

# 桑保羅 PAUL GERALD LAYAGUE SANCHEZ, Dr. rer. nat.

Postdoctoral Fellow, Laboratory of Aquatic Zoology

Yilan Marine Research Station, Institute of Cellular and Organismic Biology, Academia Sinica

Pronouns: he/they/siya

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## RESEARCH EXPERIENCE

- 2022 – present      **Postdoctoral Fellow**  
Prof. Kinya Ota's Lab, Yilan Marine Research Station  
Laboratory of Aquatic Zoology  
Institute of Cellular and Organismic Biology, Academia Sinica, Taiwan  
*developmental biology, evolutionary biology, aquatic zoology, biophysics*
- 2021 – 2022      **Postdoctoral Fellow, Swiss Government Excellence Scholarship**  
Prof. Dr. Brigitte Galliot's Lab, Department of Genetics and Evolution  
Laboratory of Regeneration and Adult Neurogenesis  
University of Geneva, Geneva, Switzerland  
*developmental biology, nonlinear dynamics, engineering (microfluidics)*
- 2020 – 2021      **Postdoctoral Fellow**  
Dr. Alexander Aulehla's Lab, Developmental Biology Unit  
European Molecular Biology Laboratory (EMBL), Heidelberg, Germany  
*developmental biology, nonlinear dynamics, engineering (microfluidics)*
- 2019 – 2021      **Oscillations [premiered 23 October 2021]**  
with Iván Pérez and Jenny Mahla of the Dance Theatre Heidelberg  
*nonlinear dynamics (oscillations) in biology and in dance*  
documentary movie: <https://youtu.be/rT5I-itcA9I>
- 2016 – 2020      **Predoctoral Fellow (PhD Student)**  
Dr. Alexander Aulehla's Lab, Developmental Biology Unit  
European Molecular Biology Laboratory (EMBL), Heidelberg, Germany  
*developmental biology, nonlinear dynamics, engineering (microfluidics)*
- 2019      **Physical Biology of the Cell Course Student**  
Marine Biological Laboratory  
Woods Hole, Massachusetts, USA  
*physical biology, projects with Jonathon Howard and Alvaro Sanchez*
- 2018      **Embryology Course Student**  
Marine Biological Laboratory  
Woods Hole, Massachusetts, USA  
*developmental biology*

- 2015 – 2016      **Research Assistant**  
 Dr. Chih-Yen King's Lab, Institute of Molecular Biology  
 Academia Sinica, Taipei, Taiwan  
*yeast genetics, prion (structural) biology, genomics*
- 2014      **Research Intern**  
 Prof. Dr. Michael Boutros's Lab, Signaling and Functional Genomics (B110)  
 German Cancer Research Center (DKFZ), Heidelberg, Germany  
*functional genomics, cancer biology*
- Research Intern**  
 Dr. Chih-Yen King's Lab, Institute of Molecular Biology  
 Academia Sinica, Taipei, Taiwan  
*yeast genetics, prion (structural) biology, transcriptomics, proteomics*
- 2010 – 2011      **Undergraduate Student Researcher**  
*under the supervision of Dr. Nelson R. Villarante*  
 Department of Physical Sciences and Mathematics (DPSM)  
 College of Arts and Sciences (CAS)  
 University of the Philippines Manila, Manila, Philippines  
*natural products chemistry, rational drug design (computational chemistry)*

