साहा इंस्टिट्यूट ऑफ न्यूक्लियर फिजिक्स
SAHA INSTITUTE OF NUCLEAR PHYSICS
(परमाणु ऊर्जा विभाग, भारत सरकार के अंतर्गत स्वायतशासी शोध संस्थान)
(Autonomous Research Institute under the Dept. of Atomic Energy, Govt. of India)
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वेबसाईट/Website : www.saha.ac.in

Diamond Jubilee Year

From
Dr. Rahul Banerjee
Crystallography and Molecular Biology Division
E-mail: rahul.banerjee@saha.ac.in

Date: 10/12/2016

To Whomsoever it may concern

I have supervised the research of the candidate Dr. Sankar Chandra Basu, leading to the award of the PhD degree in 2014. His area of research was in the computational study of amino acid side-chain packing within proteins to form densely packed cores, estimation of surface and electrostatic complementarity within proteins and in the design of scores for protein fold recognition and structure validation. His performance has been exemplary and I can say without any reserve that he is one of the most intelligent students I have come across. He has exceptional programming abilities and has expertise in several languages (Fortran, Perl, MatLab etc). He is quite capable of conducting independent research and to think creatively and originally on a given scientific problem.

He has further updated his abilities by post doctoral research in Linkoping University, Sweden in the area of protein – protein interactions by designing scoring functions to assess the quality of docked protein complexes. In addition he has also developed expertise in the design of structural validation measures for interacting proteins. He has considerable experience in molecular dynamics simulations, machine learning and image processing techniques. He has worked in both proteins and nucleic acid systems.

I am sure he will be able to provide innovative leadership in the design and execution of fundamental problems in the field of computational biology spanning interdisciplinary areas and will be an asset to any Institution wherein he is given the opportunity to serve.

Yours sincerely,

Dr. Rahul Banerjee
Professor
Saha Institute of Nuclear Physics
1/AF, Bidhannagar, Kolkata - 700 064

Foundation for Applied Molecular Evolution
P.O. Box 13174, Gainesville FL 32604
Dietlind L. Gerloff, PhD
Senior Fellow/Principal Investigator

CERTIFICATION OF WORK for Dr. Sankar C Basu July 31, 2014

To Whom It May Concern:

Dr. Sankar C. Basu was employed at our research institute as a postdoctoral fellow under my supervision from February 24 to July 31, 2014. During this time he contributed to two research projects in protein informatics: (1) Sequence analyses of various paralogs within the CEACAM surface protein family (carcinoembryonic antigen-related cell adhesion molecules), (2) Screening of pre-built protein ortholog databases for non-conserved protein binary interactions. These projects are on-going collaborations with the Liberles research (University of Wyoming) but during the duration of his employment Prof. Liberles was not involved in Dr. Basu's supervision. Dr. Basu's contributions were primarily in data preparation for these projects which will be pursued further in our research groups.

His specific accomplishments that will be useful to our projects as they are ongoing included:

- Learning to prepare "clean" (i.e. likely isoform-homogenous) multiple sequence alignments of protein ortholog families for selected CEACAM paralogs by merging, and manually curating, pre-computed families from the high-throughput/comprehensive databases TAED (Liberles group), Master-Catalog (FfAME) and NCBI RefSeq Ortholog lists
- Summarizing the protocol above with a view toward automation
- Writing two functional well-documented utility scripts (Perl) to identify entries within a list if given accession codes (from NCBI or ENSEMBL) that have become obsolete, using NCBI-Entrez's E-Utilities code and ENSEMBL's Perl-API), and replace obsolete NCBI-gi numbers automatically
- Learning to use our group's automated homology modeling pipeline and produce CEACAM domain coordinate models with it
- Learning to create electrostatic surface potential (ESP)-colored solvent-accessible surface representations that can be passed on to others, within UCSF's Chimera (from Delphi maps) and produce these for the CEACAM domain models
- Producing codon alignments using the PAL2NAL webserver (Bork group) for CEACAMs

Dr. Basu's prior training did not involve web-bioinformatics and he acquired first basic skills in this area during his time at FfAME (this also included Pfam and SMART searches). He worked well under instruction, is well organized and passionate (especially about 3D-structural detail and analysis), responsible and punctual. I wish him all the best for his future.

