



UNIVERSITAS INDONESIA

Faculty of Mathematics and Natural Sciences

Department of Mathematics

Building D, Kampus UI Depok 16424, Telp: 021 - 7863439,

Email: sekretariat.math@sci.ui.ac.id, website: <https://www.math.ui.ac.id/>

STAFF HANDBOOK

Name	Bevina Desjwiandra Handari Ph.D.		
Expertise	Mathematical epidemiology, Computational Mathematics		
Academic career		Institution	Year
	Undergraduate degree	Universitas Indonesia	1981-1986
	Master degree	Michigan State University	1989-1991
	Doctoral degree	University of Queensland	1998-2002
	Post-doctoral		
Employment	Position	Employer	Period
	Lecturer	Universitas Indonesia	1987-1995
	Assistant Professor	Universitas Indonesia	1995-now
Research and development projects over the last 5 years	<ol style="list-style-type: none"> 1. Indonesian RistekBRIN with PUPT research grant scheme, "Vector-borne Disease in Indonesia: A mathematical model approach to understand how far we can relies on vector control intervention" Period: 2021-2022 Partner: Dr. Dipo Aldila (member) and Dr. Hengki Tasman (member) Amount of financing: IDR. 132.000.000,- 2. Indonesian RistekBRIN with PUPT research grant scheme, "Understanding transmission path of COVID-19 considering medical source limitation through a mathematical model", Period: 2020-2022 Partner: Dr. Dipo Aldila (PI) and Dr. Hengki Tasman (member) Amount of financing: IDR. 396.000.000,- 3. Indonesian RistekBRIN with PUPT research grant scheme, "Mathematical approaches in conservation efforts to balance the ecological systems" ("Pendekatan Matematika dalam upaya konservasi untuk keseimbangan system ekologi"), Period: 2020-2022 Partner: Dr. Dipo Aldila (PI) and Dr. Hengki Tasman (member) Amount of financing: IDR. 184.600.000,- 4. Universitas Indonesia with PUTI Q4 research grant scheme, "Analyzing the impact of quarantine intervention in a novel Covid-19 Coronavirus transmission", Period: 2020 Partner: Dr. Dipo Aldila (PI) Amount of financing: IDR. 17.500.000,- 5. Indonesian RistekBRIN with Thesis for magister research grant scheme, "Coinfection analysis between measles and pneumonia with intervention of gradual vaccination" ("Analisa Koinfeksi 		

	<p>penyakit Measles dan Pneumonia dengan intervensi vaksinasi bertahap") Period: 2020 Partner: Dr. Dipo Aldila (PI) Amount of financing: IDR. 40.000.000,-</p> <p>6. Universitas Indonesia with PUTI research grant scheme, "Implementation of Restricted Boltzman Machine- Feedforward Neural Network with Metaheuristics to Predict Dengue Hemorrhagic Fever incidents in DKI Jakarta" ("Implementasi <i>Restricted Boltzman Machine- Feedforward Neural Network</i> dengan Metaheuristik untuk Prediksi Insiden Demam Berdarah Dengue di DKI Jakarta") Period: 2020 Partner: Gatot F. Hertono Ph.D (member) and Devvi Sarwinda M.Sc (member) Amount of financing: IDR. 90.000.000,-</p> <p>7. Universitas Indonesia with PUTI research grant scheme, "Comparing modifications of recurrent Neural Network models in predicting Dengue Hemorrhagic Fever Incidents in DKI Jakarta" ("Komparasi beberapa Modifikasi Model Recurrent Neural Netwaork dalam memprediksi Insiden Demam Berdarah Dengue di DKI Jakarta") Period: 2020 Partner: Gatot F. Hertono Ph.D (member) Amount of financing: IDR. 50.000.000,-</p> <p>8. Universitas Indonesia with QQ research grant scheme, "Bifurcation and chaos phenomena analysis on a mathematical biology models" ("Analisis Bifurkasi dan Fenomena Chaos Pada Model-Model Matematika Biologi") Period: 2019 Partner: Dr. Dipo Aldila (PI) and Dr. Hengki Tasman (member) Amount of financing: IDR. 250.000.000,-</p> <p>9. Universitas Indonesia with PUTI research grant scheme, "Dynamical analysis analytically and numerically on the models of interacting species) ("Analisa Dinamik Secara Analitik Dan Numerik Pada Model-Model Matematika Interaksi Spesies") Period: 2019 Partner: Dr. Dipo Aldila (PI) Amount of financing: IDR. 90.000.000,-</p> <p>10. Universitas Indonesia with PUTI research grant scheme, "A mathematical models for qualitative and quantitative analysis on an effort for eradication and endemic reduction of contagious diseases" ("Model-Model Matematika Untuk Analisa Kualitatif dan Kuantitatif Pada Upaya Pencegahan dan Penanggulangan Penyebaran Penyakit Menular") Period: 2019 Partner: Dr. Dipo Aldila (member) ang Gatot F. Hertono Ph.D (member) Amount of financing: IDR. 90.000.000,-</p> <p>11. Universitas Indonesia with PITTA research grant scheme, "An optimal control problem on Human Immunodeficiency virus</p>
--	---

