

# BANKURA UNIVERSITY



## FACULTY ACADEMIC PROFILE/ CURRICULUM VITAE

1. **Name:** SUDIP SAMANTA
2. **Designation:** ASSISTANT PROFESSOR
3. **Date of Birth :** 27/04/1986
4. **Specializations :** Mathematical Biology
5. **Contact Information:** Department of Mathematics,  
Bankura University  
Main Campus, Bankura Block-II  
P.O.- Purandarpur, Dist.- Bankura  
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### 6. **Academic qualifications:**

College/ University from which the degree was obtained	Abbreviation of the degree
Jadavpur University	B.Sc. (Mathematics Honours)
Jadavpur University	M.Sc. (Mathematics)
University of Calcutta (work done at Indian Statistical Institute, Kolkata)	Ph.D. (Applied Mathematics)

### 7. **Academic Experience:**

- Assistant Professor, Department of Mathematics, Faculty of Science and Arts- Rabigh, King Abdulaziz University, Saudi Arabia, 7<sup>th</sup> May, 2017 – 1<sup>st</sup> July, 2019
- Visiting Scientist, Indian Statistical Institute (ISI), Kolkata. **June-August, 2018**
- NBHM-Postdoctoral Research Fellow, Indian Statistical Institute. **May, 2015—May, 2017**
- Postdoctoral Research Fellow, University of Warsaw, Poland. **November, 2014 – April, 2015**
- Visiting Scientist, Indian Statistical Institute (ISI), Kolkata. **May-July, 2014.**

### 8. **Research Interests:**

- Mathematical Biology

- Ecological and Epidemiological Modelling
- Effect of Awareness Program in Epidemic Outbreak
- Chaos and Bifurcation Theory
- Delay Differential Equations

**9. Research Guidance / Supervision:**

Number of researchers pursuing Ph. D : 1

**10. Select list of publications:**

a) *Journals / Online Journals:*

1. **Samanta, S.**, Chakraborty, S., Bhattacharya, S., Chattopadhyay, J., (2011). Fish kairomones, its benefits and detriments: A model based study both from releaser and acceptor perspective. **Ecological Complexity**, 8(3): 258-264. (IF: 1.634; ISSN: 1476-945X)
2. **Samanta S.**, Chakraborty S., (2011). Effect of vertical migration of zooplankton on the stability of eutrophic ecosystems. **Bull. Cal. Math. Soc.**, 103(3): 247-254. (ISSN: 0008-0659)
3. **Samanta, S.**, Rana, S., Sharma, A., Misra, A. K., Chattopadhyay, J., (2013). Effect of awareness programs by media on the epidemic outbreaks: a mathematical model. **Applied Mathematics and Computation**, 219: 6965–6977. (IF: 2.3; ISSN: 0096-3003)
4. **Samanta, S.**, Dhar, R., Pal, J., Chattopadhyay, J., (2013). Effect of enrichment on plankton dynamics where phytoplankton can be infected from free viruses. **Nonlinear Studies**, 20(2): 225-238. (IF: 0.689; ISSN: 1359-8678)
5. **Samanta, S.**, Chowdhury, T., Chattopadhyay, J., (2013). Mathematical modeling on cascading migration in a tri-trophic food chain system. **Journal of Biological Physics**, 39(3): 469-487. (IF: 1.0; ISSN: 0092-0606)
6. **Samanta, S.**, Chattopadhyay, J., (2013). Effect of kairomone on predator-prey dynamics – a delay model. **International Journal of Biomathematics**, 6(5): 1350035-40. (IF: 0.89; ISSN: 1793-5245)
7. **Samanta, S.**, Mandal, A.K., Kundu, K. Chattopadhyay, J., (2014). Control of disease in prey population by supplying alternative food to predator. **Journal of Biological Systems**, 22(4): 1-14. (IF: 0.635; ISSN: 0218-3390)
8. Das, K.P., **Samanta, S.**, Biswas, B., Chattopadhyay, J., (2014). Chaos and its possible control in a predator-prey model with asymptotic disease transmission in the predator population. **The Journal of Ecology, Photon** 108: 306-319. (ISJN: 6853-3275)