Sincerely,

Dietlind L Gerloff, PhD
Senior Fellow & Principal Investigator in Bioinformatics

2017-05-11

Work Certificate

This letter is to certify that Sankar Chandra Basu worked as a post-doctoral visiting researcher in my laboratory at Linköping University from 16th October 2014 to 31st May 2016. During his stay here, Sankar worked on protein-protein docking scoring, quality structure validation and intrinsically disordered proteins, and published the papers listed below. He is conceptually strong in his field and innovative in attitude but more importantly, he has also made a dedicated effort to broaden his research perspective during his post doc in my group, shifting from protein structures to interactions, leading to the development of scoring functions assessing the overall quality of protein-protein docking models

Sankar has demonstrated extreme dedication to his research tasks. A token of this is the four papers he published during his stay at Linköping University (listed below).

1. SARAMAint: The Complementarity Plot for Protein-Protein Interface
Sankar Basu, Dhananjay Bhattacharyya, and Björn Wallner*
Journal of Bioinformatics and Intelligent Control, 2014, 3:309-314.

2. Finding correct protein-protein docking models using ProQDock.
Sankar Basu, Björn Wallner*
Bioinformatics.
2016, 32 (12): i262-i270.

3. DockQ: A quality measure for protein-protein docking models.
Sankar Basu, Björn Wallner*
PLOS ONE, 2016, 11 (8): e0161879

4. Proteus: A Random Forest Classifier that Predicts Disorder-to-Order Transitioning Binding Regions in Intrinsically Disordered Proteins
Sankar Basu, Fredrik Söderqvist, Björn Wallner*
Journal of Computer-Aided Molecular Design, 2017, Volume 31, Issue 5, pp 453–466

Björn Wallner
Associate Professor of Bioinformatics
Head of Bioinformatics Division

Linköping University
Department of Physics, Chemistry and Biology
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UNIVERSITY OF CALCUTTA

Prof. Anjan Kr. Dasgupta

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Ballygunge Campus
35 Ballygunge Circular Road
Kolkata 700019 India

June 27, 2017

Sub: Certificate for Dr. Sankar C Basu

To Whom It May Concern

This is to certify that Dr. Sankar C. Basu had taken a full course on Bioinformatics hands on and related theory (M.Sc, Biochemistry) including conducting examinations and participating in evaluations at the department of Biochemsitry, University of Calcutta. January-February, 2017. Sincerely,

Prof-ANJAN Kr. DASGUPTA
Dept. of Biochemistry
University of Calcutta

(Anjan DasGupta)

UNIVERSITY OF CALCUTTA

Prof. Anjan Kr. Dasgupta

2461 -5445 Ext 438
URL http://biochem.caluniv.in
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FAX: 91 33 24614849

Ballygunge Campus
35 Ballygunge Circular Road
Kolkata 700019 India

December 13, 2017

To Whom It May Concern

This is to certify that. Sankar Chandra Basu worked a DST-SERB National Post Doctoral Fellow from June 6, 2016 to March 31st ,2017 on a project on Intrinsically Disordered Proteins (PDF/2015/001079).
During this period Dr. Basu has also published the following papers : 1. Nitric oxide sensing by chlorophyll a, Abhishek Bhattacharya, Pranjal Biswas, Puranjoy Kar, Piya Roychoudhury, Sankar Basu, Souradipta Ganguly, Sanjay Ghosh, Koustubh Panda, Ruma Pal, Anjan Kr.Dasgupta, Analytica Chimica Acta ,985, 2017, 101-113.
2. Salt-bridge Networks within Globular and Disordered Proteins - Characterizing Trends for Designable Interactions, S Basu, D Mukherjee, Journal of Molecular Modeling, 2017, 23:206.
He has also developed a software related to fusion imaging for MFM (magnetic force microscopy) [Reg. No. SW-9224/2017] I know since 11 years from when he was a student at the Biochemistry department during his Master degree (2007 pass out)
He is a very skillful programmer, complementing with a sound scientific knowledge and understanding in different branches of biochemistry and biophysics. I wish him success in life.
Sincerely,

Prof-ANJAN Kr. DASGUPTA
Dept. of Biochemistry
University of Calcutta

(Anjan Kr. Dasgupta)

Prof. Parbati Biswas
Professor
Department of Chemistry
University of Delhi
Delhi - 110 007 (INDIA)

91-9818 044 887 *(Mobile)*
91-11-2766 7794 *(Office)*
E-Mail: pbiswas@chemistry.du.ac.in

