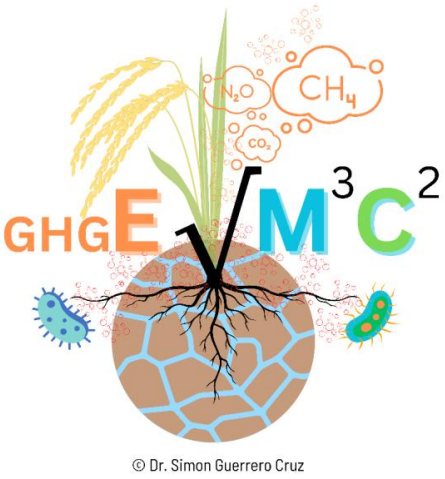
Curriculum Vitae

Guerrero-Cruz, Simon

The root of GHG Emissions =
Microbiology & Management for the Mitigation
of Climate Change



Contents

Background information

Personal Information

Full name: **Guerrero-Cruz, Simon**

Date of birth: 04 – September - 1985

Nationality: **Dutch,** naturalized. Mexican at birth.

Researcher Unique Identifiers:

- ORCID Id: 0000-0002-9111-8279 https://orcid.org/0000-0002-9111-8279
- LOOP ID: 373384 https://loop.frontiersin.org/people/373384/overview
- SCOPUS: 57188752602 https://www.scopus.com/authid/detail.uri?authorId=57188752602
- LinkedIn: https://www.linkedin.com/in/simonrgc/

Academic Background:

2013 - 2018 PhD, Environmental Microbiology, **Radboud University Nijmegen**, **The Netherlands**
"Eco-physiology of Nitrite- and Nitrate-dependent Methane Oxidation in rice paddy soils and wastewater" ISBN 978-94-028-1256-5

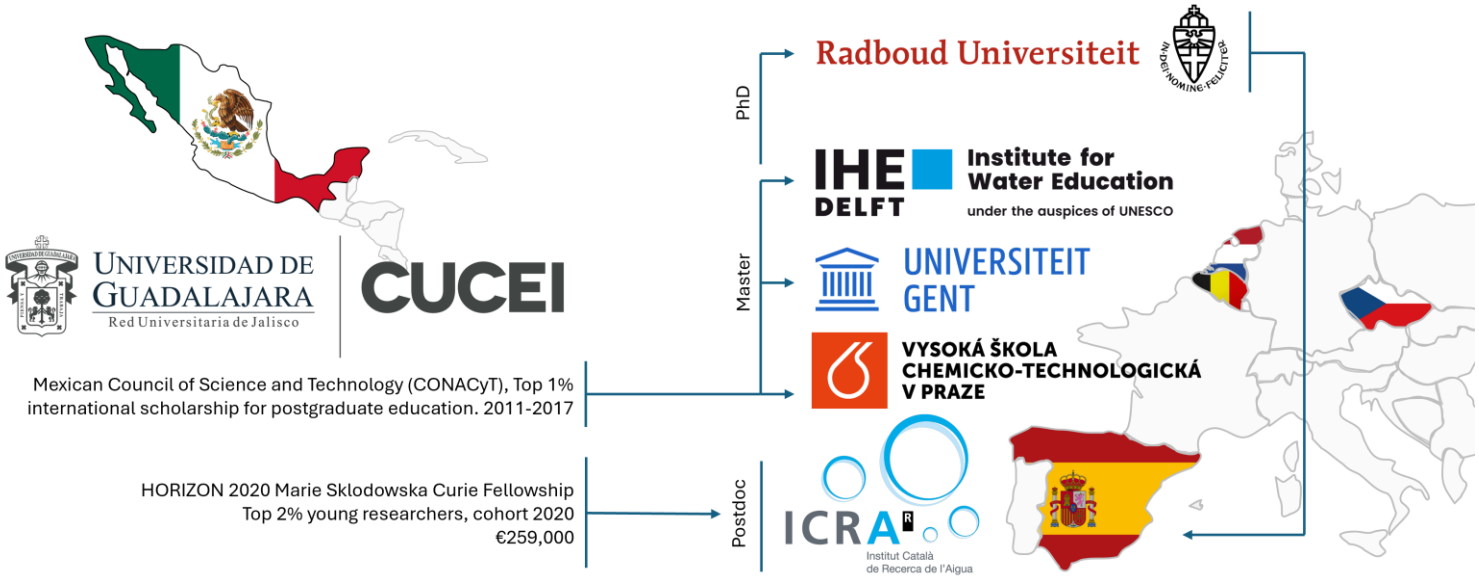
2011 - 2013 Master of Science, Environmental Sciences
UNESCO-IHE Institute for Water Education Delft, **The Netherlands**
"Metagenomics applied to the characterization of microbial communities in a full-scale anammox reactor in wastewater treatment"

2012 - 2013 Master of Engineering, Environmental Technology and Engineering
Bioscience Engineering, **Gent University**, **Belgium**

in collaboration with:
Vysoká škola chemicko-technologická v Praze, **Czech Republic**

2005 - 2010 Bachelor of Science, Chemistry, Biology and Pharmaceutical Technology
Faculty of Exact Sciences and Engineering, **University of Guadalajara**, **Mexico**

2001 - 2004 VET, Technologist in Pharmaceutical chemistry
Centro de Enseñanza Tecnica Industrial, **Mexico**



Current position

Associate Professor
01/09/2025 – Present.
Assistant Professor
01/07/2021 – 31/08/2025.
Department of Water Resources and Environmental Engineering (WREE), School of Engineering and Technology (SET), Asian Institute of Technology (AIT), **Thailand**.

Global acquisition of projects, and Development of international research networks.

1. Funding organization: EQT Foundation, **Sweden**.
Under the program: "Breakthrough Science Grants: Methane Solutions".
Project: MicroSPARK
"Sparking Fairy Dust: Activating Methanotrophy in Rice Paddies through Missing Micronutrients"
Funds: €100,000 (Dec 2024 – Dec 2026). **Role:** Single PI.

2. Funding organization: Asia Pacific Network.
Project: "Enhancing the Science-Policy Interface to Manage Microplastic Influx from Major Cities".
Funds: 80,000 USD (Oct 2024 – Sept 2026). **Role:** Co-PI.
Partners: Asian Institute of Technology, **Thailand**, with HCMC University of Industry and Trade (HUIT), **Vietnam** and Universitas Pertamina (UP), **Indonesia**.

3. Funding organization: HORIZON **Marie Curie** Actions, Staff Exchange 2022.
Project: "MicroSOS: Plants crying for microbial help for climate-resilient agriculture"
Funds: €1,600,800 from which €257,600 are for AIT (Jan 2024 – Dec 2027).
Role: Associated Partner representative.

Partners: Malaga University as leader, **Spain**, Agricultural University of Athens, **Greece**, Tuscia University, **Italy**, Leiden University, Dutch Royal Institute of Ecology NIOO, and The Wheater Makers, **The Netherlands**, agro-industries AkiNao and DeSangosse from **France**.

4. Funding organization: EU- Southeast Asia Joint Funding Scheme (JFS-2021).
Project: MicroGRICE "Microbial GHG reduction in RICE".
Funds: €390,000 from which €115,000 are for AIT (Apr 2023 – Mar 2026).
Role: Leading PI, I successfully assembled and led an international consortium.
Partners: Leiden University, **The Netherlands** and Leibniz University Hannover, **Germany**.

5. ERASMUS+ programme: INOWASIA. I formed part of the academic committee with members from **France**, **Spain**, **Cambodia**, **Laos** and **Vietnam**. **Theme:** water sanitation capacity building for the future water leaders in Southeast Asia.

6. Currently working on the following project creation:

- Comparative analysis of soil micronutrients for methane mitigation in rice, CAS **China**, submitted and awaiting result.
- Social drivers for GHG-mitigation adoption, call from National Geographic. In collaboration with farming cooperatives from Isaan region in Thailand. Submitted.
- ERC starting grant 2026 call. I am preparing a concept for an ERC in collaboration with Galway University **Ireland**. If successful in the call 2027, this has portability to ETH. To be submitted.

Global expert knowledge sharing, Outreach & Cooperation.

Country	Date	Organization & Venue	Event	Remark
Thailand, Bangkok	17.09.2025	EURAXESS ASEAN	Meeting for experience sharing, where I was invited further to support their events as a success case and testimonial in the SE Asia region.	
The Netherlands, Texel	09-11.07.2025	Dutch Royal Institute of Sea Research, NIOZ	Collaboration meeting	Under the SET Faculty Development Program 2025. Collaboration on plastic and microplastic research on mangroves.
Thailand, Bangkok	31.10.2024	UNITED NATIONS ESCAP	High Level Event on the Global N_2O Assessment	I was a reviewer for the Nitrous Oxide Assessment and participated at the launch event.
Indonesia, Jakarta	07-10.10.2024	Universitas Pertamina	Kick-off collaboration meeting	APN Project: Enhancing the Science-Policy Interface to Manage Microplastic Influx from Major Cities into the Oceans in Southeast Asia.
China, Changsha	22-26.06.2024	CAS, Institute for Subtropical Agriculture	4th Int Sym Subtropical Agriculture	Invited and sponsored by my network in CAS, to give a keynote talk.
Spain, Madrid and Segovia	13-14.03.2024	IE University	Invited & sponsored speaker	I gave a series of mini presentations for the Bachelor program in Sustainability.
Singapore	29-30.01.2024	Nanyang Technical University	Network visit	Per invitation by a Thai university, I visited **Error! Reference source not found.** to liaise research funding and cooperation.
Philippines, Quezon	20.10.2023	University of The Philippines, Diliman	AIT promotion and guest lecture	Guest talk to Bachelor and Master students.
Philippines, Manila	16-19.10.2023	The Methane Hub, **Chile**	International Rice Congress	The NGO The Global Methane Hub approached me and sponsored me to participate in a regional convening on GHG mitigation to explore collaborations.
Thailand, Bangkok	17.05.2023	UNITED NATIONS ESCAP	Clean Air and Climate Conference 2023	The Clean Air and Climate Coalition invited me to a closed session to discuss Asia GHG emissions. See page 38, and Evidence annex page
Thailand, Bangkok	01.05.2023	UNITED NATIONS ESCAP	Greening Education in Asia	I was approached to join a closed discussion on climate change in education to transform education in Asia.
USA, San Francisco	10-14.04.2023	Spark Climate Solutions. The Institute Building.	Atmospheric Methane destruction, closed door convening.	Spark Climate Solutions, reached out to me, invited & sponsored me to fly to San Francisco to attend a global convening on Methane destruction.

