Curriculum vitae

Dr. Pankaj Kumar Tiwari

Assistant Professor,
Department of Basic Science and
Humanities,
Indian Institute of Information Technology,
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Educational qualifications

- **Ph. D.**
  University : Banaras Hindu University, Varanasi, Uttar Pradesh, India in 2015

  Title of Thesis : Mathematical modeling and analysis of the control of water pollution and algal bloom in water bodies

  Thesis supervisor : Prof. Arvind Kumar Misra,
  Department of Mathematics, Institute of Science,
  Banaras Hindu University, Varanasi-221005, India

- **M. Sc. (Mathematics)**
  Passed from Banaras Hindu University, Varanasi, U.P., India in 2010 with CGPA 8.97/10

- **B. Sc. (Math-Hons)**
  Passed from Magadh University, Bodh Gaya, Bihar in 2008 with 73.5 %

- **Intermediate**
  Passed from B.I.E.C., Patna in 2004 with 62.7 %

- **High school**
  Passed from B.S.E.B., Patna in 2002 with 59.1 %

Research experience

- **Post-doctoral Fellow**: Agricultural and Ecological Research Unit, Indian Statistical Institute, Kolkata from July 01, 2015 to April 30, 2016

- **Post-doctoral Fellow**: Department of Mathematics, University of Turin, Italy from May 02, 2016 to July 28, 2016

- **Post-doctoral Fellow**: Agricultural and Ecological Research Unit, Indian Statistical Institute, Kolkata from August 01, 2016 to April 05, 2018

- **Post-doctoral Fellow**: Department of Mathematics, University of Kalyani, Kalyani from April 06, 2018 to January 05, 2021.

Teaching experience

- **Assistant Professor**: Department of Basic Science and Humanities, Indian Institute of Information Technology, Bhagalpur from January 07, 2021 to till date.

Administrative experience

- **Head of the Department of** Basic Science and Humanities, Indian Institute of Information Technology, Bhagalpur from July, 2022 to till date.

Awards

- Received D.S. Kothari Post-doctoral Fellowship, 2018
- Received travel grant to attend **"Ninth Workshop Dynamical Systems Applied to Biology and Natural Sciences"** held at Dipartimento di Matematica, Universita di Torino, Italy, 2018
- Project fellow of World Wide Style Second Edition, University of Turin, Italy, 2016
- Received NBHM Post Doctoral Fellowship, 2015
- Received fellowship under the CSIR-UGC Fellowship Scheme, 2010
- Qualified GATE, 2011
- Won third prize under the best paper award category in the **"International Conference on India Biodiversity Meet-2013"**
- Won the best paper award in **"Mathematical Analysis and Applications, ACMS-BHU, 2015"**

Computer skills

- Computational Software : MatLab, Maple, Mathematica
- Typesetting Software : Latex, Microsoft Office

Research interests

- Mathematical Modeling in Ecology/ Biology
- Disease dynamics, Epidemiology and Ecoepidemiology
- Marine plankton dynamics and biodiversity
- Spatial dynamics
- Models with stochasticity and seasonality

Published papers

1. J.B. Shukla, A. Goyal, **P.K. Tiwari**, A.K. Misra, Modeling the role of dissolved oxygen-dependent bacteria on biodegradation of organic pollutants, *International Journal of Biomathematics*, 7(1), 1450008(1-16), 2014.