5. 4. 2018

TO WHOM IT MAY CONCERN

This is to certify that Dr. Sankar Chandra Basu worked as a DST- SERB National Post doctoral Fellow (NPDF) in my group at the Department of Chemistry, University of Delhi from 1st May 2017- 5th March 2018. In my group, Dr. Basu has worked on the structural analysis of intrinsically disordered proteins, especially exploring the role of salt bridges in the context of the structural flexibility of these proteins. This work is recently published as an article titled
"Salt-bridge Dynamics in Intrinsically Disordered Proteins: A trade-off between electrostatic interactions and structural flexibility" by Sankar Basu and Parbati Biswas,
BBA Proteins and Proteomics, 2018, 1866 (5-6): 624-641. Publisher: Elsevier
Earlier, Dr. Basu has pursued post doctoral research in the Bioinformatics Division of Linkoping University, Sweden and Dept. of Biochemistry, University of Calcutta. He has a wide range of research interests spanning across Bioinformatics, Biophysics, and Biochemistry to Biotechnology with a specialization in computational structural biology. Dr. Basu has an extensive experience in developing algorithms related to modelling of biomolecules, graphical statistical and numerical analysis, database studies that include handling of large data, designing scores, structure analysis and writing web-based scripts. He is an expert in running different simulation packages like Delphi, NAMD, AMBER, GROMACS, MODELER, STRIDE and applied bioinformatic web-tools for sequence analysis and modelling of protein structures.

Dr. Basu is a motivated, sincere and intelligent individual with a consistently good academic record. He has good communication skills. He has participated in many conferences as an invited speaker. He is an amicable person with good moral conduct and character. Dr. Basu is also fond of teaching and has taught a course titled" Molecular Recognition and Docking" at the Dept. of Biochemistry, University of Calcutta. Apart from his research, he is interested in poetry and creative writing. I wish him success in his entire future endeavor.

P Biswas
5. 4. 2018

UNIVERSITY OF CALCUTTA

Prof. Maitrayee DasGupta
Department of Biochemistry,
35 Ballygunge Circular Road,
Kolkata-700019.
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Mobile: +919830776131
Permanent Address:
4/9 WIB (R) Golf Green
Housing complex

To whom it may concern

"This is to certify that Dr. Sankar Chandra Basu took a full special paper course on 'Molecular Recognition and Docking', March-May, 2013, part of the Masters degree curriculum in the department of Biochemistry, University of Calcutta when he was a final year graduate student (Senior Research Fellow) at Saha Institute of Nuclear Physics, Kolkata."

He was an excellent teacher with a great depth of knowledge.

Yours sincerely,

Maitrayee DasGupta

Prof. Maitrayee DasGupta

Professor Maitrayee DasGupta
Department of Biochemistry
University of Calcutta

CLEMSON UNIVERSITY

DEPARTMENT OF PHYSICS & ASTRONOMY

September 27, 2018

Whom it may concern

Ref.: Certification letter for Dr. Sankar Basu

This is to certify that Dr. Sankar Basu was a postdoctoral researcher in my lab in the period April 1 until September 30, 2018. Enforceable family circumstances made Dr. Basu to go back to his home country, India, and to terminate his contract.

During the time Dr. Basu was in my lab he was involved in team work to maintain and further develop the popular software package DelPhi. His specific duties were to find at what cases the software was experiencing some computational issues and to further refine and develop new examples illustrating DelPhi capabilities. These duties were properly carried out.

In addition, Dr. was involved in several scientific projects. One of them is already published (Proteins. 2018 Sep 25. doi: 10.1002/prot.25608. [Epub ahead of print]). This is a project to extend the DelPhiPKa option to include pKa predictions of polar residues and to enable the salt concentration to be taken into computational protocol. Another project that Dr. Basu was involved was writing a review paper on molecular effects of human genetic disorders. The manuscript is currently under review.

Overall, having in mind very short period that Dr. Basu was in the lab, I should say that I am satisfied of his performance and he performed his duties at desired level.

Sincerely,

Emil Alexov
Professor, Department of Physics
Professor, Department of Material Sciences
Faculty Scholar at Clemson School of Health Research
Tel: (864) 656-5307
Email: ealexov@clemson.edu

FACULTÉ DES SCIENCES et SCIENCES APPLIQUÉES
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Marianne Rooman

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Email mrooman@ulb.ac.be

February 18, 2020

To whom it may concern.

This letter is to certify that Dr. Sankar Chandra Basu worked as a post-doctoral researcher under my supervision in the Computational Biology and Bioinformatics group at the Université Libre de Bruxelles, Brussels, Belgium from February 1st, 2019 to August 14th, 2019. Although the initial contract was for one and a half year, he chose to quit after he was offered a permanent academic position in his hometown, Kolkata, India, as he wanted to be with his parents in their old age. Currently, he is an assistant professor at Asutosh Collage under the University of Calcutta.