9. Sil, N., Datta, A., **Samanta, S.**, Bhattacharya, S., Roy, P.K., (2014). Effect of Migration of Susceptible Prey and Predator in Eco-epidemiological System: A Mathematical Approach. **Mathematical Sciences International Research Journal**, 3(1): 447-451. (ISSN: 22788697)
10. **Samanta, S.**, Chattopadhyay, J., (2014). Effect of awareness program in disease outbreak- a slow-fast dynamics. **Applied Mathematics and Computation** 237: 98-109. (IF: 2.3; ISSN: 0096-3003)
11. Pal, N., **Samanta, S.**, Chattopadhyay, J., (2014). Revisited Hastings and Powell model with omnivory and predator switching. **Chaos, Solitons & Fractals**, 66: 58-73. (IF: 2.213; ISSN: 0960-0779)
12. Biswas, S., **Samanta, S.**, Chattopadhyay, J., (2015). A model based theoretical study on cannibalistic prey-predator system with disease in both populations. **Differential Equations and Dynamical Systems**, 23(3): 327-370. (IF: 0.8; ISSN: 0971-3514)
13. Rana, S., **Samanta, S.**, Bhattacharya, S., Al-Khaled, K., Goswami, A., Chattopadhyay, J., (2015). The effect of nanoparticles on plankton dynamics: A mathematical model. **Biosystems**, 127: 28–41. (IF: 1.619; ISSN: 0303-2647)
14. **Samanta, S.**, Alquran, M., Chattopadhyay, J., (2015). Existence and global stability of positive periodic solution of tri-trophic food chain with middle predator migratory in nature. **Applied Mathematical Modelling**, 39:4285-4299. (IF: 2.617; ISSN: 0307-904X)
15. Greenhalgh, D., Rana, S., **Samanta, S.**, Sardar, T. Bhattacharya, S., Chattopadhyay, J., (2015). Awareness programs control infectious disease multiple delay induced mathematical model. **Applied Mathematics and Computation**, 251: 539–563. (IF: 2.3; ISSN: 0096-3003)
16. Biswas, S., Sasmal, S.K., **Samanta, S.**, Saifuddin, Md., Chattopadhyay, J., (2015). A delayed Eco-epidemiological System with Infected Prey and Predator subject to the weak Allee effect. **Mathematical Biosciences**, 263:198-208. (IF: 1.5; ISSN: 0025-5564)
17. Pal, N., **Samanta, S.**, Biswas, S., Alquran, M., Al-Khaled, K., Chattopadhyay, J., (2015). Stability and bifurcation analysis of a three species food chain model with delay. **International Journal of Bifurcation and Chaos**, 25(9): 1550123 (21 pages). (IF: 1.519; ISSN: 0218-1274)
18. Pal, N., **Samanta, S.**, Chattopadhyay, J., (2015). The impact of diffusive migration on ecosystem stability. **Chaos, Solitons & Fractals**, 78:317-328. (IF: 2.213; ISSN: 0960-0779)
19. Biswas, S., **Samanta, S.**, Chattopadhyay, J., (2015). Cannibalistic prey-predator model with disease in predator - a delay model. **International Journal of Bifurcation and Chaos**, 25(10): 1550130 (31 pages). (IF: 1.519; ISSN: 0218-1274)
20. Chattopadhyay, J., Pal, N., **Samanta, S.**, Venturino, E., Khan, Q. J. A., (2015). Chaos control via feeding switching in an omnivory system. **Biosystems**, 138:18-24. (IF: 1.619; ISSN: 0303-2647)