Country	Date	Organization & Venue	Event	Remark
Japan, Tokyo	17-21.07.2022	Japanese Government	Marine Plastic Abatement closure trip.	
Vietnam, Ho Chi Minh City	31.05.2022	Van Lang University	AIT Hub Vietnam	Participated fully sponsored as part of an official delegation to explore AIT's expansion to Vietnam.

Formation of human resources through academic teaching and supervision.

- Environmental Chemistry and Laboratory, 5 editions in August semester 2021 - 2025.
- Environmental Impact Assessment, 4 editions in January semester 2022 - 2025.
- Applied Microbiology and Laboratory, 2 editions in January semester 2023 and 2024. Under AIT's ongoing transformation, I initiated Pedagogical development by splitting this course to facilitate curriculum flexibility and specialization:
  - Fundamentals of Microbiology in Environmental Engineering, 3 renditions (2 in 2024 and 1 in 2025).
  - Applied Microbiology and Laboratory, one rendition in 2024.

In addition, I created new course curricula with innovative concepts, by introducing a new field in my program. These courses have had 4 renditions during the Inter semester 2022 - 2025:

- Microbiology of anthropogenic ecosystems and management.
- Microbiology of Climate Change Mitigation and Resource Recovery.

- I have supervised 28 graduated master's students until July 2025, and 6 more under supervision are expected to graduate in May 2026.
- Currently supervising 2 Doctoral students, intake August 2022, expected graduation in May 2026.
- Participated in 39 thesis committees both graduated Master and PhD.

See Annex 1 for Supervised thesis.
See Annex 2 for Teaching summary.
See Annex 3 for Service as committee member.

Societal relevance

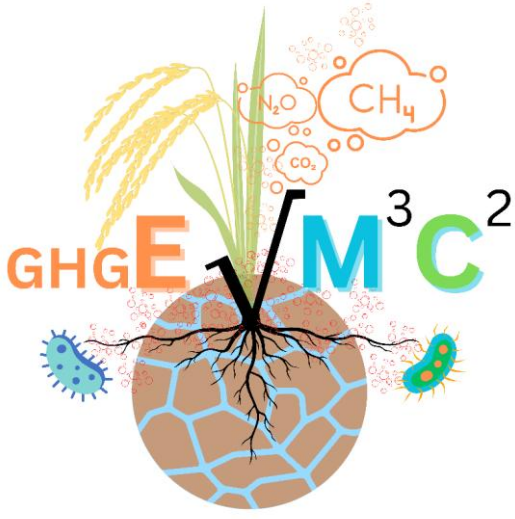
My work addresses a crucial global challenge: GHG mitigation from human-mismanaged ecosystems, i.e., rice agriculture, wastewater, wastewater treatment, soils, small water bodies meant as Nature-based Solutions (NbS). I focus on rice agriculture, a sector where interventions are not as straightforward (unlike livestock, fossil fuels).

My work is centered around microbiology, a field that has been subject to a global call for action:

- November 2023: 28th **United Nations** Climate Change Conference (**COP28**).
  - Small organisms with big climate impact. Nat Microbiol 8, 2213–2214 (2023). https://doi.org/10.1038/s41564-023-01557-x
  - Bourzac, K. 2023. **Microbiologists at COP28 push for a seat at the climate-policy table**. https://doi.org/10.1038/d41586-023-03765-1
- July 2024: Peixoto, R., Voolstra, C.R., Stein, L.Y. et al. (2024). **Microbial solutions must be deployed against climate catastrophe**. Nat Commun 15, 9637. https://doi.org/10.1038/s41467-024-53680-w
  A global call to develop and deploy microbial biotech to solve climate change issues, including GHG mitigation and soil restoration.
- July 2025: The International Union for Conservation of Nature (**IUCN**) launched its **Microbial Conservation Specialist Group** (MCSG).
  Gilbert, J.A., Peixoto, R.S., Scholz, A.H. *et al.* (2025). Launching the IUCN Microbial Conservation Specialist Group as a global safeguard for microbial biodiversity. *Nat Microbiol*. https://doi.org/10.1038/s41564-025-02113-5
  Goals:
  - To incorporate microbial metabolic and ecological resilience into global preservation efforts.
  - Map existing microbial conservation projects, e.g., soil microbiome rewilding.
  - Develop criteria to incorporate and optimize their application and assess their success.

I have coincidentally, and unaware of these developments, been developing that agenda in my own research which has culminated in my self-adopted research theme:

The root of GHG Emissions =
Microbiology & Management for the
Mitigation of Climate Change



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This theme is key to everything I do, including:

- Implementing this theme vision into the postgraduate curriculum of the Environmental Engineering and Management program at the Asian Institute of Technology. This means I am planting this knowledge seed that no one else is bringing to this region, in the future environmental engineers that study at AIT from all over Asia.
- I develop projects oriented to field-based microbial mitigation strategies with direct agricultural relevance in the rice sector, pivotal for the future of Asia GHG emissions.
- I am developing this field in SE Asia, a region commonly underrepresented, executing local action with global vision.

Global Policy, Education, and Management engagement

I am actively engaging with diverse kinds of stakeholders.

- **UNEP Clean Climate & Air Coalition**, I was invited to participate in a closed session to discuss Asia GHG emissions and the policy and technological challenges for implementation. May 2023.
- **UNEP Clean Climate & Air Coalition**, I was one of 36 selected reviewers for the Nitrous Oxide Assessment, the first assessment worldwide on Nitrous Oxide. I attended the launch event and participated in discussions at **UN ESCAP**.

UN ESCAP participations

- **Spark Climate Solutions** invited & sponsored me to fly to San Francisco with all expenses paid, to attend this unique per-invitation private convening on Methane destruction under the auspice of Stanford University. During the convening on Atmospheric Methane destruction held at "The Institute" tower in San Francisco, we covered the current field trends in diverse methane removal technologies including chemical oxidation, photocatalysis, biological removal and combinations oriented to low concentration sources. This is a movement to change the policy landscape in Climate Change mitigation.
- **The Global Methane Hub**, contacted me, invited me and sponsored me to attend a close convening to establish liaisons for an Asian front on Methane mitigation. Venue: 6th Rice Congress in Pasay City, Philippines.
- **UN ESCAP Bangkok** invited me to a closed session on Education in Climate Change for Asia. This event was the "Greening Education" side event from the UN ESCAP session on Climate Change and the Right to Education event in Bangkok. We discussed the outlook for development in education that accounts for climate and protect education from the effects of climate change. April 2023.

- I participated in the IPCC 7th Assessment pre-scoping sessions.
- I was a reviewer for the UNEP GEO-7 Assessment. The Global Environment Outlook (GEO).
- I participated in the facilitation of the Environment and Emergencies Training (EET) in Hua Hin Thailand, 3-8 Nov 2024. This was to support the Coordination of Humanitarian Affairs (OCHA) and the Regional Office for Asia and the Pacific (ROAP), from UNITED NATIONS.

Innovative pedagogical development

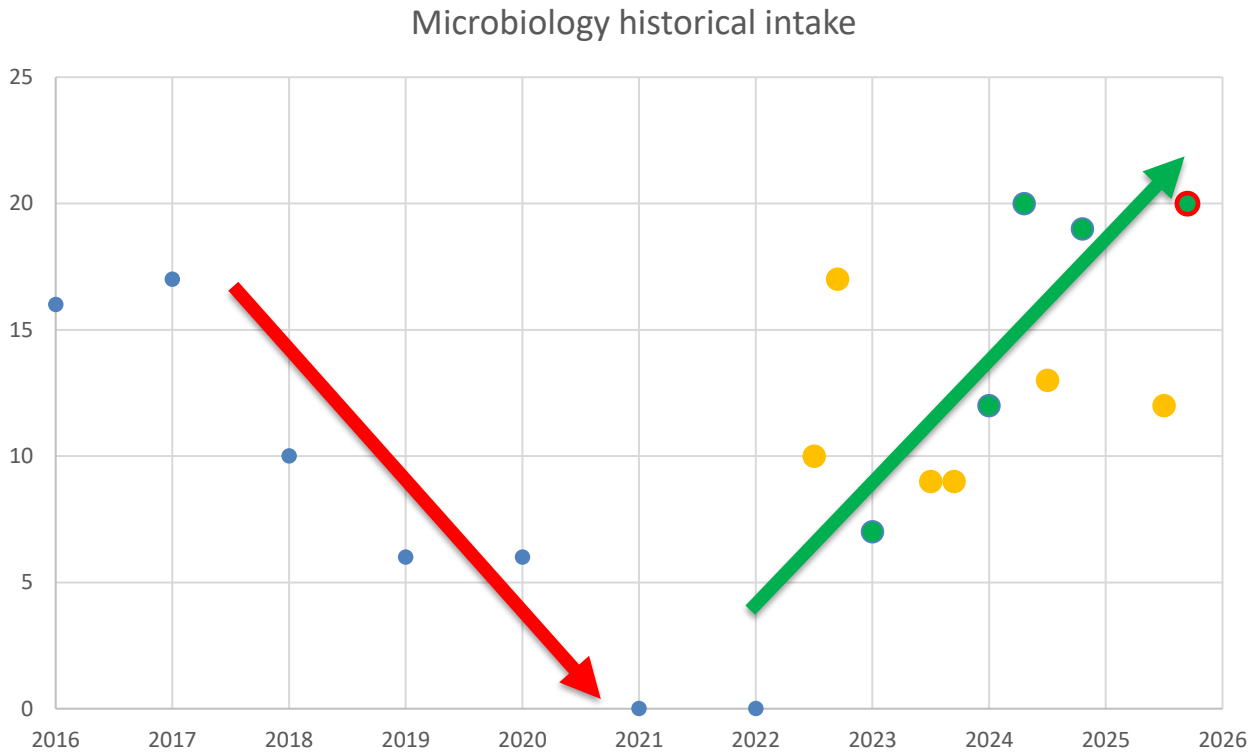
Following the foundations of the societal relevance of my work, I incorporate that into my duties as a teacher. I have revolutionized microbiology education in the Environmental Engineering and Management program in AIT, by:

1. Reviving the interest of students in a dead subject.
2. Reforming the microbiology curriculum to enable flexibility in curriculum design.
3. Introducing a new field with specialized elective courses that enable thematic education pathways for students that align with emerging global calls for action.