2. A.K. Misra, **P.K. Tiwari**, A. Goyal, J.B. Shukla, Modeling and analysis of the depletion of organic pollutants by bacteria with explicit dependence on dissolved oxygen, *Natural Resource Modeling*, 27(2), 258-273, 2014.
3. **P.K. Tiwari**, S. Rana, A.K. Misra, J. Chattopadhyay, Effect of cross-diffusion on the patterns of algal bloom in a lake: a nonlinear analysis, *Nonlinear Studies*, 21(3), 443-462, 2014.
4. A.K. Misra, **P.K. Tiwari**, A model for the effect of density of human population on the depletion of dissolved oxygen in a water body, *Environment*, *Development and Sustainability*, 17, 623-640, 2015**.**
5. S. Chakraborty, **P.K. Tiwari**, A.K. Misra, J. Chattopadhyay, Spatial dynamics of a nutrient-phytoplankton system with toxic effect on phytoplankton, *Mathematical Biosciences*, 264, 94-100, 2015.
6. A.K. Misra, **P.K. Tiwari**, E. Venturino, Modeling the impact of awareness on the mitigation of algal bloom in a lake, *Journal of Biological Physics*, 42(1), 147-165, 2016.
7. E. Venturino, **P.K. Tiwari,** A.K. Misra, Modeling the depletion of dissolved oxygen in a water body located near a city, *Mathematical Methods in the Applied Sciences,* 40, 1081-1094, 2017.
8. S. Chakraborty, **P.K. Tiwari**, S.K. Sasmal, S. Biswas, S. Bhattacharya, J. Chattopadhyay, Interactive effects of prey refuge and additional food for predator in a diffusive prey-predator system, *Applied Mathematical Modelling*, 47, 128-140, 2017.
9. **P.K. Tiwari**, A.K. Misra, E. Venturino, The role of algae in agriculture: A mathematical study, *Journal of Biological Physics*, 43(2), 297-314, 2017.
10. S. Chakraborty, **P.K. Tiwari**, S.K. Sasmal, A.K. Misra, J. Chattopadhyay, Effects of fertilizers used in agricultural fields on algal bloom, *The European Physics Journal Special Topics*, 226(9), 2119-2133, 2017.
11. **P.K. Tiwari**, S.K. Sasmal, A. Sha, E. Venturino, J. Chattopadhyay, Effect of diseases on symbiotic systems, *BioSystems*, 159, 36-50, 2017.
12. **P.K. Tiwari**, I.M. Bulai, A.K. Misra, Ezio Venturino, Modeling the direct and indirect effects of pollutants on the survival of fish in water bodies, *Journal of Biological Systems*, 25(3), 521-543, 2017.
13. K. Ghosh, S. Biswas, S. Samanta, **P.K. Tiwari**, A.S. Alshomrani, J. Chattopadhyay, Effect of multiple delays in an eco-epidemiological model with strong Allee effect, *International Journal of Bifurcation and Chaos*, 27(11), 1750167(1-39), 2017.
14. I. Ghosh, **P.K. Tiwari**, S. Mandal, M. Martcheva, J. Chattopadhyay, A mathematical study to control Guinea Worm Disease: A case study on Chad, *Journal of Biological Dynamics*, 12(1), 846-871, 2018.
15. I. Ghosh, **P.K. Tiwari**, S. Samanta, I.M. Elmojtaba, N. Al-Salti, J. Chattopadhyay, A simple SI-type model for HIV/AIDS with media and self-imposed psychological fear, *Mathematical Biosciences*, 306, 160-169, 2018.
16. **P.K. Tiwari**, I.M. Bulai, F. Bona, E. Venturino, A.K. Misra, Human population effects on the Ulsoor lake fish survival, *Journal of Biological Systems*, 26(04), 603-632, 2018.
17. I. Ghosh, **P.K. Tiwari**, J. Chattopadhyay, Effect of active case finding on dengue control: Implications from a mathematical model, *Journal of Theoretical Biology*, 464, 50-62, 2019.

