal and Inho Choi Interaction of glucagon G-protein coupled receptor with known natural anti-diabetic compounds: Multi-scoring in silico approach. Evidence-Based Complementary and Alternative Medicine Special issue on "Herbal Medicines and Natural Products Targeting G Protein-Coupled Receptors in Management of Diseases", Article ID 497253, 6 pages, . doi:10.1155/2015/497253 (2015)

22. Vijayan Ramachandran, **Subbarao Naidu** and Manoharan Natesan Discovery of Marine Sponge Compound as Promising Inhibitor for Macrophage Infectivity Potentiator (Mip) Protein against Chlamydia pneumoniae.International journal of Bioscience, Biochemisty and Bioinformatics,6,5(3),202-210, 2015

23. Alka Jadaun, Raja Sudhakar.D, **N. Subbarao** and Aparna Dixit "In silico screening for novel inhibitors of DNA polymerase III Alpha Subunit of Mycobacterium tuberculosis (MtbDnaE2, H37Rv), 13,3, e0119760 PLOSOne(2015)

24. Ponnusamy Kalaiarasan, Bhupender Kumar, Rupali Chopra, Vibhor Gupta, **Naidu Subbarao**, Rameshwar NK Bamezai silico Screening, Genotyping, Molecular Dynamics Simulation and Activity studies of SNPs in Pyruvate Kinase M2, 10 (3), 1-21 PloseOne(2015)

25. Ramachandran Vijayan, **N.Subbarao**, Natesan Manoharan In silico Analysis of Conformational Changes Induced by Normal and Mutation of Macrophage Infectivity Potentiator catalytic residues and its Interactions with Rapamycin, Interdisciplinary Sciences: Computational Life Science(2015), 7,1-8

26. Sharma, S., Kumar, A., Kundu, S. and **Bandyopadhyay, P**. (2015), Molecular dynamics simulations indicate that tyrosineB10 limits motions of distal histidine to regulate CO binding in soybean leghemoglobin. Proteins, 83: 1836–1848. doi:10.1002/prot.24867

27. An analytical correlated random walk model and its application to understand subdiffusion in crowded environment, J. Chem. Phys. 143, 114104 (2015); http://dx.doi.org/10.1063/1.4930275

28. Jasleen Gundh, Awaneesh Singh, **R. K. Brojen Singh**. Ordering Dynamics in Neuron Activity Pattern Model: An Insight to Brain Functionality. PloS One (2015) DOI: 10.1371/journal.pone.0141463.

29. *G.R. Devi, Md.J. Alam and **R.K. Brojen Singh**. Synchronization in stress p53 network. Math. Med. Biol. (2015) doi: 10.1093/imammb/dqv002.*

30. *Md. Z. Malik, S. Ali, Md.J. Alam, R. Ishrat and **R.K. Brojen Singh**.* Dynamics of p53 and Wnt cross talk. Comp. Biol. Chem. (Accepted) doi:10.1016/j.compbiolchem.2015.07.014 (2015).

31. Md.J. Alam, S. Kumar, V. Singh and **R.K. Brojen Singh**. Bifurcation in cell cycle dynamics regulated by p53. PloS One (2015) DOI: 10.1371/journal.pone.0129620.

32. Md.J. Alam, V. Singh and **R.K. Brojen Singh**. Switching Mechanism in the p53 Regulatory Network. Chapter, Syst. And Synthetic Biol. 195-216 (2015).

33. Kh. Kabita, B. I. Sharma, J. Maibam, **R. K. Brojen Singh** and R.K. Thapa. Structural Phase Transition of Indium Arsenide under induced pressure: A Density functional theory study. J. Appl. Fund. Sc. 1, 2395-5562 (2015).

34. M Jameson, Kh. Kabita, B.I. Sharma, B. Ramendu, RK Thapa, **R.K. Brojen Singh**. Density Functional Theory: Band Structure. Inv. J. Renew. Energy 5, 2231-3419 (2015).

35. Kh. Kabita, M Jameson, B.I. Sharma, RK Thapa, **R.K. Brojen Singh**. First principle study on pressure-induced electronic structure and elastic properties of indium phosphide (InP). DOI:10.1007/s12648-015-0701-0 (2015).

36. Kh. Kabita, B. Indrajit Sharma, Jameson Maibam, **R. K. Brojen Singh** and R.K. Thapa. STRUCTURAL PHASE TRANSITION OF INDIUM ARSENIDE UNDER INDUCED PRESSURE: A DENSITY FUNCTIONAL THEORY STUDY. J. Appl. Fund. Sc. 1, 2395 (2015).

37. K Kabita, J Maibam, B I Sharma, R K Thapa and **R K Brojen Singh**. First principle study on pressure-induced electronic structure and elastic properties of indium phosphide (InP). Ind. J. Phys. 89, 1265 (2015).