## TEACHING EXPERIENCE

- 2011 – 2014      **Junior Faculty, Lecturer and Instructor (chemistry and biochemistry)**  
 Department of Physical Sciences and Mathematics (DPSM)  
 College of Arts and Sciences (CAS)  
 University of the Philippines Manila  
 Manila, Philippines
- AY 2010-2011, Summer
- Chem18.1: Fundamentals of General Chemistry II, Lab (43 students)
  - Chem31.1: Elementary Organic Chemistry, Lab (23 students)
- AY 2011-2012, First Semester
- Chem18.1: Fundamentals of General Chemistry II, Lab (16 students)
- AY 2011-2012, Second Semester
- Chem14.1: Fundamentals of General Chemistry I, Lab (71 students)
  - Chem18.1: Fundamentals of General Chemistry II, Lab (10 students)
  - Chem31.1: Elementary Organic Chemistry, Lab (24 students)
  - Chem40.1: Elementary Biochemistry, Lab (19 students)
- AY 2011-2012, Summer
- Chem14: Fundamentals of General Chemistry I, Lecture (34 students)
  - Chem18.1: Fundamentals of General Chemistry II, Lab (20 students)
  - Chem31.1: Elementary Organic Chemistry, Lab (19 students)

AY 2012-2013, First Semester

- Chem18.1: Fundamentals of General Chemistry II, Lab (41 students)
- Chem31.1: Elementary Organic Chemistry, Lab (22 students)
- Biochem34.1: Chemistry of Biomolecules, Lab (14 students)

AY 2012-2013, Second Semester

- Chem14: Fundamentals of General Chemistry I, Lecture (29 students)
- Chem14.1: Fundamentals of General Chemistry I, Lab (59 students)
- Biochem35.1: Metabolism, Lab (12 students)
- Biochem121.1: Biochemistry of the Gene, Lab (14 students)

AY 2013-2014, Summer

- Chem18.1: Fundamentals of General Chemistry II, Lab (23 students)
- Chem31: Elementary Organic Chemistry, Lecture (29 students)
- Chem31.1: Elementary Organic Chemistry, Lab (18 students)

2007 – 2011

**Volunteer Peer Tutor**

Learning Resource Center (LRC)  
University of the Philippines Manila  
Manila, Philippines

**EDUCATION**

2016 – 2020

**PhD/Dr.rer.nat in Developmental Biology and Dynamical Systems Theory**

*Magna cum laude* (dissertation: 1.0, oral defense: 1.0)

European Molecular Biology Laboratory (EMBL)

joint PhD with Ruprecht-Karls-Universität Heidelberg (Heidelberg University)

Thesis: Entrainment of coupled, phase-shifted signaling oscillations in the presomitic mesoderm (Supervisor: Dr. Alexander Aulehla)

doi: 10.11588/heidok.00029209

Thesis defense committee: Prof. Dr. Ulrich Schwarz (Reviewer and Chair), Dr. Justin Crocker (Reviewer), Dr. Lars Hufnagel, Prof. Dr. Nicholas S. Foulkes

2019

**Physical Biology of the Cell Course Student**

Marine Biological Laboratory  
Woods Hole, Massachusetts, USA

2018

**Embryology Course Student**

Marine Biological Laboratory  
Woods Hole, Massachusetts, USA  
Testimonial video: <https://youtu.be/zNM6xFfZ2II>

2017

**Certificate, Introduction to Dynamical Systems and Chaos**

Complexity Explorer, Santa Fe Institute  
*massive open online course (MOOC) taught by Prof. David Feldman*

- 2016                      **Predoc course**  
*PhD core course in molecular systems biology*  
 European Molecular Biology Laboratory (EMBL)  
 Heidelberg, Germany
- 2012 – 2014            **Graduate courses in molecular medicine**  
 St. Luke's College of Medicine – William H. Quasha Memorial  
 Quezon City, Philippines
- 2006 – 2011            **Bachelor of Science (BSc) in Biochemistry**  
*Magna cum laude*  
 University of the Philippines Manila  
 Manila, Philippines  
 Thesis: Partial characterization of aqueous *Euphorbia hirta* extract (taua taua tea) & docking study of a flavonoid glycoside to Dengue virus serotype 2 NS3-NS2B (Supervisor: Dr. Nelson R. Villarante)

