STAFF HANDBOOK

Name	*Fajar Adi Kusumo, Dr.*		
Post	*Dynamical Systems, Mathematical Modelling in Medical and Biology*		
Academic career	*Initial academic appointment*	*Universitas Gadjah Mada*	*2000 -*
	Habilitation [German post-doctoral qualification] (subject)	*-*	
	Doctorate (Dynamical Systems)	*Institut Teknologi Bandung, Indonesia.*	*2008*
	Master Degree	*Institut Teknologi Bandung, Indonesia*	*2002*
	Undergraduate degree (subject)	*Universitas Gadjah Mada, Indonesia*	*1999*
Employment	*Position*	*Associate Professor*	*2019 - now*
Research and development projects over the last 5 years	*Name of project or research focus:* - *Mathematical Modelling for Cancer Prognosis* *Period and any other information:* - *2017 - 2023* *Partners, if applicable:* - *Faculty of Medicine, Public Health, and Nursing, Universitas Gadjah Mada, Indonesia.* - *Dept of Applied Mathematics, Faculty of Electrical Engineering, Mathematics, and Computer Sciences, Delft University of Technology, Netherlands.* *Amount of financing (in total 2017 - 2023):* - *IDR 1,000,000,000*		
Industry collaborations over the last 5 years	*Project title -* *Partners -*		
Patents and proprietary rights	*Title -*	*Year -*	

Important publications over the last 5 years	*Selected recent publications from a total of approx.*
	(give total number - 18)

1. Wiraya, A., Adi-Kusumo, F., Torus and Homoclinic Bifurcations on a Cells Repair Regulations Model of the Metastatic Nasopharyngeal Carcinoma, *Journal of Nonlinear Science*, (2023), 33:60.

2. Mahardhika, L. S. P., Adi-Kusumo, F., Ertiningsih, D., Bifurcation analysis of a mathematical model of microalgae growth under the influence of sunlight, *Biomath*, 12, (2023), 2301307.

3. Lestari, D., Adi-Kusumo, F., Megawati, N. Y., Susyanto, N., A minimum principle for stochastic control of hepatitis C epidemic model, *Boundary Value Problems*, 2023:52, (2023), 12 pages.

4. Fathoni, I. A., Gunardi, Adi-Kusumo. F., Hutajulu, S. H., and Purwanto, I., Critical Illness Insurance Model for Breast Cancer Patients Based on Chemotherapy Responses, *Universal Journal of Public Health*, Vol.10(5), (2022), pp. 547-553.

5. Fathoni, I. A., Gunardi, Adi-Kusumo. F., Hutajulu, S. H., and Purwanto, I., Cox Proportional Hazard Regression Interaction Model and Its Application to Determine The Risk of Death in Breast Cancer Patients after Chemotherapy, *International Journal of Statistics in Medical Research*, 11 (2022), 105-113.

6. Akimenko, V. V., Adi-Kusumo, F., Age-structured Delayed SIPCV Epidemic Model of HPV and Cervical Cancer Cells Dynamics II. Convergence of Numerical Solution, *Biomath* 11 (1), (2022), ID: 2203278-ID: 2203278

7. Binatari, N., Adi-Kusumo, F., Aryati, L., Stability Regions and Bifurcation Analysis of a Delayed Predator-Prey Model Caused from Gestation Period, *International Journal of Differential Equations*, Volume 2022, Article ID 3711158, 10 pages

8. Sari, E. R., Adi-Kusumo, F., Aryati, L., Mathematical analysis of a SIPC age-structured model of cervical cancer, *Mathematical Biosciences and Engineering* 19 (6), (2022) 6013-6039

9. Fathoni, M. I. A., Gunardi, Adi-Kusumo, F., Hutajulu, S., H., Purwanto, I., Characteristics of breast cancer patients at dr. Sardjito Hospital for early anticipation of neutropenia: Cross-sectional study, *Annals of Medicine and Surgery*, 73 (2022) 103189.