1. Revival of Microbiology in EEM/AIT

I was hired as an environmental microbiologist, as main expertise needed. When I arrived in Aug 2021, I realized microbiology as a subject, was dead. I had not been opened since 2020, and the curriculum was outdated with an old vision of traditional microbiology for water quality analysts (Graph below, blue dots). I started to do independent reforms by creating electives that addressed my vision in environmental GHG mitigation and carbon recovery through microbial technologies, the early stages of my research theme that coincidentally aligned with the current global calls for action. See **Societal relevance**.

Between 2021-2022, students got to know my style and started joining my newly created summer electives in 2022 (graph below, orange dots). Since then, my summer intake has remained constant, and my normal semester intake is on the incline (graph below, green dots), demonstrating my impact as a lecturer with innovative fields of study that attracts high intake numbers.



2. Reforming the microbiology curriculum.

Next to the creation of new electives, I also reformed the old microbiology course. With my reforms in microbiology, students can customize their desired path: solid theory background on microbiology applied to environmental solutions or practical approach in the laboratory, making the subject much more appealing since not all students strive for a laboratory career.

3. New field of Microbiology in Environmental Engineering and Climate Change.

Climate Change is the most important global challenge we face, yet in AIT little attention is given to the mechanistic drivers of the root cause: biogenic Greenhouse Gases (GHGs). Microorganisms are the main generators of GHG in all ecosystems globally. Furthermore, microbial applications and management of the environmental conditions that rule microbial response; are crucial for mitigation at scale.

Human activities such as agriculture, waste generation, both organic solid waste and wastewater, represent massive sources of GHG emissions under a growing population as in Asia. 4 billion people rely on rice production, an extremely damaging activity for GHG emissions; and megacities are uncontrolled & mismanaged sewage hotspots.

Global reports, initiatives, and calls for action are bringing microbiology as a key field against climate change, GHG emissions and the restoration of planetary health:

2019. Cavicchioli, R., Ripple, W.J., Timmis, K.N. et al. **Scientists' warning to humanity: microorganisms and climate change**. Nat Rev Microbiol 17, 569–586. https://doi.org/10.1038/s41579-019-0222-5

2023:

Small organisms with big climate impact. Nat Microbiol 8, 2213–2214 (2023). https://doi.org/10.1038/s41564-023-01557-x

Bourzac, K. 2023. Microbiologists at COP28 push for a seat at the climate-policy table. https://doi.org/10.1038/d41586-023-03765-1

2024:

Peixoto, R., Voolstra, C.R., Stein, L.Y. et al. (2024). Microbial solutions must be deployed against climate catastrophe. Nat Commun 15, 9637. https://doi.org/10.1038/s41467-024-53680-w

2025:

American Society for Microbiology: **Microbial Solutions for Climate Change: Toward an Economically Resilient Future**.

The International Union for Conservation of Nature (IUCN) launched its Microbial Conservation Specialist Group (MCSG).

Gilbert, J.A., Peixoto, R.S., Scholz, A.H. *et al.* (2025). Launching the IUCN Microbial Conservation Specialist Group as a global safeguard for microbial biodiversity. *Nat Microbiol*. https://doi.org/10.1038/s41564-025-02113-5

These global initiatives, coincide with my loner initiatives in AIT, making my field and efforts culminate into the alignment of my research with one of the most important fields today: Microbiology applied to climate change. For this, I have created a set package of courses that addresses main axis of microbiology applications in environmental engineering and climate change mitigation.

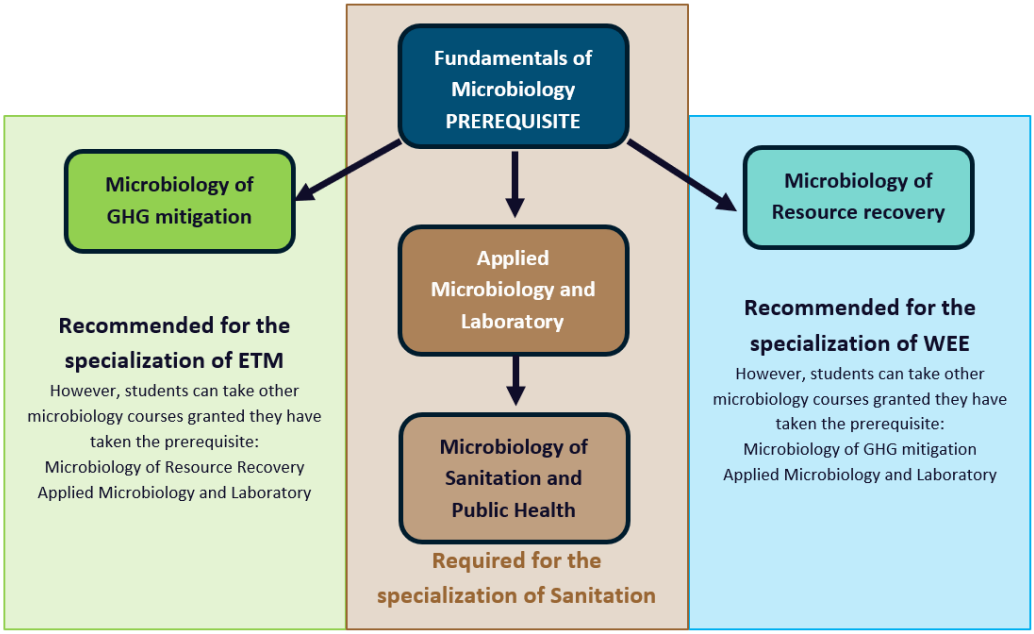
1. ED78.9038: Fundamentals of Microbiology for Environmental Engineering: where the very basics of how microorganisms work is taught. Students come from different backgrounds and this course teaches them the presence, relevance, and functioning of microorganisms, and examples of where they matter in geochemical cycling and emission control at a global scale.

2. ED78.9039: Applied Microbiology and Laboratory: in this course the emphasis on traditional water quality methods is removed. The focus on water and sanitation has been shifted to the environment and the anthropogenic ecosystems where attention is needed: wastewater, rice agriculture.

3. ED78.9035: Microbiology of GHG mitigation in anthropogenic ecosystems. I focus on how microorganisms are both drivers of GHG production and climate change in key anthropogenic ecosystems: wetlands, rice paddies, livestock, and wastewater. In addition, we discuss the management strategies to mitigate these emissions.

4. ED78.0936: Microbiology of Resource Recovery. I focus on microbial technologies to recover carbon biopolymers from waste, energy recovery as electricity, and carbon capture with microbial solutions.

5. Microbiology of Sanitation and Public Health. A course to be created to align with the failed and never launched 1-y master program in Sanitation, which is now a sub specialization in EEM.



In line with AIT's 5-year transformation plan (2026-2030), I am designing the following courses to fill important gaps I see in the current curriculum, and that are relevant for environmentalists and other disciplines as well.

- Current challenges in environmental infrastructure flaws, impacts, and future.
- Emerging Global Environmental Processes in a changing climate.
- Plastic and Microplastic pollution in Marine and Terrestrial ecosystems.

These courses will offer new perspectives and broaden the students frame of reference to tackle current and emerging environmental challenges.

See Annex 2: Teaching summary

Previous positions

Postdoctoral fellow researcher

2020 – 2021 **Catalan Institute of Water Research** (ICRA), Girona, **Spain**

I created my own postdoctoral position at ICRA by winning my H2020 Marie Curie Individual Fellowship €259,000. A proposal written autonomously and independently, that won me the Seal of Excellence by the European Commission in the cohort 2018.

Project "MICROWATER": anaerobic microbiology in wastewater treatment systems.
Conducted research on microbial biorefineries for anaerobic waste into valuable polymers and reviewed the state-of-the-art of methane microbiology and the prospects for application.

Lecturer & Research Project Lead

2020 – 2020 **BioCentre, HAN University of Applied Sciences**, **The Netherlands**

Project creation and management. I led the preparation of proposals oriented for small scale projects form industrial local subsidies, for applied projects related to a bio-based economy.

University lecturer at Bachelor and master level:

- Bachelor Dutch program "Biologie en Medische Laboratoriumonderzoek" (bachelor's in molecular Life Sciences) teaching:
  - Microbiology in Medical Diagnostics
- International bachelor program "Molecular Life sciences" teaching:
  - Biotechnology specialization, 4th year
  - Module on Bioprocess engineering and downstream processing in the minor of Biorefinery.
- International professional part-time Master program "Molecular Life Sciences" teaching:
  - Biotechnology and downstream processing in the Production of Biomolecules module
  - Research proposal workshops.

Supervision of bachelor research projects.

Senior Specialist Microbiology

2019 – 2019 Centre of Expertise in Microbiology. **Merck & Sharp & Dohme** (MSD), Global position based in **The Netherlands**.