38. Kh Kabita, Jameson Maibam, B Indrajit Sharma, **R K Brojen Singh** and R K Thapa. First principles phase transition, elastic properties and electronic structure calculations for cadmium telluride under induced pressure: density functional theory, LDA, GGA and modified Becke–Johnson potential. Mat. Res. Exp. 3, 015901 (2016).

39. Kh. Kabita, M. Jameson, B.I. Sharma, **R.K. Brojen Singh**, R.K. Thapa. A detailed first principle study on the structural, elastic, and electronic properties of indium arsenide (InAs) under induced pressure. Can. J. Phys. (doi: 10.1139/cjp-2015-0275) (2015).

40. Kh. Kabita, Jameson Maibam, Indrajit Sharma, **R. K. Brojen Singh**, R.K. Thapa. Adv. Sc. Lett. 21, 2906 (2015).

41. Maibam Jameson,Kh. Kabita, B I. Sharma, Bhattacharjee Ramendu,Thapa R.K., **R. K. Brojen Singh**. Density Functional Theory: Band Structure. Inv. J. Ren. En. 5, 2231 (2015).

42. Sharma M.K[*]., **Sharma R**[*]., Cao P., Harkenrider M., Jenkins J., Grimwood J., Zhang J., Udvardi M.K., Schmutz J. and Ronald P.C. (2015) Targeted switchgrass BAC library screening and sequence analysis identifies predicted biomass-related and stress response-related genes. *BioEnergy Research*, DOI 10.1007/s12155-015-9667-1.

*First Co-Author

43. Jung K.H., Cao P., **Sharma R.,** Jain R., and Ronald, P.C. (2015) Phylogenomics databases for facilitating functional genomics in rice. *Rice*, 8: 26.
44. **Sharma R.,** Mishra M., Gupta B., Parsania C., Pareek S.L.S., and Pareek A. (2015) De Novo assembly and characterization of stress transcriptome in a salinity-tolerant variety CS52 of *Brassica juncea. Plos One.* 10(5):e0126783.
45. Lao J., Sharma M.K., **Sharma R.,** Fernandez-Nino S.M G., Schmutz J., Ronald P.C., Haezlewood J.L., and Schwessinger. (2015) Proteome profile of the endomembrance of developing coleoptiles from switchgrass (Panicum virgatum).*Proteomics*. DOI: 10.1002/pmic.201400487
46. Manoj Agarwal, Naveen Kumar, and **Lovekesh Vig**, "Parallel Multi Objective Coalition Formation", *Expert Systems and Applications*, 42 (21), 7797-7811, 2015
47. Pankaj Malhotra, **Lovekesh Vig**, Gautam Shroff and Puneet Agarwal, "Long Short Term Memory Networks for Anomaly Detection in Time Series", *European Symposium on Artificial Neural Networks*, Belgium, 2015
48. Sucheta Chouhan and **Lovekesh Vig**, "Anomaly Detection in ECG Time Signals through Deep Long Short-Term Memory based Recurrent Neural Network Architecture" , *DSAA, Paris,* 2015
49. Urminder Singh, Sucheta Chouhan, A. Krishnamachari and **Lovekesh Vig**, "Ensemble of Deep Long Short Term Memory Networks for Labelling Origin of Replication Sequences", *DSAA, Paris,* 2015

JNU DBT –COE was selected for 1ˢᵗ prize during 2011-12 and 3ⁿᵈ Prize during 2012-13 for Publication amongst DBT –COE centers and Best Publication during 2014-2015

Book Chapter /Conference Proceedings

1. "Econophysics and Data Driven Modelling of Market Dynamics", Eds. F. Abergel, H. Aoyama, B. K. Chakrabarti, **A. Chakraborti** and A. Ghosh, (Springer, Milan, 2015).
2. "Physicists' Approaches to a Few Economic Problems", **Anirban Chakraborti,** Yoshi Fujiwara, Asim Ghosh, Jun-ichi Inoue and Sitabhra Sinha, in Eds. F. Abergel, H. Aoyama, B. K. Chakrabarti, A. Chakraborti and A. Ghosh, Econophysics and Data Driven Modelling of Market Dynamics (Springer, Milan, 2015).
3. "Maximizing a Psychological Uplift in Love Dynamics", M. Banerjee, **A. Chakraborti** and J. Inoue, in Eds. R. Lopez-Ruiz, D. Fournier-Prunaret, Y. Nishio, C. Gracio, Nonlinear Maps and their Applications, Springer Proceedings in Mathematics & Statistics (Springer International Publishing, Switzerland, 2015).
4. "Essentials of Econophysics Modelling", Physics Today 68, 1, 44 (2015), **A. Chakraborti**; Book written by František Slanina, Oxford U. Press, 2014. (411 pp.).
5. Eds. **A Chakraborti**, S Chatterjee and P Pradhan, "Proceedings of the STATPHYS-KOLKATA VIII", Journal of Physics: Conference Series 638 (2015).
6. "Preface: STATPHYS-KOLKATA VIII", **A Chakraborti**, S Chatterjee and P Pradhan, Journal of Physics: Conference Series 638, 011001 (2015).
7. "Kinetic Exchange Models in Economics and Sociology", S. Goswami and **A. Chakraborti**, in Eds. R. Lopez-Ruiz, D. Fournier-Prunaret, Y. Nishio, C. Gracio, Nonlinear Maps and their

