

CURRICULUM VITAE

Name: Joel M. Addawe
Office: Department of Mathematics and Computer Science
University of the Philippines Baguio
Gov. Pack Rd., Baguio City 2600, Philippines

Contact Information:
Telephone and Fax: (+6374) 444-3888
(+6374) 442-7231
Email: joel.addawe@gmail.com, jmaddawe@up.edu.ph

Personal Information:
Date of Birth: September 8, 1967
Place of Birth: Tabuk, Kalinga Apayao
Nationality: Filipino
Status: Married
Spouse: Rizavel C. Addawe

Academic Background:
Ph.D. in Mathematics University of the Philippines (2012)
M.S. in Applied Mathematics(Computer Science) University of the Philippines (1995)
B.S. in Mathematics University of the Philippines (1989)
H.S. diploma Philippine Science High School (1985)

Professional Membership:
The Philippine-American Academy of Science and Engineering (PAASE)
Society for Industrial and Applied Mathematics (SIAM)
Institute of Electrical and Electronics Engineers (IEEE)
Association for Computing Machinery (ACM)
Mathematical Society of the Philippines (MSP)
Computing Society of the Philippines (CSP)

Honors:
Keynote Speaker: “The 5th International Conference on Qualitative Sciences and Its Applications (ICOQSA)”. August 7-9, 2018, De Baron Hotel, Langkawi Island, Malaysia.
Plenary Speaker: “ International Conference on Mathematical and Computational Modeling of Biological Systems”. November 30-December 2, 2016, Manila Philippines

Current UP Administrative Positions:
Member: Department Academic Personnel Committee
Vice-Chair: Bids and Awards Committee

Research Interests:
Mathematical Modeling and Simulations, Numerical Computing, Evolutionary Optimizations

Theses:
Addawe, J. (2012). *Analysis of Age-Structured Malaria Transmission Model*, Doctoral Dissertation, University of the Philippines Diliman.

Addawe, J. (1995). *Alternative Scientific Visualizations of the Steady-State Couette-Taylor Flow*. Masters thesis. University of the Philippines Diliman.

Refereed Publications:

Libatique, CP, Pajimola, AKP and **Addawe, JM.** (2017). *Bifurcation analysis of dengue transmission model in Baguio City, Philippines.* AIP Conference Proceedings Volume 1905, Issue 1, pp. 030023.

Alamag, KMNB, and **Addawe, JM.** (2017). *Parameter Optimization of differential evolution algorithm for automatic playlist generation problem.* AIP Conference Proceedings Volume 1905, Issue 1, pp. 040005.

Magsakay, CB, De Vera, NU, Libatique, CP, Addawe, RC and **Addawe, JM.** (2017). *Treatment on outliers in UBJ-SARIMA models for forecasting dengue cases on age groups not eligible for vaccination in Baguio City, Philippines.* AIP Conference Proceedings Volume 1905, Issue 1, pp. 050028.

Addawe, RC, **Addawe, J.** Sueño, MRK and Magadia, JC. (2017). *Differential evolution-simulated annealing for multiple sequence alignment.* IOP Conf. Series: Journal of Physics: Conference Series. 893(1):012061 doi:10.1088/1742-6596/893/1/012061

Addawe, J. and Gabriel, P. (2017). *Parameter Optimization of Vertical Decomposition with Genetic Algorithm for Multiple Sequence Alignment. Proceedings of the 17th Philippine Computing Science Congress(PCSC2017),* pp. 152-157.

Javellana, L. and **Addawe, J.** (2017). *Air Pollution Simulation in Baguio City, Philippines Using Genetic Algorithm. Proceedings of the 17th Philippine Computing Science Congress(PCSC2017),* pp. 125-129.

Blas, N., **Addawe, J.,** and David, G., (2016). *A mathematical model of transmission of rice tungro disease by Nephrotettix virescens.* AIP Conf. Proc.:AIP Publishing. (4th International Conference on Fundamental and Applied Sciences (ICFAS2016) Volume 1787, Issue 1.

Addawe, R., **Addawe, J.** and Magadia, J. (2016). *Alternative Robust Estimators for Autoregressive Models with Outliers Using Differential Evolution Algorithm.* AIP Conference Proceedings:AIP Publishing.(4th International Conference on Fundamental and Applied Sciences (ICFAS2016) AIP Conf. Proc. 1787, 020009-1-020009-8.

