

MA. ANITA MASCAREÑAS - BAUTISTA
CURRICULUM VITAE

CONTACT INFORMATION

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San Antonio, Los Baños 4030 Laguna
Philippines
Mobile: +63-917-626-3991
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maanita_bautista@yahoo.com

EDUCATION

2009, Doctor of Agricultural Science

Applied Entomology
Graduate School of Bioagricultural Sciences
Nagoya University, Nagoya, Japan
Dissertation: Cytochrome P450s and their involvement in pyrethroid resistance of the diamondback moth, *Plutella xylostella* L.

2006, Master of Agricultural Science

Applied Entomology
Graduate School of Bioagricultural Sciences
Nagoya University, Nagoya, Japan
Thesis: Pyrethroid resistance of the diamondback moth, *Plutella xylostella* L.

1996, Master of Science in Entomology, 39 units

Insect Genetics
University of the Philippines Los Baños, Philippines

1991, Bachelor of Science in Agriculture

Honor Roll

Entomology
University of the Philippines Los Baños, Philippines
Thesis: Antifeeding, oviposition deterrence and ovicidal activity of several synthetic and botanical insecticides against the diamondback moth, *Plutella xylostella* L.

FIELD OF SPECIALIZATION:

Insect Biochemistry and Molecular Biology, Insecticide Toxicology, Insect Resistance, Insect Physiology, Genomics (whole genome and transcriptome sequencing), Insect Molecular Marker Development, Insect Population Genetics, Bioinformatics

PROFESSIONAL EXPERIENCE

- **Assistant Professor 7/Principal Investigator, August 2013-present**
Functional Genomics Laboratory, National Institute of Molecular Biology and Biotechnology, National Science Complex, University of the Philippines Diliman, Diliman, Quezon City
 - **Genomics Manager, October 2013-present**
DNA Sequencing Core Facility, Philippine Genome Center, National Institute of Molecular Biology and Biotechnology, National Science Complex, University of the Philippines Diliman, Diliman, Quezon City
 - **Postdoctoral Researcher, April 2010- December 2012**
Department of Entomology, Ohio Agricultural Research and Development Center (OARDC) The Ohio State University, Wooster, OH, USA
 - **University Researcher II, Project Leader, April 2009-March 31, 2010**
National Institute of Molecular Biology and Biotechnology (BIOTECH)
University of the Philippines Los Baños
College, Laguna, Philippines
- Core Projects:**
- Identification of Antimicrobial Peptides from Philippine Fruit Fly, *Bactrocera*, Species
 - Molecular Basis of Staphylococcal Drug Resistance
- **Research /Graduate Student, April 2003-March 2009**
Applied Entomology Laboratory
Graduate School of Bioagricultural Sciences, Nagoya
University, Nagoya, Japan
Research Title: Molecular mechanisms of insecticide resistance of the diamondback moth, *Plutella xylostella* L.
- **University Research Associate, Study Leader, May 1991- March 2003**
National Institute of Molecular Biology and Biotechnology (BIOTECH)
University of the Philippines Los Baños
College, Laguna, Philippines

ON-GOING/APPROVED PROJECTS

- Lignocellulases from Philippine termite digestomes (Principal Investigator; Fund Source: NIMBB-UP Diliman)
- Biosprospecting for antimicrobial peptides in Philippine insect species (Principal Investigator Fund Source: NIMBB-UP Diliman)
- Coconut Genome Sequencing: A Resource for Coconut Genetic and Varietal Improvement (Project Staff level 2; Fund Source: PCAARRD-DOST)
- Gene Expression Analysis Towards Coconut Genotyping and Varietal Improvement (Fund Source: PCAARRD-DOST)
- Transcriptome-based genetic resources for an armoured scale insect species, *Aspidiotus rigidus* and its susceptible and tolerant host coconut, *Cocos nucifera* (Fund Source: Balik-PhD UP-OVPAA)