10. Lestari, D., Megawati, N. Y., Susyanto, N., Adi-Kusumo, F., Qualitative behaviour of a stochastic hepatitis C epidemic model in cellular level, *Mathematical Biosciences and Engineering* 19 (2), (2022) 1515-1535.

11. Fathoni, M. I. A., Adi-Kusumo, F., Gunardi, Hutajulu, S. H., Dynamics of a Breast Cancer Model for Neutropenia Case due to Chemotherapy Effects,

International Journal of Differential Equations, Volume 2021, Article ID 3401639, 8 pages

12. Suddin, S., Adi-Kusumo, F., Aryati, L., Reaction-Diffusion on a Spatial Mathematical Model of Cancer Immunotherapy with Effector Cells and IL-2 Compounds' Interactions, *International Journal of Differential Equations*, Volume 2021, Article ID 5535447, 10 pages

13. Akimenko, V. V., Adi-Kusumo, F., Age-structured delayed SIPCV epidemic model of HPV and cervical cancer cells dynamics I. Numerical method, *Biomath,*10(2), (2021), 2110027

14. Akimenko, V. V., Adi-Kusumo, F., Stability Analysis of an Age-Structured Model of Cervical Cancer Cells and HPV Dynamics, *Mathematical Biosciences and Engineering*, (2021), 18(5):6155-6177

15. Fathoni, M. I. A., Gunardi, Adi-Kusumo, F., Hutajulu, S. H., Survival analysis of breast cancer patients in Yogyakarta, *Journal of Physics: Conference Series*, Vol 1722 (1), (2021), 012060

16. Baihaqi, M. A., Adi-Kusumo, F., (2020), Modelling malaria transmission in a population with $SEIRS_P$ method, *AIP Conference Proceedings*, Vol 2264, (2020), 020002

17. Adi, Y. A., Aryati, L., Adi-Kusumo, F., Hardianti, M. S., Analysis of a mathematical model of the interaction between PIP3, AKT, and FOXO3a in Acute Myeloid Leukemia, *IAENG International Journal of Applied Mathematics*, Vol 50 (1), (2020), Pages 183-192

18. Adi-Kusumo, F., Aryati, L., Risdayati, S., Norhidayah, S., , Hopf Bifurcation on a Cancer Therapy Model by Oncolytic Virus Involving the Malignancy Effect and Therapeutic Efficacy**,** *International Journal of Mathematics and Mathematical Sciences*, Vol 2020, (2020), 4730715

19. Mayang Fati Kusuma, and Fajar Adi-Kusumo, (2019), A mathematical modelling for estradiol influence on DNA damage response and G1/S transition phase regulations in early stage of breast cancer, *AIP Conference Proceedings* 2192, 060012

20. Ken Prameswari and Fajar Adi-Kusumo, A mathematical model for phase transition regulation on the cell cycle in early stage of breast cancer, *AIP Conference Proceedings* 2192, 060014.

21. Yudi Ari Adi, Fajar Adi-Kusumo, Lina Aryati, Mardiah S. Hardianti, A Dynamic Model of PI3K/AKT Pathways in Acute Myeloid Leukemia, *Journal of Applied Mathematics* (2018), 2983138, 9 pages; doi:10.1155/2018/2983138

22. Lina Aryati, Tri Sri Noor Asih, Fajar Adi- Kusumo, Mardiah Suci Hardianti, Global Stability of the Disease Free Equilibrium in A Cervical Cancer Model: A Chance to Recover, *Far East Journal of Mathematical Sciences* (2018), Vol 103, Number 10, 1535-1546; doi:10.17654/MS103101535

	23. F. Adi-Kusumo, The Dynamics of a SEIR-SIRC Antigenic Drift Influenza Model, *Bull Math Biol* (2017). doi:10.1007/s1 1538-017- 0290-5		
Activities in specialist bodies over the last 5 years	*Organisation* *Indonesian Mathematical Society (IndoMS)* *Asia Oceania Geosciences Society (AOGS)* *Membership without a specific role need not be mentioned*	*Role* *Vice President* *Regional Advisory Committee*	*Period* *2020 – 2022* *2020 - 2022*