



Center for Marine Environmental Studies (CMES), Ehime University,
Joint Usage/Research Center, Leading Academia in Marine and Environment
Pollution Research (LaMer)

Fiscal Year 2024 (April, 2024 – Mar, 2025)
Joint Usage / Research Application

Aims of LaMer: To promote environmental research, Ehime University is operating a joint usage/research center “LaMer” by practical use of the environmental specimen bank (es-BANK) and related analytical equipment, the research vessel (R/V) “Isana”, and Ehime University-De La Salle University International Collaborative Research Laboratory. LaMer aims to implement advanced cutting-edge research in environmental sciences via international collaboration. Application for joint usage, collaboration and research meeting through LaMer is invited for the fiscal year 2024.

1. Category of application

Applications including original research ideas of the applicants for the following four categories (A, B, C and D) are welcome. Members in the application must include researcher(s) outside Ehime University and faculty member(s) of LaMer (see “Faculty members of LaMer, Center for Marine Environmental Studies, CMES” at item 15, although anyone among the members can be a principal investigator of the project.

A. General collaboration on chemical pollution and coastal environment researches

Research projects to use analytical equipment (see “Joint usage equipment list” in Table 1 at item 16) and samples stored in es-BANK.

B. Creation of new discipline and Interdisciplinary fusion research

Joint research projects related to the following research topics 1 and 2, proposed by the research team of multiple LaMer members, are welcome. In addition, other research proposals from researchers outside LaMer members are also called for.

Research 1:

Research Title: Pathogen and pest control with reduced drug dependence and environmental impact: towards sustainable infectious disease control and agriculture

Research Team: Kozo Watanabe, Hisato Iwata, Tatsuya Kunisue, Xinyu Guo, Akihiko Morimoto

Outline: The objective of this flagship project is to propose a sustainable approach to control infectious diseases and increase agricultural productivity while minimizing the environmental

and ecological impact of chemicals derived from pharmaceuticals, pesticides, and other agents. The project has four topics: 1) development of biologically based technologies for pathogen and pest control that reduce chemical use, 2) comprehensive detection and search for environmentally persistent and bio-accumulative agents, 3) modeling of the movement and spread of chemical contaminants derived from agents from watersheds to coastal areas, and 4) modeling of the various processes by which agents pose toxic effects on wildlife such as fish, birds, and mammals. By integrating these topics in a multidisciplinary manner, we will ultimately predict the effects of the introduction of technologies to biologically control pathogens and pests on the environment and ecosystem. Field research will be conducted in Asian countries and domestic regions in Japan with close ties to LaMer staffs.

Research 2:

Research Title: Creation of platform for signal toxicity evaluation starting from the development of neurotransmission network disturbance detection method

Research Team: Kei Nomiya, Hisato Iwata

Outline: Environmental pollutants include endocrine disrupting chemicals that disrupt/inhibit endogenous hormones and pesticides that disrupt/inhibit neurotransmission. However, these actions are believed to have something in common and are an idea for a new mechanism of action called "signal toxicity". In this theme, we aim to establish a new imaging technology and develop a sensitive biomarker in order to detect neurotransmission network disturbance caused by signal toxicity, which could not be detected by conventional exposure and toxicity tests. We also aim to establish a new method for monitoring chemical exposure and its biomarkers by conducting in vivo/in vitro exposure tests. As a future, we aim to establish these single detection/diagnosis technologies as a "signal toxicity assessment platform".

Others:

New discipline and interdisciplinary fusion research proposed by applicants.

C. International joint research on Asian environmental problems

Collaboration research by international team including LaMer members focusing on environmental survey and research in Asia.

D. International symposium and research meeting

Organization of international or domestic meeting. Attendees of foreign researchers, young scientists and graduate students are encouraged.

2. Duration of joint usage/research

Joint usage/research starts from **April 1, 2024 and is expected to end by February 28, 2025.**

3. Qualification of applicant and participant

Researchers affiliated to Japanese and foreign universities, institutes and private companies can apply (including graduate students and fifth and sixth grade students of six-year universities). Other persons who can be recognized as suitable for applying by the LaMer Committee can also apply. Student's applications should fulfill the following conditions.

- 1) If the student applicant is the PI, his/her supervisor should also participate in the project. Recognition note by the supervisor (Form 2) must be attached with the application.
- 2) If the student is included as a member, recognition note by the supervisor (Form 2) must be attached with the application.