- Development of Molecular Diagnostic Tools for Armored Scale Insects (Hemiptera: Diaspididae) and Their Natural Enemies on Coconut and Associated Crops (Component Leader) (Fund Source: PCAARRD)
- Development of genomic resources for insect pests of corn and rice: transcriptome sequencing and rapid development of single nucleotide polymorphism (SNP) markers for the Asiatic corn borer, *Ostrinia furnacalis* (Guenee) and the white stemborer, *Scirpophaga innotata* (Walker) (Project Leader: Approved for Funding, November 2015)
- Reinforcing local applications of omics and bioinformatics (Program Leader: EIDR, OVPAA, University of the Philippines)

PROJECTS COMPLETED

- Molecular characterization of indirection selection for susceptibility to insecticides (United States Department of Agriculture-National Institute of Food and Agriculture Project)
- Development of *Bacillus thuringiensis* Berliner Isolates for the Control of Oriental Fruit Fly, *Bactrocera* Sp. And Mango Pulp Weevil, *Sternochetus frigidus* (Fabr.)
- Field Evaluation of Developed *Bacillus thuringiensis* (Bt) and Nuclear Polyhedrosis Virus (NPV) Products for the Control of Lepidopterous Pests Attacking Crucifers and Shallots
- Identification of Molecular and Biochemical Markers in Locally Isolated High Alcohol Yeast Strains
- Microbial Control of Oriental Fruit Fly, *Bactrocera dorsalis* (Hendel) Infesting Fruits of Banana, Mango and Papaya
- Development of Mixed Bacterin Against Swine Respiratory Diseases
- Biotechnology for Biocides Against Oriental Fruit Fly, *Bactrocera dorsalis*
- Improvement of Rhizobia for Tolerance to Environmental Stress
- Development of Rapid Diagnostic Kits for the Detection of Animal Bacterial Pathogens
- Development of *Bacillus thuringiensis* for the Control of Rice Striped Stemborer, *Chilo suppressalis*
- Molecular Biology of *Bacillus thuringiensis* with High Insecticidal Activity Against Important Lepidopterous Pests of Rice
- Efficacy of *Bacillus thuringiensis* against bacterial pathogens of rice and other important agricultural crops

PUBLICATIONS

ISI

- **JUNTILA, D.J., BAUTISTA, M.A., AND MONOTILLA, W.** Biomass and lipid production of a local isolate *Chlorella sorokiniana* under mixotrophic conditions. ***Bioresources Technology***. DOI: 10.1016/j.biortech.2015.03.098

- **BAUTISTA, M.A.M., BHANDARY, B., WIJERATNE, A.J., MICHEL, A.P., HOY, C.W., AND MITTAPALLI, O.** 2015. Evidence for tradeoffs in detoxification and chemosensation gene signatures in *Plutella xylostella*. ***Pest Management Science* 71(3):423-432.**
- ❖ The paper focuses on the discovery of physiological and behavioural insecticide resistance genes, which were mined from the *transcriptome* of *Plutella xylostella* and analyzed in strains exposed to different permethrin (a pyrethroid) selection pressures.

- **BAUTISTA, M.A.M., MITTAPALLI, O., HOY, C. AND MICHEL.** 2013. Single nucleotide polymorphism discovery in the diamondback moth. ***Molecular Ecology Resources* 13:158-159. (Journal Impact Factor =7.432)**
- ❖ The paper focuses on the discovery and development of SNPs from a unigene set obtained from *pyrosequencing a transcriptome* of field collected diamondback moth.

- MITTAPALLI, O., RIVERA-VEGA, L., BHANDARY, B., **BAUTISTA, M.A.M.**, MAMIDALA, P., MICHEL, A.P., SHUKLE, R.A., and MIAN, M.A.R., 2010. Cloning and characterization of *mariner*-like elements in the soybean aphid, *Aphis glycines* Matsumura. ***Bull. Entomol. Res.* 101: 697-704. (Journal Impact Factor = 1.58)**
- ❖ I contributed the data on determining the gene copy number of the *mariner*-like elements *Aphis glycines* using quantitative real-time PCR.

- **BAUTISTA, M.A.M., MIYATA, T., MIURA, K., TANAKA, T.,** 2009. RNA interference-mediated knockdown of a cytochrome P450, *CYP6BG1*, from the diamondback moth, *Plutella xylostella*, reduces larval resistance to permethrin. ***Insect. Biochem. Mol. Biol.* 39:38-46. (Journal Impact Factor =3.62)**
- ❖ The paper has **155 citations** as of February 2016 and it is one of the most highly cited papers published in *Insect Biochemistry and Molecular Biology* journal (Elsevier) from year 2008.