## TALKS AND PRESENTATIONS

- 2025    **Sanchez PGL**, Wang CY, Li IJ, Ota KG. “Rhythmic movements of the yolk in developing eggs and embryos of goldfish, domesticated ornamental fish with diverse patterning traits”, *contributed talk*, 18th National Symposium on Marine Science (PAMS18), Cebu, Philippines [forthcoming, July 2025]
- Sanchez PGL**, Wang CY, Li IJ, Ota KG. “Rhythmic movements of the yolk in developing eggs and embryos of goldfish, domesticated fish with diverse dorsoventral patterning traits”, *short talk and poster presentation*, 2025 Joint Conference of the Asian Society of Ichthyologists Annual Meeting and the 12th Indo-Pacific Fish Conference (2025 ASI Annual Meeting & IPFC 12), Taipei, Taiwan [forthcoming, June 2025]
- Sanchez PGL**. “Ebbs & flows: spatiotemporal dynamics in animal development as a substrate of evolution across changing environments”, *invited talk*, University of the Philippines Marine Science Institute, Diliman, Quezon City, Philippines
- 2024    **Sanchez PGL**, Wang CY, Li IJ, Ota KG. “Rhythmic contractions of the yolk of goldfish, domesticated ornamental fish with diverse dorsoventral patterning traits”, *contributed talk*, 10th Congress of the Italian Society for Evolutionary Biology (Evoluzione2024), Naples, Italy
- Sanchez PGL**. “On the periodic movements of the yolk of the eggs and embryos of goldfish, *Carassius auratus*”, *presentation in the internal meeting of the EcoEvoDevo focus group*, Academia Sinica, Taipei, Taiwan
- Sanchez PGL**, Wang CY, Li IJ, Ota KG. “Rhythmic contractions of the yolk of goldfish, domesticated ornamental fish with diverse dorsoventral patterning traits”, *accepted abstract for contributed talk*, 2024 Meeting of the European Evolutionary Developmental Biology Society (EuroEvoDevo2024), The Evo-Devo of Fish Biodiversity Symposium, Helsinki, Finland [could not attend because of visa restrictions]

- 2024 **Sanchez PGL**. “Goldfish as experimental system to study evolution of/and development under strong selective pressure”, *introductory talk regarding the research activities of the Laboratory of Aquatic Zoology*, visit of delegates from the French National Center for Scientific Research (CNRS) Institute of Biological Sciences (INSB), Yilan Marine Research Station, Academia Sinica, Yilan, Taiwan
- 2023 **Sanchez PGL**. “Yolk dynamics in goldfish: *independent irritability* of goldfish eggs and embryos”, *presentation in the internal meeting of the EcoEvoDevo focus group*, Academia Sinica, Taipei, Taiwan
- 2021 **Sanchez PGL**. “It’s a matter of time: the curious case of the vertebrate segmentation clock – an intro to signaling dynamics in development and disease”, *invited lecture*, Molecular Basis of Human and Plant Diseases course, University of the Philippines Manila, Manila, Philippines
- Sanchez PGL**. “A tail of space and time: on a theory-driven understanding of the vertebrate segmentation clock”, *invited lecture*, Introduction to In-Silico and Meta-Analysis Research: A Webinar for Students and Educators, Institute of Biology, University of the Philippines Diliman, virtual
- Sanchez PGL**, Sonnen K, Tomita T, Mönke G, Merten C & Aulehla A. “Microfluidics-based entrainment of synchronized signaling oscillations in an embryonic tissue”, *oral and poster presentation* (first prize), International Workshop on Mathematical Biology (IWOMB) 2021, virtual
- 2020 **Sanchez PGL**. “Top-down control of embryonic mesoderm segmentation using microfluidics-based entrainment”, *invited talk*, 12<sup>th</sup> Annual Convention of the Philippine Society for Developmental Biology (PSDB), virtual
- Sanchez PGL**, Sonnen K, Tomita T, Mönke G, Merten C & Aulehla A. “Microfluidics-based entrainment of synchronized signaling oscillations in an embryonic tissue”, *accepted abstract for presentation*, Solvay Workshop on Physics of Living Systems: From Molecules To Cells To Whole Organisms, International Solvay Institutes, Brussels, Belgium [cancelled because of COVID19 pandemic]
- Sanchez PGL**, Sonnen K, Tomita T, Mönke G, Merten C & Aulehla A. “Microfluidics-based entrainment of synchronized signaling oscillations in an embryonic tissue”, *accepted abstract for contributed talk*, 12<sup>th</sup> European Conference on Mathematical and Theoretical Biology (ECMTB 2020), Ruprecht-Karls-Universität Heidelberg, Heidelberg, Germany [cancelled because of COVID19 pandemic]
- Sanchez PGL**, Sonnen K, Tomita T, Mönke G, Merten C & Aulehla A. “Microfluidics-based entrainment enables control of oscillations during patterning in mouse embryos”, *flash talk and poster presentation*, Royal Society Meeting on Interdisciplinary Approaches to Dynamics in Biology, Chicheley Hall, Milton Keynes, UK
- 2019 **Sanchez PGL**, Sonnen K, Tomita T, Mönke G, Merten C & Aulehla A. “Taming waves with pulses: controlling collective dynamics in the presomitic mesoderm using entrainment”, *Developmental Biology Unit seminar*, EMBL, Heidelberg, Germany