18. **P.K. Tiwari**, S. Samanta, J.D. Ferreira, A.K. Misra, A mathematical model for the effects of nitrogen and phosphorus on algal blooms, *International Journal of Bifurcation and Chaos*, 29(10), 1950129(1-30), 2019.
19. **P.K. Tiwari**, S. Samanta, F. Bona, E. Venturino, A.K. Misra, The time delays influence on the dynamical complexity of algal blooms in the presence of bacteria, *Ecological Complexity*, 39, 100769(1-18), 2019.
20. B. Maji, **P.K. Tiwari**, S. Samanta, S. Pal, F. Bona, Effect of time delay in a cannibalistic stage-structured predator-prey model with harvesting of an adult predator: The case of lionfish, *Journal of Biological Systems*, 27(04), 447-486, 2019.
21. S. Samanta, **P.K. Tiwari**, A.K. Alzahrani, A.S. Alshomrani, Chaos in a nonautonomous eco-epidemiological model with delay, *Applied Mathematical Modelling*, 79, 865-880, 2020.
22. S. Biswas, **P.K. Tiwari**, Y. Kang, S. Pal, Effects of zooplankton selectivity on phytoplankton in an ecosystem by free-viruses and environmental toxins, *Mathematical Biosciences and Engineering*, 17(2), 1272-1317, 2020.
23. S. Biswas, **P.K. Tiwari,** F. Bona, S. Pal, E. Venturino, Modeling the avoidance behavior of zooplankton on phytoplankton infected by free viruses, *Journal of Biological Physics*, 46(1), 1-31, 2020.
24. A. Mandal, **P.K. Tiwari,** S. Samanta, E. Venturino, S. Pal, A nonautonomous model for the effect of environmental toxins on plankton dynamics, *Nonlinear Dynamics*, 99(4), 3373-3405, 2020.
25. A.K. Misra, R.K. Singh, **P.K. Tiwari**, S. Khajanchi, Y. Kang, Dynamics of algae blooming: effects of budget allocation and time delay, *Nonlinear Dynamics*, 100, 1779-1807, 2020.
26. R.K. Rai, **P.K. Tiwari**, Y. Kang, A.K. Misra, Modelling the effect of literacy and social media advertisements on the dynamics of infectious diseases, *Mathematical Biosciences and Engineering*, 17(5), 5812-5848, 2020.
27. A. Sarkar, **P.K. Tiwari**, F. Bona, S. Pal, Chaos in a nonautonomous model for the interactions of prey and predator with effect of water level fluctuation, *Journal of Biological Systems*, 28(04), 865-900, 2020.
28. A.K. Misra, **P.K. Tiwari,** P. Chandra, Modeling the control of algal bloom in a lake by applying some external efforts with time delay, *Differential Equations and Dynamical Systems*, 29(3), 539-568, 2021.
29. **P.K. Tiwari**, R.K. Singh, S. Khajanchi, Y. Kang, A.K. Misra, A mathematical model to restore water quality in urban lakes using Phoslock, *Discrete and Continuous Dynamical Systems Series B*, 26(6), 3143-3175, 2021.
30. A.K. Srivastav, **P.K. Tiwari**, M. Ghosh, Modelling the impact of early case detection on dengue transmission: deterministic vs. stochastic, *Stochastics Analysis and Applications*, 39(3), 434-455, 2021.
31. A. Mandal, **P.K. Tiwari**, S. Pal, Impact of awareness on environmental toxins affecting plankton dynamics: a mathematical implication, *Journal of Applied Mathematics and Computing*, 66, 369-395, 2021.
32. N.K. Thakur, A. Ojha, **P.K. Tiwari,** R. Upadhyay, An investigation of delay induced stability transition in nutrient-plankton systems, *Chaos, Solitons and Fractals*, 142, 110474, 2021.
33. A.K. Srivastav, **P.K. Tiwari,** P.K. Srivastava, M. Ghosh, Y. Kang, A mathematical model for the impacts of face mask, hospitalization and quarantine on the dynamics of COVID-19 in India, *Mathematical Biosciences and Engineering*, 18(1), 182-213, 2021.