- **BAUTISTA, M.A.M., MIURA, K., TANAKA, T.** 2009. Cytochrome P450s and pyrethroid resistance of *Plutella xylostella* (L.). (Full paper) Proceedings of the 40th Annual Conference of the Pest Management Council of the Philippines, May 5-8, 2009, Baguio City. Benguet.

- **BAUTISTA, M.A.M., MIURA, K., MIYATA, T., TANAKA, T.** 2009. Cytochrome P450-mediated pyrethroid resistance in the diamondback moth, *Plutella xylostella* L. ***Philippine Entomologist* 23 (2) p. 189.**

- **BAUTISTA, M.A.M.,** 2008. 16th International Plant Protection Congress Report (Symposia). ***J. Pestic. Science.* 33(1): 100-101.** (In Japanese).

- **BAUTISTA, M.A.M., TANAKA, T., MIYATA, T.,** 2007. Identification of permethrin-inducible cytochrome P450s from the diamondback moth, *Plutella xylostella* (L.) and the possibility of involvement in permethrin resistance. ***Pestic. Biochem. Physiol.* 87: 85-93. (Journal Impact Factor =2.26)**
- ❖ The paper has **44 citations** as of February 2016

- **BAUTISTA, M.A.M., MIURA, K., MIYATA, T., TANAKA, T.** Evaluating the role of cytochrome P450s in pyrethroid resistance of the diamondback moth, *Plutella xylostella* (L.). (Full paper)

Proceedings of the XVI International Plant Protection Congress, 15-18 October 2007, Scottish Exhibition & Conference Centre (SECC), Glasgow, Scotland, UK

- KANEKO, J., **MASCAREÑAS, M.A.L.**, HUDA, Md. N., TOMITA, T., KAMIO, Y., 1998. An N-terminal region of LukF of Staphylococcal leukocidin/gamma hemolysin is crucial for the biological activities of the toxin. *Biosci. Biotechnol. Biochem.* 62(7): 1464-1467. (Journal Impact Factor =1.292)
- GARCIA, E.S., PATERNO, E.S., **BAUTISTA, M.A.M.**, de JESUS, M.J.A., MANALO, C.S. 2000. Physiological and genetic basis of acid tolerance in peanut (*Arachis hypogaea* L.) rhizobia. In: T. Yoshida, T. Seki, P. Matangkasombut, R.V.Ebora, E. Sukara, M.I.A. Karim (Eds). *Biotechnology For Sustainable Utilization of Biological Resources in the Tropics* 14: 131-139.
- SOLIS, C.D., PADUA. L.E., BIONG, B.L., **BAUTISTA, M.A.M.**, 1999. Preliminary study in milk protein variation in domestic buffaloes and dairy cattle using SDS-PAGE and PAGE. *Phil. J. Vet. Med.* 36: 50-54.