Lapaan, R.D., Collera, J.A., and **Addawe, J. M.** (2016). *Mathematical Analysis of tuberculosis transmission model with delay.* AIP Conference Proceedings:AIP Publishing. (4th International Conference on Fundamental and Applied Sciences (ICFAS2016) Volume 1787, Issue 1

Addawe, J., and Pajimola, A.K.(2016). Dynamics of Climate-based Malaria Transmission Model with Age-Structured Human Population. THE 4TH INTERNATIONAL CONFERENCE ON QUANTITATIVE SCIENCES AND ITS APPLICATIONS (ICOQSIA 2016) AIP Conf. Proc. 1782, 040002-1–040002-7; doi: 10.1063/1.4966069

Sueño M.R. and **Addawe J.** (2016). Optimizing Genetic Algorithm Parameters for Multiple Sequence Alignment Based on Structural Information. Advanced Studies in Biology. 8:1 pp. 9-16. doi:http://dx.doi.org/10.12988/asb.2016.51250

Ignacio, P.S., **Addawe, J.,** and Nable, J. (2016). P-adic Qth Roots Via Newton-Raphson Method. *Thai Journal of Mathematics.* 14(2): 417-429.

Addawe, R., **Addawe, J.** and Magadia, J. (2016). Optimization of seasonal ARIMA models using differential evolution – simulated annealing (DESA) algorithm in forecasting dengue cases in Baguio City. *AIP Conf. Proc.* 1776 (2016), pp. 090021-1-090021-4; doi:http://dx.doi.org/10.1063/1.4965385.

Ignacio, P.S., **Addawe, J.**, Alangui, W., Nable, J. (2013). Computation of Square Root and Cube Root of P-adic Numbers Via Newton-Raphson Method. *Journal of Mathematics Research*. 5(2): 31-28.

Addawe, J. and Lope, E. (2012). Analysis of age-structured malaria transmission model. *Philippine Science Letters*. 5(2): 169-186.

Addawe, J. and Lope, E. (2012). Sensitivity analysis of age-structured malaria transmission model. *AIP Conf. Proc.* 1482 (2012), pp. 47-53; doi:<http://dx.doi.org/10.1063/1.4757437> computational methods(ICFAS2012).

Addawe, R., **Addawe, J.**, Adorio, E and Magadia, J. (2006). DESA: A Hybrid Optimization Algorithm for High Dimensional Functions. *A publication of the International Association of Science and Technology for Development (IASTED), Proceedings of the International Conference on Control and Applications May 2006*, Copyright 2006 by ACTA Press.

Addawe, R., **Addawe, J.**, Adorio, E. and Magadia, J. (2005). A DESA Algorithm for Parameter Estimation of Gaussians. *Proceedings of the 5th Philippine Computing Science Congress March 2005*. pp. 192-200.

Oral Presentations:

“**Leslie Gower Type Predator Prey Model with Constant-effort Harvesting**” H. Diza and **J. Addawe**. August 7-9,2018. “ **The 5th International Conference on Qualitative Sciences and Its Applications (ICOQSIA)**”. De Baron Hotel, Langkawi Island, Malaysia.

“**Analysis of dynamics in the predation on rice plants by golden apple (*Pomocea canaliculata*) with harvesting**”. Addawe, J. September 17-21, 2017. “*International Society for Ecological Modelling Global Conference 2017*”. Ramada Hotel, Jeju Korea.

“**Modeling the Dynamics of Predation of Rice Plants and Weeds by Invasive Golden Apple Snail**”. Addawe, J. July 12- 14, 2017. International Conference on Cordillera Studies”. CAP, Camp John Hay, Baguio City, Philippines.

“**Dynamics of Invasive Golden Apple Sanail (*Pomocea caliculata*) Predations on Rice Plants and Weeds**”. Addawe, J. May 29-31, 2017. Mathematical Society of the Philippines National Convention”. Bicol, Philippines.

“**Parameter Optimization of Vertical Decomposition with Genetic Algorithm for Multiple Sequence Alignment**”. Addawe, J. March 16-18, 2017. 17th Philippine Computing Science Congress. University of San Carlos, Talamban Campus, Cebu City, Philippines.

“An Age-structured malaria transmission model”. Addawe, J. November 30-December 2, 2016. International Conference in Mathematical and Computational Modeling of Biological Systems”. UP Diliman - DLSU Manila, Philippines.

“*Dynamics of climate-based malaria transmission model with age-structured human population.*” Addawe, J., Pajimola. August 16-18,2016 A THE 4TH INTERNATIONAL CONFERENCE ON QUANTITATIVE SCIENCES AND ITS APPLICATIONS (ICOQSIA 2016), Putrajaya Malaysia.

”*Dynamics of Dengue Transmission Model in Baguio City, Philippines*”. Addawe, J., Pajimola, A., and Tubera, D. July 25-29, 2016. Asian Mathematical Conference (AMC2016). Nusa Dua Convention Center, Bali Indonesia.