34. **P.K. Tiwari**, R.K. Rai, A.K. Misra, J. Chattopadhyay, Dynamics of infectious diseases: Local versus global awareness, *International Journal of Bifurcation and Chaos*, 31(7), 2150102, 2021.
35. **P.K. Tiwari,** K.A.N. Al Amri, S. Samanta, Q.J.A. Khan, J. Chattopadhyay, A systematic study of autonomous and nonautonomous predator-prey models with combined effects of fear, migration and switching, *Nonlinear Dynamics*, 103(2), 2125-2162, 2021.
36. N. Sk, **P.K. Tiwari,** Y. Kang, S. Pal, A nonautonomous model for the interactive effects of fear, refuge and additional food in a prey-predator system, *Journal of Biological Systems*, 29(01), 107-145, 2021.
37. A. Mandal, **P.K. Tiwari**, S. Pal, A nonautonomous model for the effects of refuge and additional food on the dynamics of phytoplankton-zooplankton system, *Ecological Complexity* 46, 100927, 2021.
38. **P.K. Tiwari**, R.K. Singh, D. Jana, Y. Kang, A.K. Misra, A nonautonomous mathematical model to assess the impact of algae on the abatement of atmospheric carbon dioxide, *International Journal of Biomathematics,* 14(07), 2150059, 2021.
39. S. Biswas, **P.K. Tiwari**, S. Pal, Delay-induced chaos and its possible control in a seasonally forced eco-epidemiological model with fear effect and predator switching, *Nonlinear Dynamics,* 104(3), 2901-2930, 2021.
40. F. Al Basir, **P.K. Tiwari**, S. Samanta, Effects of incubation and gestation periods in a prey-predator model with infection in prey, *Mathematics and Computers in Simulation,* 190, 449-473, 2021.
41. **P.K. Tiwari**, R.K. Rai, S. Khajanchi, R.K. Gupta, A.K. Misra, Dynamics of coronavirus pandemic: effects of community awareness and global information campaigns, *The European Physical Journal Plus,* 136, 994, 2021.
42. A.K. Misra, R.K. Rai, **P.K. Tiwari**, M. Martcheva, Delay in budget allocation for vaccination and awareness induces chaos in an infectious disease model, *Journal of Biological Dynamics,* 15(1), 395-429, 2021.
43. N. Sk, **P.K. Tiwari**, S. Pal, M. Martcheva, A delay nonautonomous model for the combined effects of fear, prey refuge and additional food for predator, *Journal of Biological Dynamics,* 15(1), 580-622, 2021.
44. **P.K. Tiwari**, M. Verma, S. Pal, Y. Kang, A.K. Misra, A delay nonautonomous predator-prey model for the effects of fear, refuge and hunting cooperation, *Journal of Biological Systems*, 29(04), 927-969, 2021.
45. M. Hossain, S. Pal, **P.K. Tiwari**, N. Pal, Bifurcations, chaos, and multistability in a nonautonomous predator-prey model with fear, *Chaos: An Interdisciplinary Journal of Nonlinear Science*, 31, 123134, 2021.
46. A. Sarkar, **P.K. Tiwari**, S. Pal, Effect of additional food on predator-prey interactions with water level fluctuation, *Journal of Biological Systems*, 29(04), 995-1022, 2021.
47. A. Tripathi, **P.K. Tiwari**, A.K. Misra, Y. Kang, Impacts of transpiration of agricultural crops and seeding on rainfall: Implications from a mathematical model, *International Journal of Biomathematics*, 15(05), 2250028, 2022.
48. S. Biswas, **P.K. Tiwari,** S. Pal, Effects of toxicity and zooplankton selectivity on plankton dynamics under seasonal patterns of viruses with time delay, *Mathematical Methods in the Applied Sciences,* 45(2), 585-617, 2022.
49. N. Sk, **P.K. Tiwari**, S. Pal, A delay nonautonomous model for the impacts of fear and refuge in a three species food chain model with hunting cooperation, *Mathematics and Computers in Simulation,* 192, 136-166, 2022.