Abstract/short entry /poster

- CAMPOSANO·JMT, CLEOFE, MAS, DAVID, AKE, PACLIBARE, IPP, ADORADA, JR, CAOILI, BL AND **BAUTISTA, MAM.** 2016. Probing Philippine Termites for Lignocellulases and Antimicrobial Peptides. Poster presented at the 47th Anniversary and Annual Scientific Conference of the Pest Management Council of the Philippines. Villa Caceres Hotel, Naga City, Camarines Sur. Philippines. 8-11 March 2016.
- MAÑALAC, TCM, DE CLARO, AJH, ABESAMIS,KIA, ADORADA, JR, SAPIN, GD, CAOILI·BL AND **BAUTISTA, MAM.** 2016. Detoxification and Chemosensation Gene Responses to Repellant and Non-Repellant Termiticide in Philippine Milk Termite, *Coptotermes* sp. (Isoptera: Rhinotermitidae). Poster presented at the 47th Anniversary and Annual Scientific Conference of the Pest Management Council of the Philippines. Villa Caceres Hotel, Naga City, Camarines Sur. Philippines. 8-11 March 2016.
- ACOBA, D., PUNZALAN, M.R., CABRIA, G.I., EVANGELISTA, J.E., RIVERA, R., RIVERA, S., **BAUTISTA, M.A.**, AND PALMES-SALOMA, C. Evaluation of various extraction protocols for isolating total RNA from different *Cocos nucifera* tissues. Poster presented at the Annual Convention of the Philippine Society of Biochemistry and Molecular Biology. Marco Polo Plaza Hotel, Cebu City. Philippines. 4-5 December 2014.
- CABRIA, G.I., EVANGELISTA, J.E., ACOBA, D., PUNZALAN, M.R., RIVERA, R., RIVERA, S., **BAUTISTA, M.A.**, AND PALMES-SALOMA, C. *De novo* transcriptome assembly of coconut (*Cocos nucifera*) and preliminary differential expression analysis for varietal comparison of Baybay Tall and West African tall varieties. Poster presented at the Annual Convention of the Philippine Society of Biochemistry and Molecular Biology. Marco Polo Plaza Hotel, Cebu City. Philippines. 4-5 December 2014.
- MARIANO, J., CADORNA, C.A., GUTIERREZ, V., REYES, J.F., AQUINO, V., **BAUTISTA, M.A.**, AND PALMES-SALOMA, C. Comparison of different extraction methods to generate high quality genomic DNA of *Cocos nucifera* for next generation sequencing. Poster presented at the Annual Convention of the Philippine Society of Biochemistry and Molecular Biology. Marco Polo Plaza Hotel, Cebu City. Philippines. 4-5 December 2014.
- REYES, J.F., GUTIERREZ, V., CADORNA, C.A., MARIANO, J., **BAUTISTA, M.A.**, LLUISMA, A.O., AND PALMES-SALOMA, C. *De novo* ASSEMBLY OF *Cocos nucifera* var Laguna tall using synthetic long

read sequencing strategy. Poster presented at the Annual Convention of the Philippine Society of Biochemistry and Molecular Biology. Marco Polo Plaza Hotel, Cebu City. Philippines. 4-5 December 2014.

- Gamaliel Lysander Cabria, John Erol Evangelista, Dianne Acoba, Ma. Regina Punzalan, Ramon Rivera, Susan Rivera, **Ma. Anita Bautista** and Cynthia Palmes-Saloma “De Novo Transcriptome Assembly and Annotation of Coconut (*Cocos nucifera*) Baybay Tall and West African Tall Varieties”. (KSMC) Oct. 21-23, 2014
- “Effect of mixotrophic growth conditions on the lipid production of a local isolate *Chlorella sorokiniana*”. Darryl Juntilla, **Ma. Anita M. Bautista**, Wilberto Monotilla (ASIA-OCEANA ALGAE) Nov. 17-21, 2014
- **BAUTISTA M.A.M.**, MICHEL, A.P., HOY, C.W., MITTAPALLI, O. Molecular characterization of indirect selection for increased susceptibility to insecticides. USDA Project Directorship Workshop December 12, 2010. San Diego, CA.
- **BAUTISTA, M.A.M.**, MIURA, K., MIYATA, T., TANAKA, T. Evaluating the role of cytochrome P450s in pyrethroid resistance of the diamondback moth, *Plutella xylostella* (L.). Paper selected for Post-graduate student poster presentation at the XVI International Plant Protection Congress, 15-18 October 2007, Scottish Exhibition & Conference Centre (SECC), Glasgow, Scotland, UK.
- **BAUTISTA, M.A.M.**, KANEKO, J., TOMITA, T., KAMIO, Y., Determination of the molecular region crucial for the biological activities of the LukF of Staphylococcal leukocidin/gamma-hemolysin. In: Proceedings of the 27th Annual Convention of the Philippine Society for Microbiology, Manila Hotel, Rizal Park, Manila, 1998.