- 2019 **Sanchez PGL**, Sonnen K, Mönke G, Merten C & Aulehla A. “Microfluidics-based entrainment of signaling oscillations in mouse somitogenesis”, *poster spotlight (5-min talk + poster presentation)*, qBio 2019 conference, San Francisco State University, San Francisco, California, USA
- Sanchez PGL**, Sonnen K, Mönke G, Merten C & Aulehla A. “Universal entrainment principles enable control of oscillations during patterning in mouse embryos”, *poster presentation (poster prize)*, EMBL Lab Day, EMBL, Heidelberg, Germany
- Sanchez PGL**, Mikhaleva S, Ovchinnikova K & Sharan M. “Ally skills hands-on discussion”, *ally skills session (based on materials by Valerie Aurora and Kendra Albert) during the celebration of the International Women’s Day 2019*, EMBL, Heidelberg, Germany
- 2018 **Sanchez PGL**, Sonnen K, Mönke G, Merten C & Aulehla A. “Entrainment of signaling oscillations during segmentation of the presomitic mesoderm”, *Developmental Biology Unit seminar*, EMBL, Heidelberg, Germany
- Sanchez PGL**, Sonnen K, Mönke G, Merten C & Aulehla A. “Microfluidics-based entrainment of signaling oscillations during segmentation of the presomitic mesoderm”, *poster presentation*, CNRS – Jacques Monod Conference on Modeling Cell Fate, Station Biologique de Roscoff, Roscoff, France
- Sanchez PGL**, Sonnen K, Mönke G, Merten C & Aulehla A. “Microfluidics-based entrainment of signaling oscillations in presomitic mesoderm cells”, *poster presentation*, EMBO-EMBL Symposium on Biological Oscillators, EMBL, Heidelberg, Germany
- Sanchez PGL**, Sonnen K, Mönke G, Merten C & Aulehla A. “Investigating signaling oscillations in vertebrate mesoderm segmentation using microfluidics-based entrainment”, *Developmental Biology Unit retreat*, Leistungszentrum Herzogenhorn, Feldberg, Germany
- 2017 **Sanchez PGL**, Sonnen K, Mönke G, Merten C & Aulehla A. “Frequency and phase modulation of oscillatory signaling in mouse PSM cells via microfluidics-based entrainment”, *Developmental Biology Unit seminar*, EMBL, Heidelberg, Germany
- Sanchez PGL**. “Signaling oscillations and spatiotemporal wave patterns in mammalian mesoderm segmentation”, *scientific talk as part of European Learning Laboratory for the Life Sciences (ELLS) Visit to the University of the Philippines Manila as EMBL School Ambassador*, Manila, Philippines  
School Ambassador Diary re: the visit: <https://goo.gl/VXKU1P>
- Sanchez PGL**, Sonnen K, Mönke G, Merten C & Aulehla A. “Dynamic modulation of oscillatory signaling in the mouse PSM via microfluidics-based entrainment”, *selected talk*, Workshop on Physical Concepts in Stem Cell Biology (StemPhys 2017), Niels Bohr Institute and Danish Stem Cell Center, Tisvildeleje, Denmark
- 2015 **Sanchez PGL**. “Prying into prions: an inquiry into strain variations of protein-only prions – their use, their dominance, and their cellular propagation”, *invited talk*, University of the Philippines Manila, Manila, Philippines