50. R.K. Rai, S. Khajanchi, **P.K. Tiwari,** E. Venturino, A.K. Misra, Impact of social media advertisements on the transmission dynamics of COVID-19 pandemic in India, *Journal of Applied Mathematics and Computing,* 68, 19-24, 2022.
51. A. Sarkar, **P.K. Tiwari**, S. Pal, A delay nonautonomous model for the effects of fear and refuge on predator-prey interactions with water level fluctuations, *International Journal of Modeling Simulation and Scientific Computing*, 13(04), 2250033, 2022.
52. **P.K. Tiwari**, R.K. Rai, R.K. Gupta, M. Martcheva, A.K. Misra, Modeling the control of bacterial disease by social media advertisements: Effects of awareness and sanitation, *Journal of Biological Systems*, 30(01), 51-92, 2022.
53. **PK Tiwari**, S Roy, AK Misra, RK Upadhyay, Effect of seasonality on a nutrient-plankton system with toxicity in the presence of refuge and additional food, *The European Physical Journal Plus*, 137, 368, 2022.
54. M Majumder, **PK Tiwari**, S Pal, Impact of saturated treatments on HIV-TB dual epidemic as a consequence of COVID-19: Optimal control with awareness and treatment, *Nonlinear Dynamics*, 109, 143-176, 2022.
55. S.S. Maity, **P.K. Tiwari**, S. Pal, An ecoepidemic seasonally forced model for the combined effects of fear, additional foods and selective predation, *Journal of Biological Systems*, 30(02), 285-321, 2022.
56. S. Roy, **P.K. Tiwari**, H. Nayak, M. Martcheva, Effects of fear, refuge and hunting cooperation in a seasonally forced eco-epidemic model with selective predation, *The European Physical Journal Plus*, 137, 528, 2022.
57. B. Mondal, S. Roy, U. Ghosh, **P.K. Tiwari**, A systematic study of autonomous and nonautonomous predator-prey models for the combined effects of fear, refuge, cooperation and harvesting, *The European Physical Journal Plus* 137, 724, 2022.
58. M. Majumder, **P.K. Tiwari,** S. Pal, Impact of nonlinear infection rate on HIV/AIDS considering prevalence-dependent awareness, *Mathematical Methods in the Applied Sciences,* 46(4), 3821-3848, 2023.
59. R. Medda, **P.K. Tiwari**, S. Pal, Chaos in a nonautonomous model for the impact of media on disease outbreak, *International Journal of Modeling, Simulation, and Scientific Computing*, 2350020, 2023.
60. **P.K. Tiwari,** S. Roy, G. Douglas, A.K. Misra, An optimal control model for the impact of Phoslock on the mitigation of algal biomass in lakes, *Journal of Biological Systems,* 30(4), 945-984, 2022.
61. Q. Guo, Y. Wang, C. Dai, L. Wang, H. Liu, J. Li, **P.K. Tiwari**, M. Zhao, Dynamics of a stochastic nutrient-plankton model with regime switching, *Ecological Modelling* 477, 110249, 2023.
62. R. Kumbhakar, S. Pal, N. Pal, **P.K. Tiwari**, Bistability and tristability in a predator-prey model with strong Allee effect in prey, *Journal of Biological Systems*, 31(1), 215-243, 2023.
63. F.A, Basir, S. Samanta, **P.K. Tiwari**, Bistability, Generalized and zero Hopf bifurcations in a pest control model with farming awareness, *Journal of Biological Systems*, 31(1), 115-140, 2023.
64. D. Barman, S. Roy, **P.K. Tiwari**, S. Alam, Two fold impacts of fear in a seasonally forced predator-prey system with Cosner functional response, *Journal of Biological Systems*, DOI: 10.1142/S0218339023500183, 2023.
65. S. Khajanchi, J. Mondal, **P.K. Tiwari**, Optimal treatment strategies using dendritic cell vaccination for a tumor model with parameter identifiability, *Journal of Biological Systems*, DOI: 10.1142/S0218339023500171, 2023.

66. R.K. Rai, **P.K. Tiwari**, S. Khajanchi, Modeling the influence of vaccination coverage on the dynamics of COVID-19 pandemic with the effect of environmental contamination, *Mathematical Methods in the Applied Sciences*, DOI: 10.1002/mma.9185, 2023..
67. S.S. Maity, **P.K. Tiwari**, Z. Shuai, S. Pal, Role of space in an eco-epidemic predator-prey system with the effect of fear and selective predation, *Journal of Biological Systems*, Accepted.
68. R.K. Gupta, R.K. Rai, **P.K. Tiwari**, A.K. Misra, M Martcheva, A mathematical model for the impact of disinfectants on bacterial diseases, *Journal of Biological Dynamics*, Accepted.
69. F. Souna, **P.K. Tiwari**, M. Belabbas, Y. Menacer, A predator-prey system with prey social behavior and generalized Holling III functional response: Role of predator-taxis on spatial patterns, *Mathematical Methods in the Applied Sciences*, DOI: 10.1002/mma.9300, 2023.
70. P. Sen, S. Samanta, M.Y. Khan, S. Mandal, **P.K. Tiwari**, A seasonally forced eco-epidemic model with disease in predator and incubation delay, *Journal of Biological Systems*, Accepted.