TALKS

- **BAUTISTA, M.A.M.** (Plenary Speaker). IPM-OMICS: A Futuristic Approach to Manage Pest Population. 9 March 2016. 47th Anniversary and Annual Scientific Conference of the Pest Management Council of the Philippines. Villa Caceres Hotel, Naga City, Camarines Sur. Philippines. 8-11 March 2016.
- **BAUTISTA, M.A.M.** (Guest/Resource Speaker). Current and Future Resources for Agricultural Genomics in the Philippines. 29 January 2016. Seminar-Workshop. Bicol University, Legazpi, Albay.
- **BAUTISTA, M.A.M.** (Resource Person). Omics and Insect Biotechnology. 26 November 2015. 7th National Biotechnology Education Conference for Teachers (NBECT). IRRI and BIOTECH-UPLB, College, Laguna.
- **BAUTISTA, M.A.M.** (Presenter). Transcriptome-based genetic resources for an armoured scale insect species, *Aspidiotus rigidus* and its susceptible and tolerant host coconut, *Cocos nucifera*. 13-14 November 2015. EIDR-OVPAA Symposium. National Institute of Physics. UP Diliman, Quezon City.
- **BAUTISTA, M.A.M.** (Presenter; Concurrent Lecture). Next-generation sequencing technology-based development of insect molecular markers. 4-5 December 2014. 41th Annual Convention of the Philippine Society of Biochemistry and Molecular Biology. Marco Polo Plaza Hotel, Cebu City. Philippines.
- **BAUTISTA, M.A.M.** (Presenter). genomics-based identification and development of insect molecular markers. 08 November 2014. Mindanao-wide seminar on genomics. UP Mindanao.

- **BAUTISTA, M.A.M.** Next generation sequencing technologies accelerate molecular markers development for insecticide resistance monitoring. May 09, 2014. 45th Anniversary and Annual Conference of the Pest Management Council of the Philippines. Mandarin Plaza Hotel, Cebu City.
- **BAUTISTA, M.A.M.** Accelerating gene discovery in insects. October 2013. 4th Annual Conference of the Philippine Society for Cell Biology, NIMBB, UP Diliman, Quezon City.
- **BAUTISTA, M.A.M.** (Invited Lecturer) Next generation sequencing in the diamondback moth, *Plutella xylostella* L., research. Biology 201 (Advanced Molecular Biology) and Graduate Insect Pathology (Ent 295) Classes. January 29, 2013. Institute of Biological Sciences, CAS, UP Los Banos, College, Laguna.
- **BAUTISTA, M.A.M.** Cytochrome P450s in the Diamondback Moth: Gene Expression and Functional Analysis by RNA Interference (RNAi) in a Pyrethroid Resistant Strain. Entomology Department Seminar. February 23, 2011 OARDC/The Ohio State University, Wooster, OH.
- **BAUTISTA M.A.M.** (Presenter), MICHEL, A.P., HOY, C.W., MITTAPALLI, O. Molecular characterization of indirect selection for increased susceptibility to insecticides. 2010 USDA Project Directorship Workshop. December 12, 2010. San Diego, California, USA.
- **BAUTISTA, M.A.M.** (Presenter), MIURA, K., TANAKA, T. Cytochrome P450s and pyrethroid resistance of *Plutella xylostella* (L.). 40th Annual Conference of the Pest Management Council of the Philippines May 5-8, 2009, Baguio City. Benguet.
- **BAUTISTA, M.A.M.** (Presenter), MIURA, K., TANAKA, T. Functional analysis of a cytochrome P450, CYP6BG1, in permethrin resistance of *Plutella xylostella* (L.) by double stranded RNA droplet –feeding. 53rd Annual Meeting of the Japanese Society of Applied Entomology and Zoology, 28-30 March 2009, Hokkaido University, Sapporo, Japan.
- **BAUTISTA, M.A.M.** (Presenter), MIURA, K., MIYATA, T., TANAKA, T. RNA interference of a Cytochrome P450 putatively involved in permethrin resistance of the diamondback moth, *Plutella xylostella* (L.). 33rd Annual Meeting of the Pesticide Science Society of Japan, 31 March 2008. Kinki University, Nara, Japan.
- **BAUTISTA, M.A.M.** (Presenter), MIYATA, T., TANAKA, T. Involvement of a cytochrome P450 in permethrin resistance of the diamondback moth, *Plutella xylostella* (L.). XVI International Plant Protection Congress, 15-18 October 2007, Scottish Exhibition and Conference Center, Glasgow Scotland, UK.
- **BAUTISTA, M.A.M.** (Presenter), TANAKA, T. Induced expression of *Plutella xylostella* Cytochrome P450 genes upon exposure to permethrin. 51st Annual Meeting of the Japanese Society of Applied Entomology and Zoology, 27-29 March 2007, Hiroshima University, Hiroshima, Japan.
- **BAUTISTA, M.A.M.** (Presenter), TANAKA, T., MIYATA, T. Induction of *Plutella xylostella* (L.) Cytochrome P450, CYP6BF1v4, by permethrin. 31st Annual Meeting of the Pesticide Science Society of Japan, 21-23 March 2006, Fukuoka Institute of Technology, and Fukuoka, Japan.
- **BAUTISTA, M.A.M.** (Presenter), TANAKA, T., MIYATA, T. 5th Asia-Pacific Congress of Entomology, 18-21 October 2005, Plaza Jeju Hotel, Jeju, Korea.
- **BAUTISTA, M.A.M.** (Presenter), TANAKA, T., MIYATA, T. Elucidation of the possible involvement of cytochrome P450 in permethrin resistance of the diamondback moth, *Plutella xylostella* (L.). 49th Annual Meeting of the Japanese Society of Applied Entomology and Zoology, March 2005, Tamagawa University, Tamagawa, Tokyo, Japan.
- **BAUTISTA, M.A.M.** (Presenter), KANEKO, J., TOMITA, T., KAMIO, Y. Determination of the molecular region crucial for the biological activities of the LukF of Staphylococcal

