

**Anirban Banerjee**  
Max Plank Institute for Molecular Genetics  
Innestrasse 63-73, Berlin, Germany  
banerjee@molgen.mpg.de  
Ph: (+49) 30 8413 1165  
Fax: (+49)30 8413 1152

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Date of Birth: 26<sup>th</sup> of August 1978

Nationality: Indian

Current Educational Status: Post doctoral fellow in Max Plank Institute for Molecular Genetics, Germany (2007- ), working on a project funded by VolkswagenStiftung (Volkswagen research foundation).

Academic Profile:

- PhD (magna cum laude – with great honors), *Max Planck Institute for Mathematics in the Sciences*, Germany (Thesis submitted at *University of Leipzig*, Germany), the degree awarded on January 21, 2008.
- Advanced Diploma in Bioinformatics (First Class) from *University of Calcutta*, India, 2003.
- Master of Science in Mathematics (First Class) from *Indian Institute of Technology, Kharagpur*, India, 2002.
- Bachelor of Science (Honours Degree) in Mathematics (First Class) from *University of Burdwan*, India, 2000.

Awards and Achievements:

- “Fellowship”- in Advanced Diploma in Bioinformatics from Department of Biotechnology, Government of India
- “M.C.M. Scholarship”- in Master of Science.
- “National Scholarship”- in Bachelor of Science.
- Merit prize in “West Bengal Science Fair” & competed in “Eastern India Science Fair” in 1995 (conducted by BITM, NCSM, Government of India & State Government of Eastern India).
- In “Youth Parliament Competition” secured 2<sup>nd</sup> position at district level in 1994 & competed in State level in 1995 (conducted by State Government of West Bengal, India).
- “National Scholarship”-in Secondary School Examination.

School and Workshop Attended:

- Advanced Course on Complexity of Biological Networks; Epigenomics Project -- Genopole, Evry, France 2007.
- Complex Systems Summer School; SFI, Beijing, China 2006.
- School and Workshop on Structure and Function of Complex Network; ICTP, Trieste, Italy 2005.

Conference Attended:

- European Conference on Complex Systems; Jerusalem, 2008.
- European Conference on Complex Systems; Dresden, Germany 2007.
- Complex Networks: from Biology to Information Technology, Pula (Cagliari) Italy 2007.
- Phylogenetic Gathering; Max Plank Institute for Mathematics in the Sciences, Germany 2004.
- International Symposium on Frontiers of Basic & Applied Molecular Biology; University of Calcutta, India 2003.
- Mathematicians Conventions; Indian Institute of Technology, Kharagpur, India 2001.

- ICRAMS; Indian Institute of Technology, Kharagpur, India 2000.

### Talks:

- Talks on “Evolutionary relationship of the networks retraced by the structural distance computed from the graph Laplacian spectrum”, CMERI-Durgapur, India (8<sup>th</sup> March, 2010); on “Laplacian spectrum of graphs, structural distance, and evolutionary relationship of networks”, School of Technology and Computer Science, TIFR-Mumbai, India (26<sup>th</sup> February, 2010).
- “Structural distance of networks retraces the evolutionary relationship”, ECCS 2008, Jerusalem, (1<sup>st</sup> September, 2008).
- Several talks on “Laplacian spectra, graph structure and evolution” in India at: Maths. Dept., IIT-Kharagpur, Kharagpur, India, (13<sup>th</sup> February, 2008); Comp. Sc. Dept., IIT-Kharagpur, Kharagpur, India, (12<sup>th</sup> February, 2008); Dept. of Phys. and Astro-Phys., Univ. of Delhi, Delhi, India, (4<sup>th</sup> February, 2008); JNU, Delhi, India, (3<sup>rd</sup> February, 2008); IMSc, Chennai, India, (22<sup>nd</sup> January, 2008); Microsoft Research, India, (18<sup>th</sup> January, 2008); Maths. Dept., IISc, Bangalore, India, (17<sup>th</sup> January, 2008).
- “Spectral Plot Properties: Towards a qualitative classification of networks”, ECCS 2007, Dresden, Germany (2<sup>nd</sup> October, 2007).
- “Graph Spectra: A tool for analyzing networks”, Statphys 23, Pula (Cagliari) Italy (2<sup>nd</sup> July, 2007).
- “Graph Spectra: A tool for analyzing biological networks”, MPI for Molecular Genetics, Berlin, Germany (20<sup>th</sup> February 2007).
- “The evolution and dynamics of reaction networks”, ICB, Shanghai, China (10<sup>th</sup> August 2006).

### Publications:

- T. Manke, A. Banerjee, *Spectral theory reveals functional differences in the dynamical organization of regulatory networks*, Under preparation
- A. Banerjee, F. Bauer and J. Jost, *On the spectrum of the normalized Laplacian for directed graphs*, Preprint.
- A. Banerjee, F. Bauer and J. Jost, *Eigenvalues of normalized graph Laplacian and the architecture of directed networks*, Preprint.
- A. Banerjee, *Structural distance and evolutionary relationship of networks*, Submitted. E-print available: arXiv:0807.3185.
- A. Banerjee, J. Jost, *Laplacian spectrum and protein-protein interaction networks*, Preprint. E-print available: arXiv:0705.3373.
- A. Banerjee, J. Jost, *Graph spectra as a systematic tool in computational biology*, Discrete Applied Mathematics, 157(10), 2425-2431, (2009). E-print available: arXiv:0706.0113.
- A. Banerjee, J. Jost, *Spectral plot properties: Towards a qualitative classification of networks*, NHM, 3(2), 395-411, (2008).
- A. Banerjee, J. Jost, *On the spectrum of the normalized graph Laplacian*, Linear Algebra and its Applications, 428, 3015-3022, (2008). E-print available: arXiv:0705.3772.
- A. Banerjee, J. Jost, *Spectral plots and the representation and interpretation of biological data*, Theory in Biosciences, 126(1), 15-21, (2007). E-print available: arXiv:0706.1198.
- A. Banerjee, R. Braakman, J. Mar, S. Nostrati, *Evolution and dynamics of reaction networks*, 2006 Student Papers for the SFI/CAS Complex Systems Summer School 06. Beijing, China.

### Book Chapter:

- A. Banerjee, J. Jost, *Spectral characterization of network structures and dynamics*, in: N. Ganguly et al.(eds.), Dynamics On and Of Complex Networks; Modeling and Simulation in Science, Engineering and Technology, 117-132, Springer Birkhäuser Boston, (2009).