2014 **Sanchez PGL**, Leible S, Buljan M, Zhan T & Boutros M. “Development of targeted deep sequencing approach for identification of mutations in cell-free circulating DNA”, *oral presentation*, German Cancer Research Center (DKFZ), Heidelberg, Germany

**Sanchez PGL** & King C-Y. “Functional analysis of SUP35 NM-domain through comprehensive monitoring of gene expression in recombinant *Saccharomyces cerevisiae*”, *poster presentation*, Academia Sinica, Taipei, Taiwan

2013 **Sanchez PGL**. “Brain versus movement disorder”, *a lecture series on amyotrophic lateral sclerosis and X-linked dystonia parkinsonism*, St. Luke’s College of Medicine – William H. Quasha Memorial, Quezon City, Philippines

**Sanchez PGL**. “Conflict of Interest and its implications to personal objectivity, scientific integrity, and public trust”, *oral presentation for bioethics course*, St. Luke’s College of Medicine – William H. Quasha Memorial, Quezon City, Philippines

## PUBLICATIONS

2025 Ota KG, Abe G, Wang CY, Li IJ, **Sanchez PGL**, Chi TZ. Evolutionary insights into muscle fiber distribution in the twin tails of ornamental goldfish. doi: 10.6620/ZS.2025.64-04

2024 **Sanchez PGL**, Wang CY, Li IJ, Ota KG. On the *independent irritability* of goldfish eggs and embryos – a living communication on the rhythmic yolk contractions in goldfish (version 02). doi: 10.1101/2023.11.02.564871 v2  
*corresponding author*

Iglesias Ollé L, Perruchoud C, **Sanchez PGL**, Vogg MC, Galliot B.  
The *Wnt/β-catenin/TCF/Sp5/Zic4* gene network that regulates head organizer activity in *Hydra* is differentially regulated in epidermis and gastrodermis.  
doi: 10.3390/biomedicines12061274

Ota KG, Abe G, Wang CY, Li IJ, **Sanchez PGL**, Chi TZ. Evolutionary insights into muscle fiber distribution in the twin tails of ornamental goldfish. doi: 10.1101/2024.06.03.597082

Iglesias Ollé L, Perruchoud C, **Sanchez PGL**, Vogg MC, Galliot B.  
The *Wnt/β-catenin/TCF/Sp5/Zic4* gene network that regulates head organizer activity in *Hydra* is differentially regulated in epidermis and gastrodermis.  
doi: 10.1101/2024.04.27.591423

Miyazawa H, Rada J, **Sanchez PGL**, Esposito E, Bunina D, Girardot C, Zaugg J, Aulehla A.  
Glycolysis-Wnt signaling axis tunes developmental timing of embryo segmentation.  
doi: 10.1101/2024.01.22.576629

2023 **Sanchez PGL**, Wang CY, Li IJ, Ota KG. On the *independent irritability* of goldfish eggs and embryos – a living communication on the rhythmic yolk contractions in goldfish (version 01). doi: 10.1101/2023.11.02.564871 v1  
*corresponding author*