Members in professional bodies

1. Life member of Indian Mathematical Society, India (2013-)
2. Life member of Biomathematical Society of India, Kolkata, India (2013-)
3. Life member of Indian Academy of Mathematical Modeling and Simulation, IIT Kanpur, India (2016-)

Workshops/Seminars/Conferences participated/paper presented

1. Participated in the **"Advanced Training Programme in Functional Analysis-2009"** held at DST-Centre for Interdisciplinary Mathematical Sciences, Banaras Hindu University, Varanasi during 21 June-3 July, 2010.

2. Presented a paper entitled **"Modeling the survival of fish population in eutrophied water bodies"** in **"13th International Conference of the International Academy of Physical Sciences"** held at UPES, Dehradun during 14-16 June, 2011.

3. Presented a paper entitled **"Modeling the depletion of dissolved oxygen due to aerobic bacteria in water bodies"** in **"National Conference of Mathematical Modelling and Computer Simulation"** held at Bhabha Group of Institutions, Kanpur (rural) during 7-9 July, 2011.

4. Participated in a **"National Workshop on Linear and Nonlinear Systems"** held at Banasthali Vidyapith, Banasthali during 15-19 December, 2011.

5. Participated in an **"International Workshop on Nonlinear Dynamics"** held at Bhabha Group of Institutions, Kanpur (rural) during 9-16 February, 2012.

6. Presented a paper entitled **"Modeling and analysis of depletion of organic pollutants due to bacteria with explicit dependence on dissolved oxygen"** in **"A National Conference on Mathematical Modelling and Computer Simulation with Applications"** held at Bhabha Group of Institutions, Kanpur (rural) during 17-19 February, 2012.

7. Participated in the **"Latex Training Programme"** held at DST-CIMS, Banaras Hindu University, Varanasi during 19-24 March, 2012.

8. Presented a paper entitled **"Modeling the control of algal bloom in a lake with two discrete time delays"** in **"National Meet of Research Scholars in Mathematical Sciences-2012"** held at Department of Mathematics and DST-CIMS, Faculty of Science, Banaras Hindu University, Varanasi during 18-22 November, 2012.

9. Participated and presented a paper entitled **"Modeling the control of algal bloom in a lake with two discrete time delays"** in **"National Workshop and Conference on Evolution Equations: Theory, Methods & Applications-2012"** held at Department of Mathematics and Statistics, Indian Institute of Technology, Kanpur during 2-8 December, 2012.

10. Presented a paper entitled **"Modeling the effect of human population on the depletion of dissolved oxygen in a water body"** in **"International Conference on India Biodiversity Meet-2013"** held at Indian Statistical Institute, Kolkata during 14-16 March, 2013 and got **Third Prize** under **Best Paper Award** category.

11. Presented a paper entitled **"Modeling the impact of awareness to mitigate algal bloom"** in **"International Conference on Mathematical Modeling and Numerical Simulation"** held at Department of Applied Mathematics, Babasaheb Bhimrao Ambedkar University, Lucknow during 01-03 July, 2013.

12. Participated and presented a paper entitled **"Modeling the impact of awareness on algal bloom"** in **"Advanced Workshop on Mathematical Epidemiology & Differential Equations -2013"** held at Indian Institute of Technology, Patna during 08-13 July, 2013.

13. Participated in **"S. P. Singh Memorial, Advanced Workshop on Partial Differential Equations: Analysis and Applications-2013"** held at DST-CIMS and Dept. of Mathematics, Faculty of Science, Banaras Hindu University, Varanasi during 22-31 July, 2013.

