FELLOWSHIP APPLICANT BIOGRAPHICAL SKETCH

USE ONLY FOR INDIVIDUAL PREDOCTORAL and POSTDOCTORAL FELLOWSHIPS. DO NOT EXCEED FOUR PAGES.

NAME OF FELLOWSHIP APPLICANT Sarmistha Ray-Saha	POSITION TITLE Postdoctoral Fellow
eRA COMMONS USER NAME (credential, e.g., agency login) SRAY-SAHA	

EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	YEAR(s)	FIELD OF STUDY
University of Calcutta, India	B.Sc.	2001	Chemistry
University of Calcutta, India	M.Sc.	2003	Biotechnology
Yale University, New Haven, CT	M.Phil.	2006	Molecular Biophysics and Biochemistry
Yale University, New Haven, CT	Ph.D.	2010	Molecular Biophysics and Biochemistry
Rockefeller University, New York, NY (postdoc)	n/a	n/a	Molecular Biology and Biochemistry

Please refer to the application instructions in order to complete sections A, B, C, and D of the Biographical Sketch.

A. Personal Statement

I developed a passion for Science early in high school when the intricate world of Biology-Chemistry-Physics opened up to me. My undergraduate training in Chemistry broadened my understanding and passion for Organic and Physical Chemistry. Subsequently, a Master's program in Biotechnology introduced me to emerging technologies being developed to improve the quality of human life. The program included several training and research opportunities in academic and industrial sectors, further adding to my knowledge and expertise. Particularly, a three-month research fellowship under the guidance of Professor Dipankar Chatterji at the Indian Institute of Sciences was instrumental in honing my independent research abilities. Thereafter, I went on to pursue a one-year research opportunity at the National Center for Biological Sciences to explore hands-on research under the guidance of Professor Jayant Udgaonkar. My project involved standardizing a continuous flow mixer, which is now fully functional, and used to analyze the folding trajectories of different proteins. My diverse research experiences in protein biochemistry and biophysics aligned perfectly with my interest in studying protein-protein crosstalk, important in understanding disease pathogenesis. My dissertation research at Yale University in the Schepartz laboratory of Chemical Biology included the development of a sensor for tyrosine kinase activity using bipartite tetracysteine display, a technology that has recently been established by the Schepartz lab. In addition to learning Biochemistry, Biophysics, Cell Biology and Molecular Biology tools and techniques, I developed valuable undergraduate and graduate student mentoring skills that will go a long way in shaping my career. Two times I got the opportunity to be a teaching assistant for a graduate course, which cemented my desire to be a mentor and impart the education I have received along the way to a new generation of scientists. Professor Schepartz has inspired me tremendously, and reinforced my ambitions to contribute to the field of basic and applied science. Currently, my position as a postdoctoral fellow in the prestigious research environment of the Sakmar Laboratory at the Rockefeller University will strengthen my skills and training in preparation of a career in Science. Research in the field of transmembrane receptor signaling will have immense potential in my projected career path.

B. Positions and Honors

ACTIVITY/OCCUPATION	BEGINNING DATE (mm/yy)	ENDING DATE (mm/yy)	FIELD	INSTITUTION/COMPANY	SUPERVISOR/ EMPLOYER
Summer Research Fellow	05/2002	07/2002	Biochemistry	Indian Institute of Sciences	Dipankar Chatterji
Junior Research Fellow	08/2003	07/2004	Biophysics/Biochemistry	National Center for Biological Sciences	Jayant B. Udgaonkar

ACTIVITY/OCCUPATION	BEGINNING DATE (mm/yy)	ENDING DATE (mm/yy)	FIELD	INSTITUTION/COMPANY	SUPERVISOR/ EMPLOYER
Postdoctoral Fellow	05/2010	present	Biochemistry/Cell Biology	Rockefeller University	Thomas P. Sakmar

Academic and Professional Honors

2001 Qualified for the National Scholarship Scheme for Bachelor's degree
2002 Indian Academy of Sciences Fellowship for summer research; Qualified for National Eligibility Test for Lectureship and awarded Junior Research Fellowship; Qualified in Graduate Aptitude Test in Engineering (GATE-2002) (Percentile Score 98.96, All India Rank 35), India
2003 Secured 1st rank in Masters in Biotechnology; Selected as a Ph.D candidate for the Department of Biological Sciences (D.B.S.)
2004 Nominated by University of Calcutta for the President of India Medal for Proficiency
2009 Travel award from the ACS Division of Biological Chemistry