leukocidin/gamma hemolysin. 27th Annual Convention of the Philippine Society for Microbiology (PSM), 7-8 May 1998. Manila Hotel, Rizal Park, Manila.

- **MASCAREÑAS, M.A.L.** (Presenter), KANEKO, J., TOMITA, T., KAMIO, Y. The N-terminal region of Staphylococcal leukocidin/gamma hemolysin is crucial for its biological activities. 24th International Post Graduate University Course in Microbiology Seminar, 25 September 1997. Osaka University, Osaka, Japan.

PROFESSIONAL ORGANIZATION

Philippine Association of Entomologists (PAE), Vice-President, 2016-2017
University of the Philippines Los Baños Gamma Sigma Delta Honor Society of Agriculture
University of the Philippines Phi Sigma Biological Honor Society, Alpha Chapter
Philippine Society for Microbiology
Japanese Society for Applied Entomology and Zoology
Pesticide Science Society of Japan
International Association of Plant Protection Scientists
Entomological Society of America
Philippine Association of Japanese Government Scholars (PHILAJAMES)
Nagoya University Alumni Association

STUDY/ TRAINING/FELLOWSHIP

Philippine Association of Entomologists (PAE) - BAYER, Phils. Undergraduate Thesis Grant, 1990-1991
UNESCO Post-graduate University Course in Microbiology, 1996-1997
Japanese Government Graduate Study Scholarship (MONBUKAGAKUSHO), 2003-2009
Postdoctoral, Ohio Agricultural Research and Development Center, The Ohio State University, April 2010- December 2012

SIGNIFICANT ACHIEVEMENTS/AWARDS

University of the Philippines International Publications Awards (3 Papers), 2009; 2015
Travel Award, Pesticide Science Society of Japan, 2007
Best Poster Paper Award, 2nd Place, Graduate Students' Scientific Poster Session, 15th AAACU Biennial Convention, Nagoya University, Japan, September, 2004.
Postdoctoral Fellowship at the Ohio State University, 2010-2013

OTHER PROFESSIONAL SERVICES

Journal Reviewer

Scientific Reports (Nature)
Molecular Ecology (Wiley)
Pest Management Science (Elsevier)
Bulletin of Entomological Research (Cambridge)

The Philippine Entomologist (Subject Editor: Toxicology and Physiology)
The Pest Science (Springer)
European Journal of Entomology
Entomologica Experimentalis et Applicata (Wiley)
Tropical Plant Biology (Springer)