	<p>spread with a deterministic model approach" ("Masalah Kontrol Optimum Pada Model Penyebaran Penyakit Human Immunodeficiency Virus Dengan Pendekatan Model Deterministik"), Period: 2018 Partner: Dr. Dipo Aldila (member) Amount of financing: IDR. 81.000.000,-</p> <p>12. Universitas Indonesia with PITTA research grant scheme, "Implementation of Clustering and Heuristic Methods in Portfolio Optimization with Constraints" ("Implementasi Metode Clustering dan Heuristik dalam Masalah Optimasi Portofolio dengan Kendala"), Period: 2018 Partner: Gatot F. Hertono Ph.D (PI) Amount of financing: IDR. 81.000.000,-</p> <p>13. Indonesian Research and Higher Education Ministry (Kemenristekdikti) with PDUPT research grant scheme, "Deterministic and stochastic approach to understand the complexity of disease spreads", Period: 2018 – 2020 Partner: Dr. Dipo Aldila (member) and Dr. Hengki Tasman (member) Amount of financing: IDR. 525.772.000,-</p> <p>14. Universitas Indonesia with PITTA research grant scheme, "A mathematical model approach to understand the complexity of eradication of contagious diseases" ("Pendekatan Model Matematika Dalam Memahami Kompleksitas Penanggulangan Penyebaran Penyakit Menular"), Period: 2017 Partner: Dr. Dipo Aldila (PI) and Maulana Malik, S.Si., M.Si. (member) Amount of financing: IDR. 90.000.000,-</p> <p>15. Indonesian Research and Higher Education Ministry (Kemenristekdikti) with PDUPT research grant scheme, "Prevention and endemic reduction model analysis of dengue disease in a complex network" ("Kajian Model Pencegahan dan Penanggulangan Penyebaran Penyakit Menular Dalam Complex Network"), Period: 2017 – 2019 Partner: Dr. Hengki Tasman (member) and Dr. Dipo Aldila (member) Amount of financing: IDR. 465.545.100,-</p> <p>16. Indonesian Research and Higher Education Ministry (Kemenristekdikti) with PDUPT research grant scheme, "Identification and analysis on the impact human mobility on the success of eradication of airborne diseases" ("Identifikasi dan analisis pengaruh mobilitas manusia pada kesuksesan penanggulangan penyebaran airborne diseases"), Period: 2016 – 2018, Partner: Dr. Hengki Tasman (PI) and Dr. Dipo Aldila (member), Amount of financing: IDR. 383.560.000,-</p>
--	---