Global coordinator: I led global campaigns to harmonize microbial analytical methods across laboratories around the world within the Merck & Sharp & Dohme network, to ensure robust analytical platforms in compliance with international regulatory frameworks.

Risk Assessment professional: I resolved investigations on microbial contamination and facilitated microbial risk assessments in manufacturing and quality. Remotely assisted cases in **Puerto Rico**, **Brazil**, **USA**, **France**, **Germany**, **Switzerland**, **Italy**, **Singapore**.

International consulting: I executed international assignments as consultant:

- Preparation and execution of on-site & risk-based environmental monitoring and baseline plans for a new biotech facility in Dublin, **Ireland**. Assisted on-site in multiple site visits to supervise production processes, and facility design, gathering & managing information and driving discussions as a facilitator on microbial risk prevention.
- Preparation, execution, documentation and follow up; of a preventive end-2-end microbial risk assessment for vaccine production in Philadelphia **USA**. On-site execution in a large multidisciplinary group, guiding the implementation of preventive actions against microbial contamination.

PhD researcher

2019 – 2019 Radboud University at the Microbiology department from the former Institute of Water and Wetland Research (IWWR). **The Netherlands**.

- I researched and developed new knowledge on novel anaerobic microbial processes in methane mitigation in engineered ecosystems (rice agriculture and wastewater), through bioreactor culturing, physiology, and metagenomic approaches (NGS).
- I participated in 11 scientific research manuscripts (3 as first author, 3 as second, 5-other authorships) at international Q1 journals and wrote a book titled: "Ecophysiology of nitrate & nitrite-dependent methane oxidation", ISBN: 9789402812565.
- Developed my teaching skills as a co-lecturer in university laboratory courses: Applied and Environmental Microbiology for 3 years.
- I developed my communication skills at international conferences and guest speaker:
    - 2015 - Nitrogen cycle conference, oral presentation. Aberdeen, **Scotland**. (Conference).
    - 2016 - INOVATION MATCH MEXICO, sponsored guest speaker. Guadalajara, **Mexico**.
    - Gordon Conference in C-1 Microbial metabolism. Waterville Valley, **USA**. (Conference).
    - 2017 - International Water Association conference, poster presentation. Ghent, **Belgium**. (Conference).
    - 2018 - Guest speaker at the Catalan Institute of Water Research. Girona, **Spain**.

Environmental risk and impact analyst

2010 – 2011 INAMBIO S.A. de C. V. Environmental Consulting. **Mexico**.

- I guided numerous clients through compliance with environmental regulations during environmental risk assessments for diverse projects: Development of infrastructure for the distribution of fossil fuels, Construction of habitational developments in urban areas, Diverse civil protection related projects.
- I grew as a risk consultant by performing site inspections, delivering successful project management, and processing large amounts of information from multiple sources on regulatory compliance, physical environment and civil risk to yield a complete report for the client's needs.

Fellowships, Awards & Grant summary

2025 **Faculty Development Program 2025**, 2000 USD.
Asian Institute of Technology, **Thailand**. Traveling grant for collaboration and capacity development.

2024 – 2026 **EQT Foundation**, **Sweden**. €100,000
Under the program: "Breakthrough Science Grants: Methane Solutions".
Project: MicroSPARK
"Sparking Fairy Dust: Activating Methanotrophy in Rice Paddies through Missing Micronutrients". **Role:** Single PI.

2024 – 2026 **Asia Pacific Network**. 80,000 USD
Project: "Enhancing the Science-Policy Interface to Manage Microplastic Influx from Major Cities". **Role:** Co-PI.

2024 – 2027 HORIZON **Marie Curie** Actions, Staff Exchange 2022. €1,600,800 (€257,600 for AIT).
Project: "MicroSOS: Plants crying for microbial help for climate-resilient agriculture"
Funds:
Role: I Initiated and supported the proposal development as Associated Partner representative.

2023 **The Global Methane Hub**. A delegate waiver to attend the 6th International Rice Conference in **The Philippines**. Value at €1,600.

2023 – 2026 **EU- Southeast Asia Joint Funding Scheme** (JFS-2021). €390,000 (€115,000 for AIT).
Project: MicroGRICE "Microbial GHG reduction in RICE".
Role: Leading PI, I successfully assembled and led an international consortium.

2021 – 2022 **Research Initiation grant**, €5,000.
Asian Institute of Technology, **Thailand**. Funding for new faculty to start research activities.

2021 **Research infrastructure fellowship**, €1,500
Asian Institute of Technology, I won a fellowship from the government of **India**, to acquire laboratory equipment.

2020 – 2021 **HORIZON2020 Marie Sklodowska Curie actions** 2019, €259,000.
I created my own postdoctoral position at the Catalan Institute of Water Research (ICRA), Girona, **Spain**

2017 **Radboud research fellowship for conference attendance**
Radboud University at the Microbiology department, Shoengen Institute for Microbiology. **The Netherlands**. €500

2016 **Radboud research fellowship for conference attendance**
Radboud University at the Microbiology department, Shoengen Institute for Microbiology. **The Netherlands**. €700

2016 **INNOVATION MATCH**, **Mexico**. Guest speaker sponsorship
A grant to attend the Innovation Match conference as a guest speaker, €1,000

2015 **Radboud research fellowship for conference attendance**
Radboud University at the Microbiology department, Shoengen Institute for Microbiology. **The Netherlands**. €500

2013 – 2017 **National Council of Science and Technology of Mexico (CONACyT).** Postgraduate fellowships. Top 1% Mexican students. €40,000, as supplementary scholarship for doctoral studies.

2012 **Mexican Ministry of Education.** Top-up scholarship for international postgraduate education. €3,000

2011 – 2013 **National Council of Science and Technology of Mexico (CONACyT).** Postgraduate fellowships. Top 1% Mexican students. €48,000, for postgraduate studies in Europe.

Certificate delivered by the European Commission,
as the institution managing Horizon 2020,
the EU Framework Programme for Research and Innovation 2014-2020

The project proposal **845506, MICROWATER**

Unravelling the eco-physiology of novel anaerobic microbes to mitigate detrimental emissions during wastewater management

Submitted under the Horizon 2020's **Marie Skłodowska-Curie actions**
call **H2020-MSCA-IF-2018** of **12 September 2018**
by
Simon Guerrero Cruz
and
FUNDACIO INSTITUT CATALA DE RECERCA DE L'AIGUA
CALLE EMILI GRAHIT EDIFICI H20 101
17003 GIRONA
Spain

following evaluation by an international panel of independent experts

WAS SCORED AS A HIGH-QUALITY PROJECT PROPOSAL IN A HIGHLY COMPETITIVE EVALUATION PROCESS*

This proposal is recommended for funding by other sources since Horizon 2020 resources available for this specific Call were already allocated following a competitive ranking.

* This means passing, with a score of 85% or more, all stringent Horizon 2020 assessment thresholds for the 3 award criteria (excellence, impact, quality and efficiency of implementation) required to receive funding from Horizon 2020.

Carlos Moedas
Commissioner for Research
Science and Innovation

Tibor Navracsics
Commissioner for Education, Culture
Youth and Sport

Brussels, 19/03/2019

Supervision experience

At the Asian Institute of Technology.

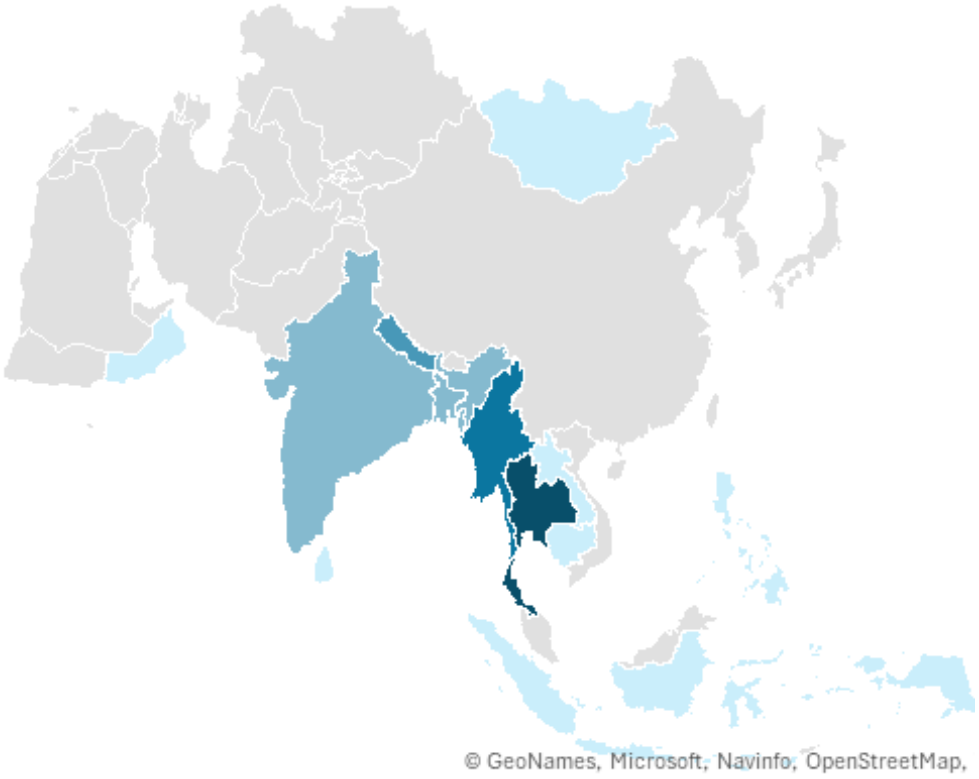
I have supervised the following students, all under the Environmental Engineering and Management (EEM), Department of Water Resources and Environmental Engineering (WREE). School of Engineering and Technology (SET), Asian Institute of Technology (AIT), Thailand

2022 – 2026 2 PhD students, ongoing.
2025 – 2026 6 Master's students, ongoing.
2021 – 2025 28 Master's students, graduated.