21. Rana, S., **Samanta, S.**, Bhattacharya, S., (2016). The interplay of Allee effect in an ecoepidemiological system with disease in predator population. **Bulletin of Calcutta Mathematical Society**, 108 (2):103-122. (ISSN: 0008-0659)
22. Ghosh, K., **Samanta, S.**, Biswas, S., Rana, S., Elmojtaba, I.M., Kesh, D.K., Chattopadhyay, J., (2016). Stability and bifurcation analysis of an eco-epidemiological model with multiple delays. **Nonlinear Studies**, 23 (2):167-208. (IF: 0.689; ISSN: 1359-8678)
23. Biswas, S., Saifuddin, Md., Sasmal, S.K., **Samanta, S.**, Pal, N., Ababneh, F., Chattopadhyay, J., (2016). A delayed Prey-Predator system with prey subject to the strong Allee effect and disease. **Nonlinear Dynamics**, 84:1569–1594. (IF: 4.288; ISSN: 0924-090X)
24. Ghosh, K., Sardar, T., Biswas, S., **Samanta, S.**, Chattopadhyay, J., (2016). An ecoepidemiological model with periodic transmission. **Nonlinear Studies**, 23 (3): 345-363. (IF: 0.689; ISSN: 1359-8678)
25. **Samanta, S.**, Dhar, R., Elmojtaba, IM., Chattopadhyay, J., (2016). The role of additional food in a predator–prey model with a prey refuge. **Journal of Biological Systems**, 24(2-3): 345–365. (IF: 0.635; ISSN: 0218-3390)
26. Saifuddin, M., Biswas, S., **Samanta, S.**, Sarkar, S., Chattopadhyay, J., (2016). Complex dynamics of an eco-epidemiological model with different competition coefficients and weak Allee in the predator. **Chaos, Solitons & Fractals**, 91:270-285. (IF: 2.213; ISSN: 0960-0779)
27. **Samanta, S.\*\***, (2017). Effects of awareness program and delay in the epidemic outbreak. **Mathematical Methods in the Applied Sciences**. 40, 1679–1695 (IF: 1.027; ISSN: 1099-1476)
28. Das, KP., **Samanta, S.**, Biswas, S., Alshomrani, AS., Chattopshyay, J. (2017). A strategy for a disease-free system- an eco-epidemiological model based study. **Journal of Applied Mathematics and Computing**, 55 (1-2), 563–590 (IF: 0.685; ISSN: 1598-5865)
29. Biswas, S., Sasmal, SK., **Samanta, S.**, Saifuddin, M., Pal, N., Chattopadhyay, J. (2017). Optimal harvesting and complex dynamics in a delayed eco-epidemiological model with weak Allee effects. **Nonlinear Dynamics**, 87 (3), 1553-1573 (IF: 4.288; ISSN: 0924-090X)
30. Biswas, S., **Samanta, S.**, Khan, Q.J.A., Chattopadhyay, J. (2017) Effect of multiple delays on the dynamics of cannibalistic prey-predator system with disease in both populations. **International Journal of Biomathematics**, 10(3): 1750049 (IF: 0.89; ISSN: 1793-5245)
31. Pal, N., **Samanta, S.** and Rana, S. (2017) The Impact of Constant Immigration on a Tri-trophic Food Chain Model. **International Journal of Applied and Computational Mathematics**, 3 (4), 3615–3644 (ISSN 2199-5796)

32. Saifuddin, M., **Samanta, S.**, Biswas, S., Chattopadhyay, J., (2017) An Eco-epidemiological Model with Different Competition Coefficients and Strong-Allee in the Prey. **International Journal of Bifurcation and Chaos**, 27 (8), 1730027. (IF: 1.519; ISSN: 0218-1274)
33. Ghosh, K., Biswas, S., **Samanta, S.\*\***, Tiwari, P.K., Alshomrani, A.S., Chattopadhyay, J. (2017) Effect of multiple delays in an Eco-epidemiological model with strong Allee effect. **International Journal of Bifurcation and Chaos**, 27 (11), 1750167 (IF: 1.519; ISSN: 0218-1274)
34. **Samanta, S.**, Pal, N., Hossain, M., Pal, S. (2017) Adaptive synchronization of two chaotic ecosystems. **Journal of the Calcutta Mathematical Society**, 13 (2), 127-142
35. Biswas, S., **Samanta, S.**, Chattopadhyay, J. (2018) A cannibalistic eco-epidemiological model with disease in predator population. **Journal of Applied Mathematics and Computing**, 57 (1-2), 161-197 (IF: 0.685; ISSN: 1598-5865)
36. Panday, P., Pal, N., **Samanta, S.\*\***, Chattopadhyay, J. (2018) Stability and bifurcation analysis of a three-species food chain model with fear **International Journal of Bifurcation and Chaos**, 28 (1), 1850009 (20 pages) (IF: 1.519; ISSN: 0218-1274)
37. Pal, N., **Samanta, S.**, Martcheva, M., Chattopadhyay, J. (2018) Role of Bi-Directional Migration in Two Similar Types of Ecosystems. **Mathematics**, 6, 36. (IF: 1.05, ISSN-2227-7390)
38. Alzahrani, A.K., Alshomrani, A.S., Pal, N., **Samanta, S.\*\*** (2018) Study of an eco-epidemiological model with Z-type control, **Chaos, Solitons & Fractals**, 113, 197-208 (IF: 2.213; ISSN: 0960-0779)
39. Kundu, K., Pal, S., **Samanta, S.**, Pal, N. (2018) Impact of fear effect in a discrete-time predator-prey system, **Bull. Cal. Math. Soc.**, 110, (3) 245–264 (2018)
40. **Samanta, S.\*\*** (2018) Study of an epidemic model with Z-type control, **International Journal of Biomathematics**, 11 (6), 11850084 (21 pages) (IF: 0.89; ISSN: 1793-5245)
41. Nadim S.S., **Samanta S.**, Pal N., Elmojtaba I.M., Mukhopadhyay I., Chattopadhyay J. (2018) Impact of Predator Signals on the Stability of a Predator–Prey System: A Z-Control Approach, **Differential Equations and Dynamical Systems**. 2018:1-17. (IF: 0.8; ISSN: 0971-3514)
42. Kundu, K., **Samanta, S.**, Panday, P., Pal, N., Khan, Q. J. A., Chattopadhyay, J. (2018). Study of a symbiotic system with disease and delay. **Nonlinear Studies**, 25(3), 535-557. (IF: 0.689; ISSN: 1359-8678)
43. Ghosh, I., Tiwari, P. K., **Samanta, S.**, Elmojtaba, I. M., Al-Salti, N., Chattopadhyay, J. (2018). A simple SI-type model for HIV/AIDS with media and self-imposed psychological fear. **Mathematical Biosciences**, 306 160–169. (IF: 1.5; ISSN: 0025-5564)