	<p>17. Universitas Indonesia with PITTA research grant scheme, "Implementation of Heuristic Methods in finance" ("Implementasi Metode Heuristik di Bidang Keuangan"), Period: 2017 Partner: Gatot F. Hertono (member) Amount of financing: IDR. 75.000.000,-</p>	
Industry collaborations over the last 5 years	<p>1. Project title: "Pemanfaatan GeoGebra Dalam Pembelajaran Matematika – Seri 1" 31 Januari 2021 Partners: Departmen Matematika FMIPA UI</p>	
Patents and proprietary rights	Title	Year
	-	
Important publications over the last 5 years	<p style="text-align: center;">Selected recent publications</p> <ol style="list-style-type: none"> 1. D. Aldila, N.Azizah, B.D.Handari, Optimal control problem arises from illegal poaching of southern white rhino mathematical model, <i>Advances in Difference Equations</i>, 2020:605, 2020. 2. D. Aldila, B.D.Handari, Widyah, A., Hartanti, G., Strategies of optimal control for hiv spreads prevention with health campaign, <i>Communications in Mathematical Biology and Neuroscience</i> 2020, 7 , 2020 3. B.D.Handari, A. Amalia, S.R. Arsal, D. Aldila, Numerical simulation of malaria transmission model considering secondary infection, <i>Communications in Mathematical Biology and Neuroscience</i>, 2020, pp. 1–24, 36, 2020. 4. B.D.Handari, F. Vitra, R. Ahya, S.T. Nadya, D. Aldila, Optimal control in a malaria model: intervention of fumigation and bed nets, <i>Advances in Difference Equations</i> 2019(1),497, 2019. 5. Delavani, D. Aldila, B.D.Handari, Effect of Healthy Life Campaigns on Controlling Obesity Transmission: A Mathematical Study, <i>Journal of Physics: Conference Series</i>, 1747(1), 012003, 2021. 6. M. Fatimah, D. Aldila, B.D.Handari, Backward bifurcation arises from the smoking transmission model considering media campaign, <i>Journal of Physics: Conference Series</i>, 1722(1), 012004, 2021. 7. S. Kompas, D. Aldila, B.D.Handari, Modelling the spread of diabetes transmission through social contact, <i>AIP Conference Proceedings</i>, 2296, 020098, 2020. 8. N.P. Pratiwi, D. Aldila, B.D.Handari, G.M. Simorangkir, A mathematical model to control mosaic disease of <i>Jatropha curcas</i> with insecticide and nutrition intervention, <i>AIP Conference Proceedings</i>, 2296, 020096, 2020. 9. S.R. Arsal, D. Aldila, B.D.Handari, Short review of mathematical model of measles, <i>AIP Conference Proceedings</i>, 2020, 2264, 020003. 10. A. Rizal, B.D.Handari, D. Aldila, S.A. Rahmayani, Mathematical models for the dynamics of the HIV with antiretroviral treatment interventions and the effect of apoptosis on T-cells, <i>AIP Conference Proceedings</i>, 2020, 2264, 020008. 11. B.S. Aji, D. Aldila, B.D.Handari, Modeling the impact of limited treatment resources in the success of typhoid intervention, <i>AIP Conference Proceedings</i>, 2019, 2202, 020040. 	

	<p>12. D. Setyorini, B.D.Handari, D. Aldila, Numerical analysis of the impact of loss-sight and undetected cases in the spread of TB, AIP Conference Proceedings, 2019, 2084, 020019.</p> <p>13. Dzakwan, I.G., Hertono, G.F., Aldila, D., B.D.Handari, Level alert classification of dengue hemorrhagic fever cases in DKI Jakarta with the implementation of the random forest algorithm, Journal of Physics: Conference Series, 2021, 1821(1),012027</p> <p>14. Muhammad, F., Hertono, G.F., B.D.Handari., Comparison of activation functions on radial basis function neural network in predicting dengue hemorrhagic fever incidents in DKI Jakarta, AIP Conference Proceedings, 2021, 2296,020017</p> <p>15. Lukman, P.C., B.D.Handari., Tasman, H., Study on European put option pricing with underlying asset zero-coupon bond and interest rate following the Vasicek model with jump, Journal of Physics: Conference Series, 2021, 1725(1),012092</p> <p>16. Heryanto, F., B.D.Handari., Hertono, G.F., Trading financial assets with actor critic using Kronecker-factored trust region (ACKTR), AIP Conference Proceedings, 2020, 2242,030001</p> <p>17. Dinandra, R.S., Hertono, G.F., B.D.Handari., Implementation of density-based spatial clustering of application with noise and genetic algorithm in portfolio optimization with constraint, AIP Conference Proceedings, 2019, 2168,020026</p> <p>18. Yusuf, R., B.D.Handari., Hertono, G.F., Implementation of agglomerative clustering and genetic algorithm on stock portfolio optimization with possibilistic constraints, AIP Conference Proceedings, 2019, 2168,020028</p> <p>19. Steven, A., Hertono, G.F., B.D.Handari., Clustered stocks weighting with ant colony optimization in portfolio optimization, AIP Conference Proceedings, 2018, 2023,020204</p> <p>20. Ramadhani, T., Hertono, G.F., B.D.Handari., An Ant Colony Optimization algorithm for solving the fixed destination multi-depot multiple traveling salesman problem with non-random parameters, AIP Conference Proceedings, 2017, 1862,030123</p>		
Scholar UI ID	https://scholar.ui.ac.id/en/persons/bevina-desjwiandra-handari		
Activities in specialist bodies over the last 5 years	Organization	Role	Period
	-		