During his stay in my group, Sankar worked in the field of structural bioinformatics applied to membrane proteins. More precisely, he derived and combined different statistical potentials for predicting which protein residues are embedded in the lipid membrane and where the membranes are positioned. For this purpose, he developed a prediction pipeline using MATLAB code. The project is almost completed; Sankar continues to collaborate with my group on this topic.

Apart from his main project, he has also contributed to the paper:

Mbaye, M.N., Hou, Q., Basu, S. Teheux, F., Pucci, F., & Rooman, M. A comprehensive computational study of amino acid interactions in membrane proteins. Sci Rep ***9,*** *12043 (2019).* *https://doi.org/10.1038/*

Sankar is a passionate researcher, conceptually strong and innovative in his field. More importantly, he makes sincere and dedicated efforts to learn and to extend his research expertise to new topics. For example, it was the first time he worked with membrane proteins.

I wish him all the best for his future career.

Sincerely yours,

Marianne Rooman
Professor
Research Director

ASUTOSH COLLEGE
(ESTD-1916)
92 , S.P.Mukherjee Road
Kolkata-700026

Phone: 2455-4504/2486-3912
Fax: (033) 2486-3006
Mail: mail@ asutoshcollege.in
Web : WWW.asutoshcollege.in

Ref: A/ 248 / 32 / 19 **Date:25.07.2019**

From:

The Vice Principal
Asutosh College
92,S.P Mukherjee Road
Kolkata-700026

To:
Sankar Chandra Basu
343, DumDum Park,
Kolkata West Bengal 700055

Sir/Madam

As per approval of the Governing Body and on the recommendation of the West Bengal College Service Commission vide letter No.112/CSC/CU/(SKD)-01/17, dated 11/07/2019, you are appointed as an Assistant Professor of Microbiology at Asutosh College on the academic Grade Pay Rs.6000/-in the Pay Band of Rs.15600-39100/-. You will be entitled to the allowances/benefit as admissible from time to time with effect from the date on which you join the post on substantive basis.

You will remain on probation for a period of one year with effect from the date on which you join the Post. Regarding probation, confirmation and other conditions of service you will be guided by the West Bengal College teachers (Security of Service) Rules, 1977 and the Rules made there under in addition to the Government Order and Rules and Statutes/Regulations/Rules/Ordinance etc. of the University of **Calcutta.**

This letter of appointment will be treated as cancelled if you fail to join the post by **24.08 .19**..

Yours faithfully,

25/07/2019
VICE-PRINCIPAL / SECRETARY
ASUTOSH COLLEGE
Calcutta-26

VICE- PRINCIPAL/SECRETARY TO THE G.B.

Ref: A/ 248 / 32 / 19 **Date:25.07.2019**

Copy forwarded to –

The Secretary, The west Bengal College Service Commission,
Purta Bhavan, DF Block, 3rd floor, sector –I salt lake, Kolkata-700091for information with reference to this letter No.112/CSC/CU/(SKD)-01/17, dated 11/07/2019.

25/07/2019
VICE-PRINCIPAL / SECRETARY
ASUTOSH COLLEGE
Calcutta-26

VICE-PRINCIPAL/ SECRETARY TO THE G.B.

Allowed to join w.e.f. 16/08/2019 (forenoon)
16/08/2019

To
The Vice Principal
Asutosh College
92, S. P Mukherjee Road
Kolkata – 700026

ASUTOSH COLLEGE ESTD-1916 KOLKATA

Date: 16/08/2019

Vice-Principal
ASUTOSH COLLEGE
KOLKATA-700 026

Subject: **Joining Report** as an Assistant Professor in Microbiology.

Respected Sir,

I, Dr. Sankar Chandra Basu, son of Baran Chandra Basu, hereby join service as Assistant Professor in Microbiology (R.P No. 16) in your college as per the Recommendation Letter (Ref. No. : 112/CSC / CU/ (SKD) - 01/2017, Dt. 11/07/2019), issued by the West Bengal College Service Commission and the subsequent Letter of Appointment (Ref. No. : A/248/32/19) issued by your office dated 25.07.2019, today, 16th August, 2019, 11.30 am (forenoon).

With regards,

Yours faithfully,

Sankar Chandra Basu
16/08/2019

(Dr. Sankar Chandra Basu)