Previous supervision experience in Europe.

2020 2 bachelor's students.
BioCentre, **HAN University of Applied Sciences**, The Netherlands

2016 – 2017 1 bachelor's student and 1 Master's student, graduated.
Radboud University at the Microbiology department, The Netherlands



Country	No. of students
Thailand	13
Myanmar	7
Nepal	4
India	2
Bangladesh	2
Nigeria	2
Tanzania	2
Laos	1
Sri Lanka	1
Mongolia	1
Cambodia	1
The Philippines	1
Indonesia	1
Oman	1
Netherlands	1
Bosnia	1

See Annex 1: Supervised thesis

Teaching experience

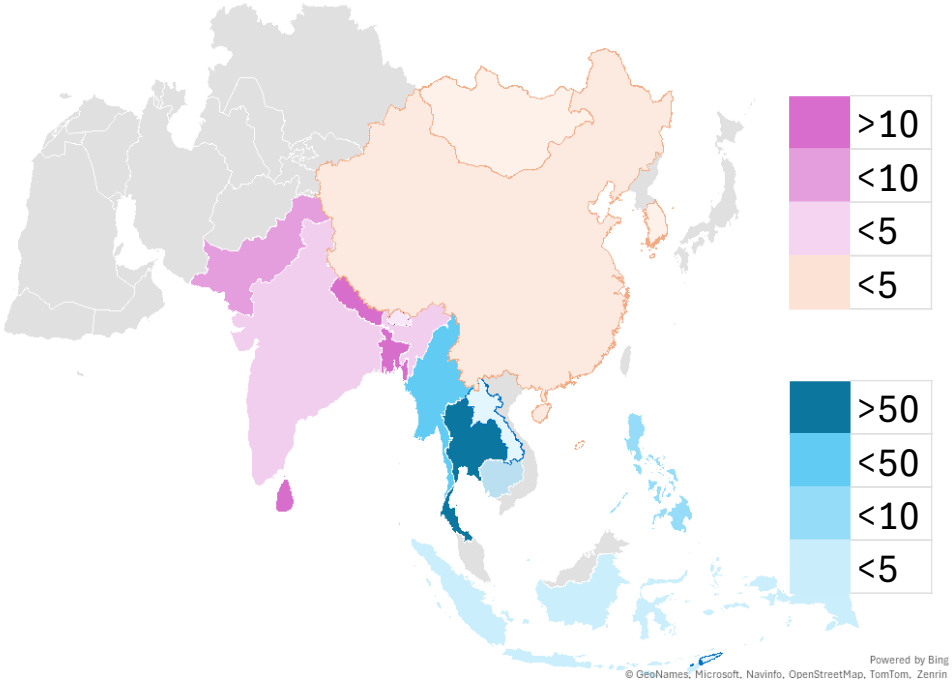
2021 – 2025 Assistant Professor – **Asian Institute of Technology, Thailand**. Taught:

- Environmental Chemistry and Laboratory (5 years, August semester)
- Environmental Impact Assessment (4 years, January semester)
- Applied Microbiology and Laboratory (2 years, January semester)
- Fundamentals of Microbiology in Environmental Engineering (2 years August semester)
- Microbiology of anthropogenic ecosystems and management (4 y summer inter)
- Microbiology of Climate Change Mitigation and Resource Recovery (4 y summer inter)

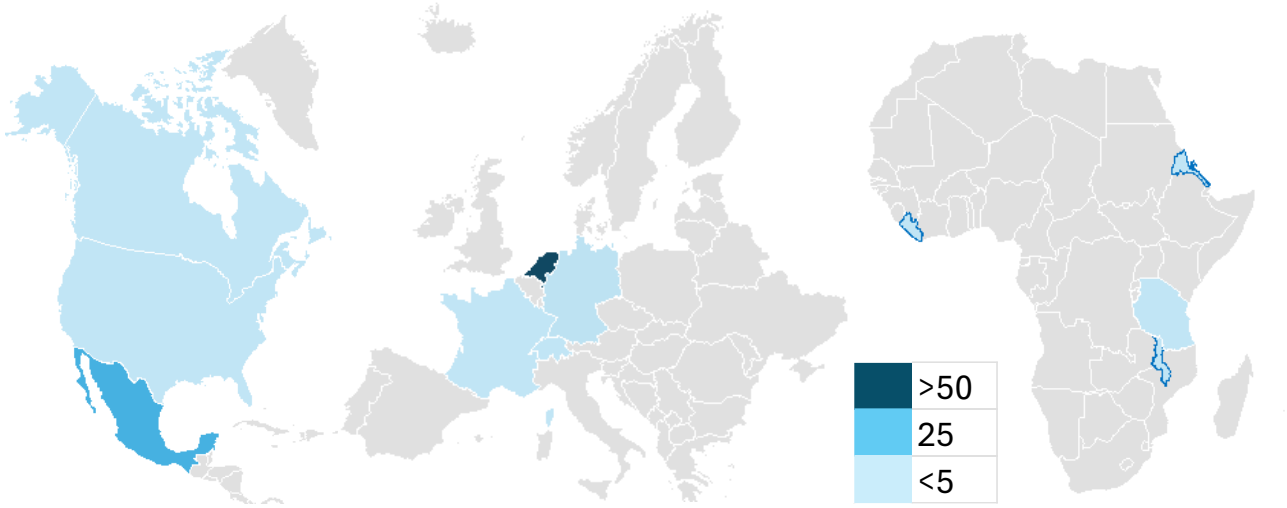
2020 – 2020 Lecturer – **HAN University of Applied Sciences, The Netherlands**. Taught:

- Microbiology in Medical Diagnostics
- Biotechnology specialization, 4th year
- Bioprocess engineering and downstream processing in the minor of Biorefinery
- Biotechnology and downstream processing in the Production of Biomolecules

2010 – 2010 Laboratory Teaching Assistant – **University of Guadalajara, Mexico**. Molecular biology and immunology



Diversity of my students. South Asia: 53, Southeast Asia: 92, East Asia: 4



Diversity of my students. North America: 28, Europe: 57, Africa: 4

See Annex 2: Teaching summary

Organisation and roles in scientific meetings

2025 Academic Panel Member at the 6th International Conference on Resources and Environment Sciences ICRES 2024, hosted by Chulalongkorn University, **Thailand**.

2022 Technical Committee Member at the International Conference ICUE 2022 on "Energy, Environment and Climate Change", hosted by the Asian Institute of Technology, **Thailand**.

2021 Member of the Academic committee of the ERASMUS+ Program INOWASIA.

Institutional responsibilities

2021 – 2025 Member, EEM Academic Program Committee. Aug 2021 – present.

2022 – 2025 Graduate Student Advisor, Asian Institute of Technology, Thailand.
Every year, all incoming students are distributed in equal number among the program members, and we serve as their graduate student advisor.

2024 Member of the Faculty Committee for Academic Chair Elections, Asian Institute of Technology, Thailand

2021 – 2024 Member of the Sustainability Task Force from its implementation in 2021, until December 2022, Asian Institute of Technology, Thailand.
Vietnam AIT Hub Delegation. 2022 – Hub project for a new AIT school with partnership with Van Lang University, Ho Chi Minh City, Vietnam.
Interview panel member for the replacement of Senior Administration, 2023.
Interview panel member for the recruitment of Laboratory Manager EEM. 2022.
Member of the recruitment commission for the assistant professor 2023.
Member of the recruitment commission for the assistant professor 2024.
Member of the recruitment commission for the assistant to Director of foreign affairs.
Member of the recruitment commission for assistant to deputy Director.

Commissions of trust

2025 – Reviewer, **Poland** Science Council.

2025 – Reviewer, **EU HORIZON Marie Sklodowska Curie Fellowship** actions 2026

2025 – EAUC & UNEP Green Gown Awards.
The Environmental Association for Universities and Colleges, and UNEP managed the initiative.

2025 – Reviewer, Research Grants Council (RGC) of **Hong Kong**.

2025 – Reviewer, the Slovak Research and Development Agency (SRDA) to serve as grant evaluator under the Department of International Cooperation and State Aid from **Slovakia**.

2025 – Evaluator, EAUC & UNEP Green Gown Awards, **United Kingdom**.
I am a judge for the Create Impact category 2025.

2024 – Scientific Evaluation, NGO Spark Climate Solutions, **USA**.
I have been invited by the USA NGO Spark Climate Solutions, based in San Francisco, to be a reviewer for grant proposals under their funding call: Exploratory grants for atmospheric methane removal.

2024 – Scientific Evaluation, HORIZON EUROPE RES4CITY NGO, the Accelerathon.
competition, organized by Horizon Europe RES4CITY project, Finnova Foundation.

Memberships of scientific societies

2023 – present Member, Research Network "Methane Technology Alliance" (META).