- 2022 Vogg MC, Ferenc J, Buzgariu WC, Perruchoud C, **Sanchez PGL**, Beccari L, Nuninger C, Le Cras Y, Delucinge-Vivier C, Papasaikas P, Vincent S, Galliot B, Tsiairis CD. The transcription factor *Zic4* promotes tentacle formation and prevents epithelial transdifferentiation in *Hydra*. doi: 10.1126/sciadv.abo0694
- Sanchez PGL**, Mochulska V, Denis CM, Mönke G, Tomita T, Tsuchida-Straeten N, Petersen Y, Sonnen KF, François P, Aulehla A. Arnold tongue entrainment reveals dynamical principles of the embryonic segmentation clock. doi: 10.7554/eLife.79575
- 2021 Vogg MC, Ferenc J, Buzgariu WC, Perruchoud C, Papasaikas P, **Sanchez PGL**, Nuninger C, Delucinge-Vivier C, Rampon C, Beccari L, Vríz S, Vincent S, Galliot B, Tsiairis CD. The transcription factor *Zic4* acts as a transdifferentiation switch. doi: 10.1101/2021.12.22.473838
- Sanchez PGL**. Entrainment of coupled, phase-shifted signaling oscillations in the presomitic mesoderm. doi: 10.11588/heidok.00029209
- Sanchez PGL**, Mochulska V, Denis CM, Mönke G, Tomita T, Tsuchida-Straeten N, Petersen Y, Sonnen KF, François P, Aulehla A. Arnold tongue entrainment reveals dynamical principles of the embryonic segmentation clock. doi: 10.1101/2021.10.20.465101
- Chang CY, Vila JCC, Bender M, Li R, Mankowski MC, Bassette M, Borden J, Golfier S, **Sanchez PGL**, Waymack R, Zhu X, Diaz-Colunga J, Estrela S, Rebolleda-Gomez M, & Sanchez A. Engineering complex communities by directed evolution. doi: 10.1038/s41559-021-01457-5
- 2020 Chang CY, Vila JCC, Bender M, Li R, Mankowski MC, Bassette M, Borden J, Golfier S, **Sanchez PG**, Waymack R, Zhu X, Diaz-Colunga J, Estrela S, Rebolleda-Gomez M, & Sanchez A. Top-down engineering of complex communities by directed evolution. doi: 10.1101/2020.07.24.214775
- Sanchez PGL** & Vianello S. On the (h)edge: the germline precursors of a basal metazoa are induced at the interface between Hedgehog signalling domains. doi: 10.1242/prelights.16775
- 2019 **Sanchez PGL** & Vianello S. (Transiently) Comfortable in its own “skin”: formation of epithelium-like multicellular structures in a unicellular organism through conserved actomyosin-dependent mechanisms. doi: 10.1242/prelights.9812
- Sanchez PGL** & Vianello S. Mind the gap: epiblast geometry at its extraembryonic boundary constrains BMP localization and ensures robust gradient formation. doi: 10.1242/prelights.6820
- 2018 **Sanchez PGL**. On the beauty and wonder of endless forms: a reflection on Embryology Course 2018. published online on *the Node* – community site run by *Development* (2018). <http://thenode.biologists.com/on-the-beauty-and-wonder-of-endless-forms/education/>