“Building Health Research in the University of the Philippines (UP) from the Ground”. Edna Co, Leonardo Estacio, Joel Addawe, Ruben Caragay, Isidro Sia, Hilton Lam, and Jennifer Madamba. Global FORUM on Research and Innovation for Health 2015. August 24-27, 2015 PICC, Manila Philippines.

”Genetic Algorithm and K-Nearest Neighbor Classification Method for Heterogeneous Data”. Felicia Anne Bulanan and Joel Addawe. May 18-19, 2015. 2015 MSP Annual Convention. Plaza Del Norte Hotel and Convention Center, Laoag City Ilocos Norte.

“Shuffled Complex Evolution Approach with Differential Evolution for Wind Turbine Output Optimization”, Addawe, J. and Micu, N. May 18-19, 2015. 2015 MSP Annual Convention. Plaza Del Norte Hotel and Convention Center, Laoag City Ilocos Norte.

“Optimizing Vertical Decomposition with GA Parameters for MSA” . Addawe, J. and Gabriel, P. January 19-20, 2015. MODEL 2015 - Research Workshop on Modeling, Simulation and Scientific Computing in the Philippines. University Hotel, UP Diliman Quezon City.

“Mathematical Modeling of Disease Transmission”. Addawe, Joel. October 21-23, 2014. Seminar on Mathematical Modeling Across the Disciplines. NVSU Nueva Viscaya.

“A model for malaria disease with age-structured human population”, Addawe, J. Macansantos, P., Lope 13-21 August 2014 Coex, Seoul, Korea. International Congress of Mathematicians 2014

“Output Maximization of Wind Turbines using Genetic Algorithm”, Addawe, J. and Martin, F. May 26-27, 2014. Mathematical Society of the Philippines (MSP) 2014 Annual Convention, Sarabia Manor Hotel, Iloilo City.

“Bifurcation Analysis of the Age-structured Malaria Transmission Model”, Addawe, J. Macansantos, P., Lope May 26-27, 2014. Mathematical Society of the Philippines (MSP) 2014 Annual Convention, Sarabia Manor Hotel, Iloilo City.

“Modeling malaria transmission in an age-structured population ”, Addawe, J. Macansantos, P., Lope, E. May 18-19, 2013. Mathematical Society of the Philippines (MSP) 2013 Annual Convention, Puerto Princesa City, Palawan.

“Sensitivity Analysis of age-structured malaria transmission model”, Addawe, J. and Lope, E. June 11-14, 2012. International Conference on Fundamental and Applied Sciences (ICFAS2012), Kuala Lumpur.

“Numerical Computation to Approximate Energy Minimization for Large Lennard-Jones Clusters ”, Addawe, J. Galleta, D., Nabor, B., Ramos, P. May 18-19, 2007. Mathematical Society of the Philippines (MSP) 2007 Annual Convention, Bohol Tagbilaran City

“rpnMPI – An Interactive Parallel Scripting Tool”, Addawe, J. Adorio, E., Corpuz, B. February 14-15, 2004. 4th Philippine Computing Science Congress, University of the Philippines – Los Banos.

“rpnMPI – An Extensible interactive system using MPI”, Addawe, J. Adorio, E., Corpuz, B. October 27-28, 2003. NCITE 2003, Lyceum of the Philippines Manila.

“A modified Differential Evolution Algorithm for Continuous Multivariate Function Optimization”. Addawe, J., Adorio E. May 24-25, 2003. Mathematical Society of the Philippines (MSP) 2003 Annual Convention, UPLB Laguna.

Completed Grants:

UP System Emerging Interdisciplinary Research Grant (EIDR) – August 2015 – July 2107

Global change impact on diseases and alien species (gci2016) Travel Grant. May 2-6, 2016 at AIMS, Muizenberg, Cape Town

NANUM Travel Grant: 12 - 21 August 2014. Seoul, Korea. International Congress of Mathematicians

Doctoral Studies Program: June 2002 – May 2004; June 1, 2005-May 31, 2006; Nov 2, 2010 – May 31, 2011

Principal Investigator:

RpnMPI- An Open Source Project (UP Faculty Research Grant – UP Diliman 2005)

Software and Computer Programs

Financial Grant Under the Alternate (Sandwich) Study of the System Faculty Development Program of UP. Study visit at Ludwig Maximilian University (LMU), Munich Germany (June – August 2004)

Student Mentoring (MS Mathematics Students):

Paul Ignacio –

“Computation of the q th Roots of p -adic Numbers Via Newton-Raphson Method” 2013

Louie Balino –

“Finite Volume Methods for Two Crowd Dynamics” 2018