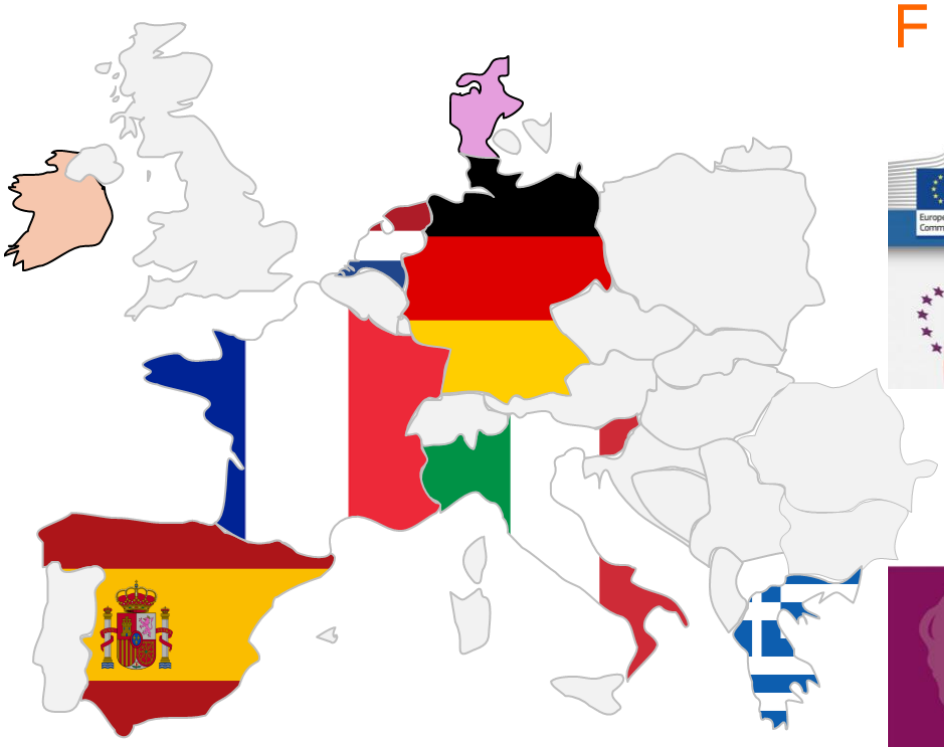
2021 – present Marie Curie Alumni Association.

Major collaborations in Europe

MicroSOS "plants crying for microbial help for climate-resilient agriculture".
Funding organization: HORIZON Marie Curie Actions for Staff Exchange 2022. **Funds:** €1,600,800 from which €257,600 are for AIT (Jan 2024 – Dec 2027).
Role: I Initiated and supported the proposal development as Associated Partner representative.
Partners: Malaga University as leader, **Spain**, Agricultural University of Athens, **Greece**, Tuscia University, **Italy**, Leiden University, Dutch Royal Institute of Ecology NIOO, and The Wheater Makers, **The Netherlands**, agro-industries AkiNao and DeSangosse from **France**.

MicroGRICE "Microbial GHG reduction in RICE".
Funding organization: EU- Southeast Asia Joint Funding Scheme (JFS-2021).
Funds: €390,000 from which €115,000 are for AIT (Apr 2023 – Mar 2026).
Role: Leading PI, I successfully assembled and led an international consortium.
Partners: Leiden University, Dutch Royal Institute of Ecology NIOO, and The Wheater Makers, **The Netherlands**, Leibniz University Hannover, **Germany**.

Collaboration with a Danish start-up "Methane insights", for the validation of a low-cost methane sensor in my projects.
Collaboration with University of Galway. Preparing a proposal for agricultural research, ERC Starting Grant, call 2026.



Major collaborations in Asia

“Enhancing the Science-Policy Interface to Manage Microplastic Influx from Major Cities”. **Funding organization:** Asia Pacific Network.
Funds: 80,000 USD (Oct 2024 – Sept 2026). **Role:** Co-PI.
Partners: Asian Institute of Technology, **Thailand**, with HCMC University of Industry and Trade (HUIT), **Vietnam** and Universitas Pertamina (UP), **Indonesia**.

In:
Thailand:
I have established collaborations with Kasetsart University for research and promotion. Kasetsart, Prof. Lek Noophan. Published together and open for more.

Japan: Sapporo University, Prof. Okabe. Co-authored one research paper and open for more research.

India: IIT Delhi, Asst. Prof. Pooja Gosh. Published together and open for more in the field of plastic pollution.

China: soil micronutrient management, a comparative analysis for methane mitigation in rice cultivation.
Submitted to the Hunan Province **China**, with partners at the Chinese Academy of Sciences (CAS) Institute for Subtropical Agriculture. Prof. Baoli Zhu.

Invited presentations, guest talks & key notes.

Netherlands, Dutch Royal Institute for Sea Research (NIOZ). July 2025, Texel, The Netherlands.
Through a grant under the scheme of "Faculty Development Fund" from the Asian Institute of Technology (AIT) Thailand, for 2,000 USD; I visited **NIOZ**. I have ongoing collaborations with Dr. Annika Vaksmaa on GHG research from rice agriculture and microplastic research on mangroves and microbial plastic degradation in general.

UN ESCAP, **Thailand**, October 2024
The Clean Climate and Air Coalition from UNEP program, hosted the launch of the "Nitrous Oxide Assessment". This assessment paves the path for global action on nitrogen management and GHG mitigation. I was a reviewer for this assessment, and thus I attended the event and presented my views at the plenary session of UN ESCAP.

Indonesia, Universitas Pertamina. October 2024. Jakarta.
Under the **Asia Pacific Network** project: "Enhancing the Science-Policy Interface to Manage Microplastic Influx from Major Cities", I was invited to give a talk to the open audience: citizens, students, stakeholders; in the kick-off meeting. In addition, we had stakeholder discussions with authorities from the Goverment of Jakarta and wastewater industries on plastic contamination in the city.

China, CAS Institute for Subtropical Agriculture. June 2024. Changsha, China.
Prof. Baoli Zhu from the **Institute of Subtropical Agriculture** from the **Chinese Academy of Sciences** (CAS) invited me to give a **Keynote lecture at the 4th International Symposium on Sustainable Agriculture for Subtropical Regions (ISSASR-4)**. The conference committee has agreed to sponsor my flight and accommodations in Changsha, China.

Mexico, University of Zacatecas. Online.
June 2024. I gave a presentation during their Climate Change Day under the theme: "Climate Change: our land, our future", on microbial technologies for climate change.

Spain, IE University. March 2024. Segovia and Madrid, Spain.
I was invited to visit **IE university** (two campuses) and gave 2 talks during a multi-day visit to explore collaborations.

Mexico, University of Zacatecas. Online.
February 2024. I gave a Miniseries of guest on-line lectures in the Undergraduate program of Biotechnology.

Singapore, **Nanyang Environment and Water Research Institute** (NEWRI), Nanyang Technical University of Singapore (NTU).
January 2024. Singapore
I was invited by a Professor from **Kasetsart University** in **Thailand**, to travel to NEWRI to explore collaborations. We hosted discussions on water research implementation in polluted sites in Thailand.

Thailand. December 2023.
Hua Hin, The Brainpower Congress 2023, NXPO, PMU-B, Thai Council of Science and Technology,

The Philippines, October 2023.
Pasay City, I was invited and partially sponsored by the NGO **The Global Methane Hub**, to attend and talk at a private convening on GHG mitigation in Asia. The objective is to set the agenda to start mitigation action and working groups in Asia.

Quezon City, I was invited by the **University of Philippines Dilliman**, through the Institute for Meteorology and Environmental Sciences, to give a guest talk on Microbial micro-solutions with macro implications at a global scale.

Thailand, Kasetsart University. August 2023
Guest lecture to postgraduate students on environmental microbiology.

UN ESCAP, **Thailand**
The Clean Climate and Air Coalition from UNEP program invited me to a private session discussion to explore the landscape of GHG mitigation in the region.

United States of America, The Institute.
April 2023, San Fransico.
I was invited and sponsored by the **Stanford-derived** NGO **Spark Climate Solutions** to attend a private convening on Atmospheric Methane destruction. This convening mapped the technologies for methane destruction, and we explored ways to collaborate and implement action.

Thailand, Kasetsart University.
August 2022. Guest lecture to postgraduate students on environmental microbiology.

Japan
July 2022, Tokyo.
I was one of 4 managers of a 34-student trip to Tokyo as a closure event from the 1-year master's program "Marine Plastic Abatement" sponsored by the Government of Japan under the Blue Ocean Action. We attended diverse events on plastic waste management and had discussions with diverse authorities in Japan from the waste management sector.

Vietnam, Van Lang University (VLU).
May 2022.
I was part of an official delegation from the Asian Institute of Technology (AIT) to the VLU, to explore the implementation of a new AIT center in Vietnam.

Research expeditions led.

Thailand, Rayong Province. May 2022.
I led a sampling expedition for research on mangrove plastic pollution at the Golden Meadow Mangrove, with 6 students and 2 research staff.

Thailand, Chachoengsao Province. November 2021.
I co-led a research expedition with 35 students to a local mangrove reserve, to collect specimens for plastic and microplastic research on mangrove sediment.

Annex 1: Supervised thesis

Current supervision

Summary of Doctoral student's thesis supervision: current

Name of Student	Title of Thesis/Research Study	Enrolled (mm/yyyy)	Graduation (mm/yyyy)	Role
Chatsuda Pantawong	**Thesis Title:** Co-creation of zero waste strategies in marginalized communities.	08/2022	12/2025	SINGLE CHAIR
Chonticha Deela	**Thesis Title:** Greenhouse gas and sulfide dynamics and mitigation in sewage transport systems.			

Summary of Master student's thesis supervision: current thesis under supervision

	Name of Student	Country	Title of Thesis/Research Study	Enrolled (mm/yyyy)	Expected Graduation (mm/yyyy)	Role
35	Phaisit	Thailand	Evaluation of Anaerobic Membrane Photobioreactor utilising Purple Phototrophic Bacteria for the Treatment of Poultry Processing Wastewater	08/2024	05/2026	Co-Chair
34	Kulkrat	Thailand	Methane mitigation from rice agriculture through missing metal micronutrients	08/2024	05/2026	Co-Chair
33	Nattatida	Thailand	Methane emission and reduction potential in diverse ecosystems in AIT	08/2024	05/2026	Chair
32	Sakawrat	Thailand	Urban microplastic flows into mangroves: transport and retention	08/2024	05/2026	Chair
31	Suphanat	Thailand	Methane mitigation in an urban canal: the role of micro aeration in ecosystem health	08/2024	05/2026	Chair
30	Urja Shrestha	Nepal	Innovative aeration testing on methane mitigation in rice cultivation: a mesocosm study	08/2024	05/2026	Chair
29	Sirapa	Nepal	Microplastic effect on rice growth and methane mitigation: a mesocosm study	08/2024	05/2026	Chair

Graduated students

Yellow = Research study, Green = Master Thesis.