## HONORS, AWARDS, AND FELLOWSHIPS

2023 – present	<b>Postdoctoral fellowship, Academia Sinica Postdoc Fellowship Program</b> Academia Sinica, Taiwan
2011 – present	<b>License as chemist</b> Board of Chemistry, Professional Regulation Commission, Philippines
2021 – 2022	<b>Postdoctoral fellowship, Swiss Government Excellence Scholarship</b> Swiss Federal Commission for Scholarships for Foreign Students Swiss FCS
2020 – 2021	<b>Postdoctoral fellowship, EMBL Bridging Postdoctoral Fellow</b> <i>linked to ERC-funded project CollectiveDynamics: collective signaling oscillations in embryonic patterning – revealing underlying principles</i>
2020	<b><i>Magna cum laude</i> (dissertation: 1.0, oral defense: 1.0)</b> PhD/Dr.rer.nat in Developmental Biology and Dynamical Systems Theory joint PhD between the European Molecular Biology Laboratory (EMBL) and Ruprecht-Karls-Universität Heidelberg (Heidelberg University)
2016 – 2020	<b>Predoctoral fellowship, EMBL International PhD Programme</b> <i>linked to ERC-funded project Oscillations: oscillatory signaling dynamics – a quantitative approach to reveal their origin and function in development</i>
2019	<b>Scholarship to attend the PhysBio of the Cell Course in Woods Hole</b> Arthur Klorfein Scholarship and Fellowship Fund
2018	<b>Scholarship awards to attend the Embryology Course in Woods Hole</b> a. Burroughs Wellcome Fund – Embryology Course b. The Company of Biologists Ltd Scholarship – Embryology c. Helmsley Charitable Trust – Embryology d. Horace W. Stunkard Scholarship Fund
2017	<b>Workshop/conference fellowship</b> Workshop on Physical Concepts in Stem Cell Biology (StemPhys 2017) Niels Bohr Institute and Danish Stem Cell Center, Tisvildeleje, Denmark
2016	<b>British Council Ambassador, IELTS Prize</b> British Council in the Philippines
2014	<b>International Research Fellowship (for research internship)</b> Helmholtz International Graduate School for Cancer Research (HIGS) German Cancer Research Center (DKFZ), Germany  <b>International Research Fellowship (for research internship)</b> Taiwan International Graduate Program (TIGP), Academia Sinica, Taiwan
2013	<b>Finalist, Local Biocamp, Novartis Philippines</b>

2011                    **Plaque of Recognition for Filipino Chemists**  
 The Amando Clemente Memorial Foundation, Inc.  
*linked to ranking first in the 2011 nationwide licensure examinations for chemists in the Philippines*

**1<sup>st</sup> Place, Philippine Chemistry Licensure Examinations**  
 Board of Chemistry, Professional Regulation Commission, Philippines

***Magna cum laude***  
 Bachelor of Science (BSc) in Biochemistry  
 University of the Philippines Manila

## **SERVICE, VOLUNTEERING, AND OUTREACH**

2024 – present            **Member**  
 Philippine Society for Mathematical Biology (PSMB)

2021 – present            **Member**  
 Philippine Association of Marine Science (PAMS)

2020 – present            **Member**  
 Philippine Society for Developmental Biology (PSDB)

2019 – present            **Signatory**  
 San Francisco Declaration on Research Assessment (DORA)  
<https://sfdora.org/read/>

2023 – 2024                **Board Member**  
 Philippine Society for Developmental Biology (PSDB)

2023 – 2024                **Thesis Adviser, Undergraduate Thesis in Biochemistry**  
*adviser of Crisandro Allen Lazo, co-supervised with Dr. Junie B. Billones*  
 Department of Physical Sciences and Mathematics  
 University of the Philippines Manila

2023                         **Organizer, 15th Annual Convention of the PSDB**  
 Philippine Society for Developmental Biology (PSDB)

2023                         **Organizer, MARVELous Goldfish - FINTastic Forms**  
 Academia Sinica, Taipei, Taiwan  
*exhibit of the Laboratory of Aquatic Zoology for the 2023 Open House*

**Organizer, 2023 PSDB Masterclass**  
 Philippine Society for Developmental Biology (PSDB)  
*masterclass (lecture and hands-on workshop) on plant and animal developmental biology (and pedagogy) for educators*

**Organizer, 2023 PSDB Webinar Series**  
 Philippine Society for Developmental Biology (PSDB)  
*webinar series on plant and animal developmental biology*