Applications, Springer Proceedings in Mathematics & Statistics (Springer International Publishing, Switzerland, 2015).

8. "Spatiotemporal pattern formation in a prey-predator model under environmental driving forces", Anuj Kumar Sirohi; Banerjee, Malay; **Chakraborti, Anirban**, Journal of Physics: Conference Series 638, pp. 12004-12014 (2015).

9. Ankit Verma, Ramya Hebbalaguppe, **Lovekesh Vig**, Swagat Kumar and Ehtesham Hassan, "Pedestrian Detection via Mixture of CNN Experts and Thresholded Aggregate Channel Features", *IEEE International Conference on Computer Vision (ICCV) Workshop on Assistive Technologies*, 2015

10. Gaurangi Anand, Ah Kazmi, Pankaj Malhotra, **Lovekesh Vig**, Gautam Shroff, Puneet Agarwal,"Deep Temporal Features to Predict Repeat Buyers", *NIPS Workshop on Learning for E-Commerce, Montreal, 2015*

11. Mohit Yadav, Pankaj Malhotra, S. Sriram, Gautam Shroff, **Lovekesh Vig**, "Augmenting Time series data with ODE models for Anomaly Detection", *NIPS Workshop on Time Series Analysis, Montreal, 2015*

Workshop/Conferences during 2015-16

1. Indo-US Bilateral Conference-cum-Workshop on **Big Data Analysis and Translation in Disease Biology (Big Data and Disease)**, organized by Prof. Indira Ghosh, January 18-22, 2015

2. Mini Symposium on **Mathematical immunology in a nutshell: a stochastic approach**, by Prof. Carmen Molina-Paris, 27th January, 2015

3. Mini Symposium on **Complex Systems**, February 2, 2015 organized Prof. Anirban Chakraborti.

4. Mini-Symposium on **Soft Computing Approach to Improve Efficiency of Brain Computer Interface** by Goutam Chakraborty on February 2, 2015

5. Mini-Symposium on **Some Feature Subset Selection Algorithms** by Basabi Chakraborty on February 2, 2015

6. Mini-Symposium on **Ordering Dynamics in Neuron Activity Pattern Model: An insight to Brain Functionality** by Dr. R.K. Brojen Singh on February 2, 2015

7. Mini-Symposium on **Neuron specific input/output relationship for consciousness regulation: Taking REMS as an example** by Dr. Birendra Nath Mallick on February 2, 2015

8. Mini-Symposium on **Traveling solution for spatio-temporal epidemic model with non-local infection** by Dr. Malay Banerjee on April 16, 2015

9. Mini-Symposium on **Modeling Collective Behavior of Ion Channels** by Prof. Subhendu Ghosh on April 16, 2015

10. Mini-Symposium on **Finite Time Thermodynamic Coupling in a Biochemical Network** by Prof. Anjan Dasguptaon April 16, 2015

11. International workshop on **Econophysics & Sociophysics** during 27th November, 2015 to 1st December, 2015, organized by Prof. Anirban Chakraborti jointly with Delhi University.

12. **Computational Biology: Back to the Future** during Dec 26-27, 2015 organized by Dr. Andrew M. Lynn, SCIS/JNU.

Research Projects (active):

- DST project on "Development and application of new computational techniques to understand macromolecular properties in realistic cellular environment.". PI: Dr.Pradipta Bandhyopadhyay, 2014-2017.
- DBT project on "Computational Core for Plant Metabolomics" Prof Indira Ghosh with IIIT, Hyderabad, 2011-2015.
- DBT Builder Project, Coordinator: Prof R.Bhat, SBT, JNU (SLS, SCMM and SBT and SCIS faculty of JNU) 2012-2017.
- DST Fast Track for Young Scientist, Automaticity in Robot motor skill learning, Dr Lovekesh Vig, 2013-2016.
- DST project, stochastic synchronization: Complexity in signal processing in interacting system. Role of noise and application ,Brojen Singh, 2013-2016
- CSIR Project Understanding Complex dynamics and information proceeding in Brain Network, Brojen Singh,2013-2016.
- **All the Faculty were funded by University of Potential Excellence Project II Supported by UGC**