C. Publications

Research papers:

1. Crystal D. Zellefrow, Jennifer S. Griffiths, **Sarmistha Saha**, Abby M. Hodges, Jessica L. Goodman, Joshiawa Paulk, Joshua A. Kritzer and Alanna Schepartz. Encodable Activators of Src Family Kinases. *J. Am. Chem. Soc.* 2006, *128(51)*:16506. (PMID: 17177392)

2. **Sarmistha Ray-Saha** and Alanna Schepartz. Visualizing tyrosine kinase activity with bipartite tetracysteine display, *ChemBioChem,* 2010*, 11(15):*2089. (PMID: 20848632)

3. Fabien M. Décaillot, Manija A. Kazmi , Ying Lin, **Sarmistha Ray-Saha**, Thomas P. Sakmar and Pallavi Sachdev. CXCR7/CXCR4 heterodimer constitutively recruits beta-arrestin to enhance cell migration. *J. Biol. Chem.* 2011, *286(37)*:32188. (PMID: 21730065)

Abstracts:

Sarmistha Ray, Crystal D. Zellefrow, Jennifer S. Griffiths, Abby M. Hodges, Alanna Schepartz 2009. Abstract for poster presentation, 238th ACS National Meeting, Washington (DC).

D. Scholastic Performance

YEAR	SCIENCE COURSE TITLE	GRADE	YEAR	OTHER COURSE TITLE	GRADE
	UNIVERSITY OF CALCUTTA				
2001	Organic Chemistry	53		**Math (Algebra, Matrices, Calculus, Linear Programming, Coordinate Geometry)	55
2001	Inorganic Chemistry	64		** Language (English and Bengali)	59
2001	Physical Chemistry	68			
2001	Advanced Organic Chemistry	74			
2001	Analytical and Advanced Inorganic Chemistry	63			
2001	Chemistry Practicals 1	76			
2001	Chemistry Practicals 2	88			
2001	Chemistry Practicals 3	87			

YEAR	SCIENCE COURSE TITLE	GRADE	YEAR	OTHER COURSE TITLE	GRADE
2001	**Physics (Thermodynamics, Mechanics, Simple Harmonic Motion, Electrostatics, Electricity, Magnetism, Alternating Current, Optics, Quantum Theory, Electronics)	53			
2001	**Practicals	78			
2001	**Environmental Science	82			
	UNIVERSITY OF CALCUTTA				
2002	Chemistry of Biomolecules, Biophysical Chemistry and Instrumentation, Principle of Biochemistry, Computer and Biostatistics	77			
2002	Cell Biology, Microbiology, Virology, Human Physiology and Immunology	82			
2002	Genetics, Molecular Genetics, Molecular Biology, Genetics & Chromosome Analysis	66			
2002	Practicals 1	91			
2002	Practicals 2	87			
2003	Bioprocess Engineering and Fermentation Technology, Microbial Biotechnology, Food and Energy Biotechnology, Enzyme Biotechnology	74			
2003	Biotechnology in Agriculture and Forestry, Plant Biotechnology, Environmental Biotechnology. Biodiversity-detection, molecular documentation and conservation	73			
2003	Animal Biotechnology, Genetics & Chromosome Engineering, Medical Biotechnology, Economics, Biosafety, Patent Rights	80			
2003	Practicals	95			
2003	Project Work, Seminar, Oral	86			
	YALE UNIVERSITY				
2004	Phys Chem with Biolog Science Apps	H			
2004	Macromolecular Structure	HP			
2004	Enzyme Mechanisms	H			
2005	Macromolecular Interactions	H			
2005	Methods & Logic in Molecular Biology	H			
2005	Adv Eukaryotic Molecular Biology	HP			
2007	Intro to Chemical Biology	Audit			

Explanation of grades:

University of Calcutta:

1) All grades are reported as percentage
2) All Chemistry courses were a part of the Major (Honors) subject
3) All major subject courses were averaged to a two step grading scheme: First division (≥60%, I obtained 71.6%), Second Division (≥40%), passing grade is 40%
4) All starred (**) subjects are considered Qualifying subjects. This means that only a passing grade of 30%

was required, and it would not reflect in the overall score.

Yale University:
1) Four step grading scheme: Honors (H), High Pass (HP), Pass (P), and Fail (F).
2) Requirement of a High Pass average, and at least 2 Honors to be admitted to candidacy