- 2022                    **Organizer, Skeletal Staining Exhibit**  
Academia Sinica, Taipei, Taiwan  
*exhibit of the Laboratory of Aquatic Zoology for the 2022 Open House*
- 2021                    **Oscillations [premiered 23 October 2021]**  
with Iván Pérez and Jenny Mahla of the Dance Theatre Heidelberg  
*a trans-disciplinary collaboration (2019-2021) comparing and contrasting oscillations in embryonic development and in dance*  
introductory video: <https://fb.watch/6c542xzCkx/>  
documentary movie: <https://youtu.be/rT5I-itcA9I>
- 2021                    **Contributor, Promo Video for the Swiss Gov't Excellence Scholarships**  
with the Embassy of Switzerland in the Philippines  
<https://fb.watch/adccA70lme/>
- Judge, Best Undergraduate Thesis in Biology**  
Department of Biology, University of the Philippines Manila
- 2019 – 2021           **preLighter, Contributor**  
with Stefano Vianello  
preLights: preprint highlights, selected by the biological community  
The Company of Biologists
- 2019                    **Volunteer/Instructor, EMBL Summer School for Undergraduates**  
with the EMBL International PhD Programme Graduate Office  
*summer program targeting advanced undergraduate students in chemistry, physics, engineering, mathematics and computer sciences*
- 2019                    **Organizer, LGBT+ STEM Day at EMBL**  
EMBL Equality and Diversity Committee and EMBL Staff Association  
*international day of LGBTQ++ in science, technology, engineering, & math*
- Organizer, Bake Sale for International Day Against Homophobia, Transphobia, and Biphobia (IDAHOTB)**  
EMBL Equality and Diversity Committee and EMBL Staff Association  
*fundraising event for KOSI.MA, a sexually-transmitted infections-related support and testing center in Mannheim, Germany*
- Facilitator, Ally Skills Hands-On Discussion**  
with the Equality and Diversity Committee & Staff Association  
European Molecular Biology Laboratory (EMBL)  
*ally skills session during the International Women's Day 2019*
- 2018 - 2019           **LGBTQ++ Community Representative**  
Equality and Diversity Committee  
European Molecular Biology Laboratory (EMBL)

2018	<p><b>Graduate Student Committee, EMBL Benefit Gala</b>  with the EMBL International PhD Programme Graduate Office and EMBL Office of Resource Development  <i>fundraising event for The EMBL Summer School for Undergraduates</i></p> <p><b>Organizer, LGBT+ STEM Day at EMBL</b>  EMBL Equality and Diversity Committee and EMBL Staff Association  <i>international day of LGBTQ++ in science, technology, engineering, &amp; math</i></p>
2017	<p><b>Organizer, Inaugural Rainbow Beer Session</b>  EMBL Equality and Diversity Committee and EMBL Staff Association  <i>inaugural get-together of LGBTQ++ at EMBL, their friends, and their allies</i></p>
2017	<p><b>Organizer, 19<sup>th</sup> EMBL PhD Symposium</b>  Bridging the Gaps: Interdisciplinary Approaches in Life Sciences  Heidelberg, Germany</p> <p><b>Coordinator, Basic Teaching Module of EMBL Predoc Course 2017</b>  EMBL International PhD Programme (EIPP)  <i>coordinated and organized the first teaching module of predoc course – PhD core course in molecular systems biology</i></p>
2013 – 2015	<p><b>RITM-AIDS Research Group (ARG)-trained Educator and Counselor</b>  LoveYourself, Inc. with the Research Institute for Tropical Medicine (RITM)  <i>actively advocated for HIV awareness, education, screening, and counseling, especially for at-risk populations in the Philippines</i></p>
2010	<p><b>Medico-Legal Trainee</b>  Forensic Service, National Bureau of Investigation (NBI), Philippines</p>
2009 – 2010	<p><b>Vice President for Internal Affairs</b>  University of the Philippines Biochemistry Society  University of the Philippines Manila</p>