The Thesis titles of Ph.D Students (Degree awarded) during 2015-16 :

S.No	Name of the Students	Ph.D Title	Supervisior Name
1	Ashutosh Vishwa Bandhu	Origin and Evolution of the Genetic Code: An in *silico* Study.	Dr.Devpriya Chowdhury
2	C. Rupesh Kumar	Collective Dynamics and Emergent Prosperties of Neuronal Systems.	Prof.R. Ramaswamy
3	Swati Sinha	Metabolome Mapping Using Homology and Non-homology Based Methods.	Dr.Andrew Lynn
4	Anmol Jaywant Hemrom	Cyberinfrastructure for the Biological Sciences.	Dr.Andrew Lynn
5	Tanmoy Roy Chowdhury	Comparative Genomics Approaches for Next-Generation Sequencing Data.	Prof.Alok Bhattacharya
6	D.Raja Sudhakar	Computational Study of Growth Factor Receptors (EGFR) by Molecular Modeling and Design of Novel Inhibitors.	Dr.Naidu Subbrao
7	Taushif Khan	Analyzing Organization of Secondary Structural Elements in Protein.	Prof. Indira Ghosh

The Thesis titles of Ph.D Students (Thesis submitted) during 2015-16 :

S.No	Name of the Students	Ph.D Title	Supervisior Name
1	Sudhanshu Shankar		Prof.Pradipta Bandyopadhyay
2	Rama Kaalia		Prof. Indira Ghosh
3	Abdul Qayum		Dr.Andrew Lynn
4	Rashmi Kumari		Dr.Andrew Lynn

The Thesis titles of M.Tech Students (Ddegree awarded) during 2015-16

S.No	Name of the Students	M.Tech Title	Supervisior Name
1	Urminder Singh	Computational identification of replication origin like sequences in whole genome data using entropic and machine learning methods.	Dr.A.K.Chari
2	Sonal Gupta	In Silico designing of novel inhibitors against trk (Tropomyosin Receptor Kinase) kinase domain involved in neuronal and non-neuronal carcinomas.	Dr Naidu Subbarao
3	Anuj Kumar Sirohi	Effect of noise on spatio-temporal pattern formation for interacting population models.	Prof Anirban Chakravorti
4	Madhukhar Narayan	Structure based drug designing against human CHK2 kinase and Pharmacophore modeling using known CHK2 kinase inhibitors.	Prof Indira Ghosh and Dr N.Subbarao
5	Roopak Behera	Classifiers for the Higgs Boson Machine Learning Challenge.	Dr Lovekeshviz
6	Vosu Mittal	Random Subspace Regression Modeling of Large Data Sets.	Dr Narendra Sahni
7	Mayank Kumar Jaiswal	Ionic atmosphere around RNA & structural variation of RNA as a function of salt concentration.	Prof Pradipta Bandyopadhyay

List of Summer Trainee 2015 (Long Term):

S.No.	Name of the Trainee	Institute Name	Supervisior Name
1	Ahsan Masood	Integral University, Lucknow	Dr.Naidu Subbarao
2	Syed Husain Abbas Husaini	Integral University, Lucknow	Dr.Naidu Subbarao

List of Summer Trainee 2015 (Short Term):

S.No.	Name of the Trainee	Institute Name	Supervisior Name
1	Icxa Khandelwal	Jaypee university of Information Technology, Solan H.P	Dr.Naidu Subbarao
2	L Naga Rajiv	Birla institute of Technology and Science Pilani	Prof.Indira Ghosh
3	Prashant Gupta	Jaypee Institute of Information Technology, Noida	Dr.Naidu Subbarao
4	Gagendeep Singh	IP University	Dr.Lovekesh Vig
5	Amol Khandu Narwada	Mumbai University	Prof.Pradipta
6	Debasisi Sardar	IISER, Kolkata	Prof.Indira Ghosh

Future Plan

- Seven Faculty are recruited recently few of them have joined school

- Two G.N.Ramachandran Fellowships and few technical positions will be filled up.

- M.Sc/PhD Integrated program in Computational and Integrative Sciences with specialization Computational Biology and Complex Systems wasoffered from academic year 2015.

- Improving Infrastructure in High Performance computing Facility in New Building using DST Purse Funds

<div align="right">

Prof. Anirban Chakraborti

Coordinator

DBT-Centre of Excellence in Bioinformatics

School of Computational and Integrative Sciences

Jawaharlal Nehru University

New Delhi-110067, India

dean_scis@mail.jnu.ac.in

</div>

....