14. Presented a paper entitled **"Modeling the depletion of dissolved oxygen in a water body located near a city"** in **"International Conference on Mathematical Modeling and Computer Simulation with Application"** held at Department of Mathematics and Statistics, Indian Institute of Technology, Kanpur during 31 December, 2013-02 January, 2014.

15. Presented a paper entitled **"Modeling the impact of awareness on the mitigation of algal bloom in a lake"** in the **Best Paper Award** session of **"Recent Trends in Mathematical Modeling and Simulations, ACMS-BHU, 2014"** held at Department of Mathematics, Faculty of Science, Banaras Hindu University, Varanasi during 03-04 February, 2014.

16. Presented a paper entitled **"Modeling the impact of awareness on the mitigation of algal bloom in a lake"** in **"National Conference on Mathematical and Theoretical**

Biology" held at Department of Mathematics, Jadavpur University, Kolkata during 20-21 February, 2014.

17. Presented a paper entitled **"Modeling the effects of human population and industrialization on the depletion of dissolved oxygen in a water body"** in **"International Conference on Dynamical Systems and Mathematical Biology-2014"** held at Department of Mathematics, Jadavpur University, Kolkata during 17-19 November, 2014.

18. Presented a paper entitled **"Effect of self and cross-diffusion on the patterns of algae in lakes"** in **"International Conference on India Biodiversity Meet-2014"** held at Agricultural and Ecological Research Unit, Indian Statistical Institute, Kolkata during 21-23 November, 2014.

19. Presented a paper entitled **"Modeling the control of algal bloom in a lake by applying some external efforts with time delay"** in **"Mathematical Analysis and Applications, ACMS-BHU, 2015"** held at Department of Mathematics, Faculty of Science, Banaras Hindu University, Varanasi during 30-31 January, 2015 and won the **Best Paper Award.**

20. Participated in **"Lecture Programme on Mathematical Modeling and Bioinformatics"** held at Raj Kumar Goel Institute of Technology, Ghaziabad on 21 February, 2015.

21. Presented a poster entitled **"Modeling the impact of awareness on the mitigation of algal bloom in a lake"** in **"International Conference on Mathematical and Computational Biology"** held at Department of Mathematics & Statistics, Indian Institute of Technology, Kanpur during 28 February-3 March, 2015.

22. Delivered a talk entitled **"Modeling the effect of human population on the depletion of dissolved oxygen in a water body"** in **"National Workshop on Water Pollution"** held at SUIIT, Jyoti Bihar, Sambalpur during 14-16 March, 2015.

23. Participated in **"A Mini Workshop on Biomathematics"** held at DST-CIMS and Department of Mathematics, Faculty of Science, Banaras Hindu University, Varanasi during 28-30 March, 2015.

24. Participated in "**Workshop on Basic Statistical Methods and R-Programming"** held in Agricultural & Ecological Research Unit, Indian Statistical Institute, Kolkata, from 25-29 May, 2015.

25. Presented a paper entitled **"Modeling the impact of awareness on the mitigation of algal bloom in a lake"** in **"International Conference on India Biodiversity Meet-2015"** held at Indian Statistical Institute, Kolkata during 16-18 November, 2015.

26. Presented a paper entitled **"Modeling the control of algal bloom in a lake by applying some external efforts with time delay"** in **"National Conference on Mathematical and Theoretical Biology-2015"** held at Department of Mathematics, Jadavpur University, Kolkata during 19-20 November, 2015.

27. Presented a paper entitled **"Spatiotemporal dynamics of a predator-prey system with refuge in prey and alternative food for predator"** in **"International Conference on Mathematical Modeling, Differential Equations, Scientific Computing & Applications under IAMMS"** held at Department of Mathematics and Statistics, Indian Institute of Technology, Kanpur during 27-29 March, 2016.

28. Given two seminars at Department of Mathematics, University of Turin, Italy entitled "**Mathematical models for water pollution and algae control"** on May 19, 2016 and **"Interactive effects of prey refuge and additional food for predator in a diffusive predator-prey system"** on July 12, 2016.