	Name of Student	Country	Title of Thesis/Research Study	Enrolled (mm/yyyy)	Graduated (mm/yyyy)	Role
28	Thet Thar Nyo	Myanmar	Thesis title: Machine learning approach to estimate methane emissions form rice agriculture	08/2023	07/2025	Co-Chair
27	Ariunzul Bagsalayan	Mongolia	Thesis title: Methane fluxes from wastewater treatment tanks	08/2021	07/2025	Chair
26	Nakassorn Ruangekavit	Thailand	**Thesis Title:** Treatment of fish processing wastewater by phototrophic purple bacteria	08/2023	05/2025	Co-Chair
25	Stuti Shakya	Nepal **Publication:** In preparation.	**Thesis Title:** synergistic effect of sewage digestate biochar and free nitrous acid for enhancing methane production	08/2023	05/2025	Co-Chair
24	Eleazar Gateta	Philippines	**Thesis Title:** Methane emissions from urban canal sediments, a mesocosm study	08/2023	05/2025	Chair
23	Nannaphat Niyomsri	Thailand **Publication:** In preparation, as co-authors in collaboration with The Netherlands and China.	**Thesis Title:** Metal micronutrient management in methane mitigation from rice agriculture	08/2023	05/2025	Chair
22	Chanya Prakarich	Thailand **Publication:** In preparation, as co-authors in collaboration with The Netherlands.	**Thesis Title:** Plastic degradation through physicochemical and biological methods, a comparison study.	08/2023	05/2025	Chair
21	Kimhong Eav	Cambodia	**Thesis Title:** Salinity effects on GHG emissions in rice cultivation	08/2023	05/2025	Chair
20	Hein Lin Thant	Myanmar **Publication:** In preparation, as co-authors in collaboration with The Netherlands and Chinese Academy of Sciences, Institute of subtropical agriculture.	**Thesis Title:** Methanotrophic potential for GHG mitigation in rice soils: a substrate-based study.	08/2022	12/2024	Hein Lin Thant
19	Kaung Myatt Htut		**Thesis Title:** Methane mitigation in rice soils: Methanotrophic Microbial Pixie-dust.	08/2022	05/2024	Chair
18	Salai Ye Yint Aung		**Thesis Title:** Methanogenic potential for GHG emissions from rice soils: a substrate-based study.	08/2022	05/2024	Chair
17	Mrinalini Jena	India	**Thesis Title:** Methane emission fluxes from rice, a mesocosm study.	08/2022	05/2024	Chair

	Name of Student	Country	Title of Thesis/Research Study	Enrolled (mm/yyyy)	Graduated (mm/yyyy)	Role
16	Palacksone Vongxayalath	Laos	**Research study Title:** Monitoring of methane formation and consumption in sewage sludge: a substrate-based study.	08/2021	05/2023	Chair
15	Thant Zin Aung	Myanmar	**Thesis Title:** Methane emission monitoring in eutrophicated artificial ponds. **Publication:** In preparation, as first author and me as corresponding, in collaboration with the Dutch Royal Institute of Sea Research, **The Netherlands**.	08/2021	05/2023	Chair
14	Ei Ei Phyoe	Myanmar	**Thesis Title:** Monitoring of methane storage capacity and release potential in artificial canals. **Publication:** In preparation, second author and me as corresponding, collaboration with the Dutch Royal Institute of Sea Research, **The Netherlands**.	08/2021	05/2023	Chair
13	Niranjala Anjala Dissanayake	Sri Lanka	**Thesis Title:** Direct monitoring of GHG fluxes in aquatic sediments: a mesocosm study.	08/2021	05/2023	Chair
12	Ahmed Hussain	India	**Research study Title:** Review of microplastics fate in humans with a focus on urinary system	08/2021	07/2022	Chair
11	Mst. Shamima Akter	Bangladesh	**Research study Title:** Spatial distribution of microplastics in mangrove sediment and crabs from Tung Prong Thong (golden meadow) Rayong province **Publication:** In preparation, as first	08/2021	07/2022	Chair

	Name of Student	Country	Title of Thesis/Research Study	Enrolled (mm/yyyy)	Graduated (mm/yyyy)	Role
			author and me as corresponding, in collaboration with the Dutch Royal Institute of Sea Research, **The Netherlands**.			
10	Salman Jahan Momo	Bangladesh	**Research study Title:** Mitigation and adaptation process of marine plastic pollution in the Cox Bazar area of Bangladesh	08/2021	07/2022	Chair
9	Natthapon Pornsrirutai	Thailand	**Research study Title:** The management of healthcare plastic waste: a case study of surgical masks and antigen test kits	08/2021	07/2022	Chair
8	H Seng Naw Aung	Myanmar	**Research study Title:** A preliminary study on plastic waste flow analysis of pa Kahtawang IDP camp, Mai Ja Yang, Kachin state, Myanmar	08/2021	07/2022	Chair
7	Bernard Tavershima Gogo	Nigeria	**Research study Title:** Microplastics in drinking water	08/2021	07/2022	Chair
6	Weerakorn Sinlapawongsathorn	Thailand	**Thesis Title:** The potential removal of microplastics in decentralized wastewater treatment plants of communities: a case study in Pathumthani, Thailand.	08/2020	05/2022	Chair
5	Suchana Amnuaychaichana	Thailand	**Thesis Title:** Greenhouse gas estimations from artificial canals and ponds as overlooked sources of greenhouse gas emissions. **Publication:** In preparation, as co-authors in collaboration with Swedish Agricultural University to be submitted to Nature Climate Change in	08/2020	05/2022	Chair

	Name of Student	Country	Title of Thesis/Research Study	Enrolled (mm/yyyy)	Graduated (mm/yyyy)	Role
			2024, **Sweden**. Dr. Michael Peacock.			
4	Chonticha Deela	Thailand	**Thesis Title:** Greenhouse gas emissions in sewage transport and treatment infrastructure: from generation nodes to treatment and release	08/2020	05/2022	Chair
3	Juvenary J. Ntinabo	Tanzania	**Research study Title:** Plastic waste management on seaport reception facilities: an implementation of MARPOL annex V at Laem Chabang port	01/2021	12/2021	Chair
2	Walugembe Francis	Uganda	**Research study Title:** Utilization of waste plastics in road construction: a study of plastic roads in Thailand as a remedy to plastic pollution	01/2021	12/2021	Chair
1	Sushila Shrestha	Nepal	**Research study Title:** Fate and analysis of microplastics in a decentralized wastewater treatment system of Asian Institute of Technology	01/2021	12/2021	Chair

Annex 2: Teaching summary

At AIT

Year/ Semester	Course Code and Title	Course Category	Course Credit	No. of Students	Ave Grade	Remarks
August 2021	ED78.01: Environmental Chemistry and Laboratory	Core EEM	3(30-45)	23	3.32	Single teacher
January 2022	ED78.19: Environmental Impact Assessment	Required ETM	3(45-0)	32	3.31	
Inter-sem 2022	ED78.0935: Microbiology of anthropogenic ecosystems and management.	Elective	1(15-0)	17	3.41	I independently designed this course
Inter-sem 2022	ED78.0936: Microbiology of Climate Change Mitigation and Resource Recovery.	Elective	2(30-0)	10	3.45	
August 2022	ED78.01: Environmental Chemistry and Laboratory	Core EEM	3(30-45)	17	3.18	Single teacher
January 2023	ED78.19: Environmental Impact Assessment	Required ETM	3(45-0)	21	3.38	
January 2023	ED78.16: Applied Microbiology and Laboratory	Elective	3(30-45)	7	3.36	This course reopened due to my impact
Inter-sem 2023	ED78.0935: Microbiology of anthropogenic ecosystems and management.	Elective	1(15-0)	9	3.39	I independently designed this course
Inter-sem 2023	ED78.0936: Microbiology of Climate Change Mitigation and Resource Recovery.	Elective	2(30-0)	9	3.56	
August 2023	ED78.01: Environmental Chemistry and Laboratory	Core EEM	3(30-45)	22	3.00	Single teacher
January 2024	ED78.9038: Fundamentals of Microbiology	Elective	1(12-9)	20	3.23	I independently designed this course
January 2024	ED78.9039: Applied Microbiology and Lab	Elective	2(18-36)	12	3.21	
January 2024	ED78.19: Environmental Impact Assessment	Required ETM	3(45-0)	17	3.24	Single teacher
Inter-sem 2024	ED78.0935: Microbiology of anthropogenic ecosystems and management.	Elective	1(15-0)	8	3.19	I independently designed this course
Inter-sem 2024	ED78.0936: Microbiology of Climate Change Mitigation and Resource Recovery.	Elective	2(30-0)	6	3.33	
August 2024	ED78.01: Environmental Chemistry and Laboratory	Core EEM	3(30-45)	34	3.25	Single teacher
August 2024	ED78.9038: Fundamentals of Microbiology	Elective	1(12-9)	19	3.32	I independently designed this course This course has high intake due to my impact.
January 2025	ED78.19: Environmental Impact Assessment	Required ETM	3(45-0)	28	3.43	Single teacher

Year/ Semester	Course Code and Title	Course Category	Course Credit	No. of Students	Ave Grade	Remarks
Inter-sem 2024	ED78.0935: Microbiology of anthropogenic ecosystems and management.	Elective	1(15-0)	8	3.21	I independently designed this course
Inter-sem 2024	ED78.0936: Microbiology of Climate Change Mitigation and Resource Recovery.	Elective	2(30-0)	6	3.3	
August 2025	ED78.01: Environmental Chemistry and Laboratory	Core EEM	3(30-45)	27	TBD	
	ED78.9038: Fundamentals of Microbiology	Elective	1(12-9)	9	TBD	
	Ed78.9043: Fundamentals of Chemistry for Environmental Engineers	Elective	1(15-0)	12	TBD	
		Global Average →			3.30	

Experience in The Netherlands. I have 3 years of previous experience as a main lecturer at under and post-graduate level in Mexico and in The Netherlands, teaching in 3 languages sometimes.