44. Sha, A., **Samanta, S.**, Martcheva, M., & Chattopadhyay, J. (2019). Backward bifurcation, oscillations and chaos in an eco-epidemiological model with fear effect. **Journal of Biological Dynamics**, 13(1), 301-327. (IF: 1.119; ISSN: 17513766)
45. Tiwari, P.K., **Samanta, S.**, Bona, F., Venturino, E., Misra, A.K. (2019). The time delays influence on the dynamical complexity of algal blooms in the presence of bacteria. **Ecological Complexity**, 39, 100769. (IF: 1.634; ISSN: 1476-945X)
46. Mandal, D.S., **Samanta, S.**, Alzharani, A.K., Chattopadhyay, J., (2019). Study of a predator-prey model with pest management perspective. **Journal of Biological Systems**, 27(3), 1-28. (IF: 0.635; ISSN: 0218-3390)
47. Pal, S., Pal, N., **Samanta, S.**, Chattopadhyay, J. (2019) Fear effect in prey and hunting cooperation among predators in a Leslie-Gower model. **Mathematical Bioscience and Engineering** 16 (5), 5146–5179. (IF: 1.313; ISSN: 155-0018)
48. Panday, P., Pal, N., **Samanta, S.**, Chattopadhyay, J. (2019) A three species food chain model with fear induced trophic cascade. **International Journal of Applied and Computational Mathematics**, 5(4), 100. (ISSN 2199-5796)
49. Pal, S., Pal, N., **Samanta, S.**, Chattopadhyay, J. (2019) Effect of hunting and fear in a predator-prey model. **Ecological Complexity** 39, 100770. (IF: 1.634; ISSN: 1476-945X)
50. Tiwari, P.K. **Samanta, S.**, Ferreira, J.D., Misra, A.K. (2019). A mathematical model for the effects of nitrogen and phosphorus on algal blooms. **International Journal of Bifurcation and Chaos (In press)**. (IF: 1.519; ISSN: 0218-1274)

**(\*\* Correspondence author)**

b) **Books / book chapters / E-book:**

1. Pal, S. Hossain, M., **Samanta, S.**, Pal, N. (2018) Chaos Control in a Two Prey and One Predator System with Predator Switching, **Advanced Computational and Communication Paradigms** 706, 435-441 (Springer).

11. **Membership of Learned Societies:**

- Member of Bio-mathematical Society of India, Kolkata, India.
- Member of Calcutta Mathematical Society, Salt Lake, Kolkata, India.

12. **Fellowships:**

- Awarded **Fondecyt Postdoctoral Fellowship** in Biology (Govt. of Chile), 2014.
- Awarded Postdoctoral Fellowship in Mathematics under the **Erasmus Mundus Mobility**

- with Asia scholarship programme (EMMA-WEST 2013, 2nd cohort), 2014.**
- Awarded Postdoctoral Fellowship in Mathematics under the **Erasmus Mundus India To Europe (EMINTE) scholarship programme, 2014.**
  - Awarded **National Board of Higher Mathematics (NBHM) Postdoctoral Fellowship** in Mathematics, 2014.
  - Awarded **D.S. Kothari Postdoctoral Fellowship in** Mathematics, 2014.
  - Qualified as Junior Research Fellow/Lectureship in “Centre for Science & Industrial Research (CSIR) - National Eligibility Test (NET)”, June-2008.
  - Qualified Graduate Aptitude Test in Engineering (GATE), 2008.

**13. Papers presented in Conferences, Seminars, Workshops and Symposia:**

- Poster presentation: Does cross-predation create or eliminate chaos? in international Conference: “India Biodiversity meet-2015” held during November 16 – 18, 2015, Organized by Agricultural and Ecological Research Unit, Indian Statistical Institute, Kolkata in collaboration with Bio-mathematical Society of India.