29. Participated in **"National Program on Differential Equations: Theory, Computation & Applications"** held at DST – Centre for Interdisciplinary Mathematical Sciences and Department of Mathematics, Institute of Science, Banaras Hindu University, Varanasi during 24-29 August, 2016.

30. Presented a paper entitled **"Interactive effects of prey refuge and additional food for predator in a diffusive predator-prey system"** in **"International Conference on Mathematical Modeling & Simulation"** held at Department of Mathematics, Institute of Science, Banaras Hindu University, Varanasi during 29-31 August, 2016.

31. Participated in the **"Workshop on Ecological & Environmental Modeling"** held at GCETT, Berhampore on 25 October, 2016.

32. Presented a paper entitled **"Interactive effects of prey refuge and additional food for predator in a diffusive predator-prey system"** in the **"National Conference of 4th India Biodiversity Meet-2016"** held at Indian Statistical Institute, Kolkata and Government College of Engineering and Textile Technology, Berhampore during 24-27 October, 2016.

33. Presented a paper entitled **"Modeling the effect of awareness among farmers on the mitigation of algal bloom in lakes"** in **"National Seminar on Recent Advances in Computational Mathematics"** held at Department of Applied Mathematics, University of Calcutta, Kolkata during 27-29 December, 2016.

34. Presented a paper entitled **"Interactive effects of prey refuge and additional food for predator in a diffusive predator-prey system"** in **"National Conference on Mathematical and Theoretical Biology"** held at Department of Mathematics, Jadavpur University, Kolkata during 16-17 March, 2017.

35. Presented a paper entitled **"Effect of fertilizers used in agriculture on the algal blooms"** in **"6th China India Japan Korea Mathematical Biology Colloquium Cum Conference"** held at Department of Mathematics & Statistics, Indian Institute of Technology, Kanpur during 23-26 August, 2017.

36. Presented a paper entitled **"Interactive effects of prey refuge and additional food for predator in a diffusive predator-prey system"** in **"Ninth Workshop Dynamical Systems**

Applied to Biology and Natural Sciences" held at Dipartimento di Matematica, Universita di Torino, Italy during 7-9 February, 2018.

Invited talk

1. Delivered invited talk on **"Interactive effects of prey refuge and additional food for predator in a diffusive prey-predator system"** in the "**Mathematical Perspective of Epidemic Outbreak Special Focus on COVID-19"** at Indian Institute of Information Technology Bhagalpur during 18-22 March, 2021.

2. Delivered invited talk on *"***Impact of social media advertisements on the transmission dynamics of COVID-19 pandemic in India***"* in the "***Mathematics and Its Application in Science & Engineering***" organised by Shri Mata Vaishno Devi University during 27th September–01st October, 2021.

Conferences/Workshops organized

1. Organized an online faculty development programme on "**Mathematical Perspective of Epidemic Outbreak Special Focus on COVID-19"** at Indian Institute of Information Technology Bhagalpur during 18-22 March, 2021.

Courses taught in UG/PG level

1. Engineering Mathematics-I
2. Engineering Mathematics-II
3. Engineering Mathematics-III

Ph.D. supervised

1. Mr. Subarna Roy (Ongoing)
2. Mr. Sayan Mandal (Ongoing)
3. Mr. Kalyan Pal (Ongoing)

Internship supervised

4. Mr. Rahul Tiwari (5th May to 5th July 2021)
5. Mr. Sudhanshu Ranjan (5th May to 5th July 2021)

Personal details

Name	: Dr. Pankaj Kumar Tiwari
Gender	: Male
Marital Status	: Married
Father's Name	: Lakshmeshwar Tiwari
Mother's Name	: Munni Devi

Date of Birth	:	22nd March, 1986
Category	:	General
Nationality	:	Indian
Permanent Address	:	Vill - Sikatiya, Post – Khawaspur, Via – Kishunpura, Dist - Siwan, Bihar – 841416, India

References

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Declaration

I hereby affirm that the information provided above is true and accurate.