Semester	Course	Enrollment	Nationality
HAN University of Applied Sciences, **The Netherlands.**			
Sept 2020	Biotechnology specialization course, 4th year. Teaching fermentation technology and Up-Stream Processing. **Main lecturer**.	20	Dutch
August 2020	Module of Production of Biomolecules (PoB), teaching fermentation technology and Up-Stream Processing. Main lecturer. Workshops on Project management and grant proposal writing. Co-lecturer.	16	Dutch, Swiss, French
Mar – April	Minor in Biorefinery	5	Dutch
Feb 2020	General microbiology and clinical diagnostics. **Main lecturer**.	25	>6 Nationalities but majority Dutch
Radboud Universiteit Nijmegen, **The Netherlands.**			
Feb 2017	Applied Environmental Microbiology. Laboratory **lead** instructor.	22	3 Nationalities but majority Dutch
Feb 2016	Applied Environmental Microbiology. Laboratory **lead** instructor.	20	4 Nationalities but majority Dutch
Feb 2015	Applied Environmental Microbiology. Laboratory junior instructor.	24	3 Nationalities but majority Dutch
Experience in **Mexico.**			
2011	Private English conversation classes to bank executives on 1-1 sessions.	1	Mexican
Inter Sem 2010	Molecular biology techniques for exchange students.	5	
Feb 2009	Practical Immunology and clinical histology. Laboratory instructor.	30	

Annex 3: Service as thesis committee member

Yellow = Research study or internship, Green = Master Thesis, Blue = PhD, Grey = Special program.

No.	Sem grad	Course type	Cred.	ID	Name	Nationality	Tittle
1	Aug 2021	Research	6	121944	Khandker Tarin Tahsin	Bangladesh	The effect of microplastics on the feeding habits of corals in koh si chang area
2	Aug 2021	Research	6	121948	Sujana Tasne	Bangladesh	Treatment of biodegradable plastic packaging using UV radiation and composting
3	Aug 2021	Research	6	121987	Mradul Agarwal	India	Innovative waste bins (auto bin 1.0) for plastics waste management in public areas in Thailand
4	Aug 2021	Research	6	122033	Rapeerat Thanyawatpornkul	Thailand	The role of mirror neuron morality in social awareness of waste management: a case study of empathetic variation
5	Aug 2021	Research	6	122054	Nelundeniyage Sumuduni Lakmali Senevirathne	Sri Lanka	Ecosystem impacts of microplastics: a study of a sandy beach soil temperature
6	Jan 2022	Thesis	22	121506	Khin July Win Thant	Myanmar	Treatment of domestic wastewater using pilot-scale membrane-aerated biofilm reactors for the removal of organics and nitrogen
7	Jan 2022	Thesis	22	121710	Sireetron Lertsuriyakul	Thailand	Development of decision-making tool for fine particulate matter management in Bangkok metropolitan region
8	Jan 2022	Thesis	22	121515	Tin Nwait Yi	Myanmar	Microbiology water quality in Pathum Thani province
9	Inter Sem 2022	Research	6	122385	Kristina Yolanda	Indonesia	Integrating informal waste pickers and recyclers into the extended producer responsibility (EPR) system to achieve plastic circularity in Indonesia
10	Inter Sem 2022	Research	6	122411	Ugyen Tshomo	Bhutan	Assessment of microplastics contamination along

No.	Sem grad	Course type	Cred.	ID	Name	Nationality	Tittle
							the stretch of wang Chu in Thimphu, Bhutan
11	Inter Sem 2022	Research	6	122499	Noman Ali Shah	Pakistan	Abundance and characterization of microplastic in the surface water of an industrial estate in Bangkok
12	Inter Sem 2022	Research	6	122515	Thunyamas Phearuang	Thailand	Assessment of microplastic contamination and human exposure through bivalve consumption from farms in Surat Thani province, Thailand
13	Inter Sem 2022	Research	6	122557	Abrao De Jesus Vaz	Timor-Leste	A comparison of microplastic pollution in different sites of sediment mangroves forests in tung prong thong (golden meadow)
14	Jan 2023	Thesis	22	122550	Aye Pyae Pyae Aung	Myanmar	Osmotic microbial fuel cell (osMFC) for activated sludge dewatering and bioelectricity generation
15	Jan 2023	Thesis	22	122444	Chan Mra Thandar	Myanmar	A socio-ecological system analysis of water management of lakes in mrauk u, 31hraya31 state, myanmar
16	Jan 2023	Thesis	22	122176	Soraoud Sukwan	Thailand	Development of near real-time emission inventory for air quality modeling: case study of Pathum thani province
17	Jan 2023	Thesis	22	122174	Jirayu Lohanut	Thailand	Monitoring of airborne microplastic deposition in Pathum Thani
18	Jan 2023	Thesis	22	122107	Preedaporn Ngernpa	Thailand	Monitoring of airborne microplastics in Bangkok metropolitan region, Thailand
19	Jan 2023	Thesis	22	122091	Apinya Suwannakaew	Thailand	Constructed wetland in living wall systems (cw-lws) for pathogen removal for treating solar septic tank effluent.

No.	Sem grad	Course type	Cred.	ID	Name	Nationality	Tittle
20	Jan 2023	Thesis	22	122090	Mutita Wattanasuk	Thailand	Removal and pathways of microplastic in decentralized wastewater treatment facilities
21	Jan 2023	Thesis	22	122073	Chanikarn Thanasrilungkul	Thailand	Develop an adsorptive media from dry sludge for improving effluent quality from Bangkok wastewater treatment plant.
22	Jan 2023	Internship	10	122634	Genevieve May Campos Brilata	Philippines	Development of a Net-zero roadmap and identification of suitable carbon capture and utilization technologies for Bangchak refinery
23	Jan 2023	Research	22	121716	Pearploy Yarak	Thailand	Assessment of microplastics and microfibers contamination in the chao 32hraya river near the urban areas: a case study of samut prakan province, thailand
24	Dec 2023	PhD	72	119282	Salinda Sedtha	Thailand	From consumption behavior to pro-environmental behavior: understanding the factor behind single-use plastic waste reduction
25	Dec 2023	Thesis	22		Madison Cason	USA	Restoring mountain ecosystems for ecological and social resilience – Northern Thailand
26	Dec 2023	Internship	12	12	Ushnish Dianne TuladharNepal	Nepal	Assessment of CO_2 emission from regional container lines (RCL) containerships and technology solutions for CO_2 mitigation
27	May 2024	Thesis	22	123420	Attanayake Mudiyanselage Indrajith Udaya Kumara	Sri Lanka	Determination of enabling factors and barriers for incorporating greywater management in citywide inclusive sanitation planning in Sri Lanka

No.	Sem grad	Course type	Cred.	ID	Name	Nationality	Tittle
28	May 2024	Thesis	22	123041	Asamaporn Punkru	Thailand	Enhancing the precision of low-cost PM2.5 air opollution sensors through the application of machine learning
29	May 2024	Thesis	22	122981	Wipaporn Saweangwit	Thailand	Integration of satellite-derived aerosol optical depth and PM2.5 monitoring data for improving air quality monitoring network in Thailand
30	May 2024	Thesis	22	122459	Puja Bhetawal	India	Evaluating the functional properties and digestibility of hemp protein hydrolysate blend with pea protein isolate
31	May 2024	Thesis	22	121069	Wissuta Woothisen	Thailand	Applications of PM2.5 concentration from satellite aerosol optical depth for health impact assessment during and after COVID-19 lockdown in Bangkok Metropolitan Region
32	Dec 2024	Thesis	22	123186	Myat Thinzar Lin	Myanmar	Fate and Removal of Microplastics in a hospital Wastewater treatment facility, Thailand
33	Dec 2024	Thesis	22	123099	Daniel Lee Rice	USA	Evaluation of antimicrobial activity disruption of biofilm formation by postbiotics against multidrug resistant pathogens
34	Dec 2024	Thesis	22	123429	Chen Liuyi	China	Solid Microbial Fuel cell stacks system for long-term organic food waste treatment and bioelectricity generation
35	Dec 2024	Thesis	72	Can't remember	SOM Student	Thailand	Digital Maturity on Company Valuation.
36	May 2025	Thesis	22	124356	Koun Kunnlakanna	Cambodia	Microplastics flux estimations from sources to receptor
37	May 2025	Thesis	22	124211	Natthida Netphong	Thailand	Perception of nature services in national parks of Thailand
38	May 2025	Thesis	22	124158	Phway Phway Zaw Minn	Myanmar	Microplastics deposition from air

No.	Sem grad	Course type	Cred.	ID	Name	Nationality	Tittle
39	May 2025	Thesis	22	124111	Santona Timilsena	Nepal	Millet fermentation for protein production.
In progress:							
39	Dec 2025	Doctoral	72	122252	Pyae Mon Naing	Myanmar	Evaluation of Climate adaptation measures for urban climate adaptation in synergy with sustainable development of the Bangkok Metropolitan Region.
40	Dec 2024	Research	12	123784	Kyaw Min Thu	Myanmar	
41	Dec 2025	Doctoral	72	123344	Yifan He	China	Advancing cost-effective desalination: Development of modular FCDI based on Sludge-based electrodes.
42	May 2025	Doctoral	72	123379	Md. Mahmudul Hasan	Bangladesh	Mapping the vulnerability of human health to extreme heat between 2000 and 2020 in the Dhaka metropolitan area, Bangladesh.
43	May 2027	Doctoral	72		Ms. Patchareporn Intamano	Thailand	LCA applied to emission mitigation from aquaculture in Thailand.