4. Budget

LaMer offers travel funds and accommodation expenses to the members and supporting staff of the project if the application is accepted. In the case of category A, B, and C, part of expenses for purchasing consumables will be provided through the LaMer member of the project. In the case of category D, expenses for rental charges of the venue for the seminar, symposium, and meeting, printing expenses of abstract book and travel expenses for the participants will be supplied through the LaMer faculty member. All the expenses in the application form may be reduced depending on the yearly total budget of LaMer.

5. How to apply

Please discuss with LaMer member(s) listed in item 15. Fill in the attached form (Form 1) and submit by e-mail to the address below.

6. Deadline of application

All application forms should be submitted to LaMer Office by **January 15, 2024**.

7. Contact information

All application forms and documents should be sent to:
LaMer Office of Research Support Division,
Ehime University, Bunkyo 2-5, Matsuyama, 790-8577 Japan
E-mail: lamer@stu.ehime-u.ac.jp
Tel: +81-89-927-8187

8. Selection of the project

Selection of the projects will be made by the screening and reviewing by LaMer Committee. In particular, "necessity, creativity, and possibility of achievement" will be an important criterion for judgment. In addition, the following issues will also be considered in the selection process.

- 1) Incomplete applications, those containing content that is not in line with the purpose of LaMer, or those without prior notification to the LaMer members.
- 2) In order to avoid excessive concentration on specific Faculty members and the diversity of research

projects, the number of selected projects will be limited to a maximum of 10 per Faculty member.

3) Considering the diversity of research projects, a maximum of 2 proposals from the same laboratory will be accepted.

9. Notification of selection

The decision by LaMer Committee will be notified to the principal investigator by early April.

10. Specifying acknowledgement

When reporting the outcome from the joint usage, collaboration, and seminar and meeting, please add a brief acknowledgement as shown in the following example. Additionally, please submit printed matters (manuscript reprint, abstract book and so on) to the LaMer Office (see item 7).

Example of acknowledgement

“This study was supported by the Ministry of Education, Culture, Sports, Science and Technology, Japan (MEXT) to a project on Joint Usage/Research Center, Leading Academia in Marine and Environment Pollution Research (LaMer).”

11. Report of research product and meetings

Principal investigator should report the outcome of research and/or meeting by **February 28, 2025**. Form 3 should be used for submitting the report to LaMer Office. The report will be open to the public through the LaMer website. If the report must be kept confidential for patent application, please contact the LaMer Office.

12. Intellectual property right

If the intellectual property right is to be produced by the collaboration project, please consult with appropriate division of the principal investigator’s institute.

13. Legal process for animal experiments and recombinant DNA experiments

All of legal process should be completed by the side of applicants before starting the project.

14. Security export control

When the research group contains foreign researchers, a written pledge for classification is needed according to the foreign exchange control law and/or foreign trade law.

15. Faculty members of LaMer, Center for Marine Environmental Studies, CMES

each address should be ****@ehime-u.ac.jp

Director of LaMer	Hisato Iwata	iwata.hisato.mz
Division of Environmental Dynamics		
Professor	Xinyu Guo	guo.xinyu.mz
Professor	Akihiko Morimoto	morimoto.akhiko.cl
Professor*	Hirofumi Hinata	hinata.hirofumi.dv
Associate Professor	Michinobu Kuwae	kuwae.michinobu.mc
Associate Professor*	Tomoya Kataoka	kataoka.tomoya.ab
Division of Environmental Chemistry and Ecotoxicology		
Professor	Hisato Iwata	iwata.hisato.mz
Professor	Tatsuya Kunisue	kunisue.tatsuya.ew
Professor*	Shin Takahashi	takahashi.shin.mu
Associate Professor	Kei Nomiyama	nomiyama.kei.mb
Associate Professor	Rumi Tanoue	tanoue.rumi.lw
Associate Professor*	Hiroshi Ishibashi	ishibashi.hiroshi.wy
Associate Professor*	Hazuki Mizukawa	mizukawa.hazuki.jg
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Division of Ecosystem Health Sciences		
Professor	Kozo Watanabe	watanabe.kozo.mj
Professor*	Seiya Watanabe	watanabe.seiya.my
Professor*	Yo Miyake	miyake.yo.mm
Professor*	Richard Culleton	culleton.richard.oe
Senior Assistant Professor	Yumiko Obayashi	obayashi.yumiko.nn
Office for International and Social Cooperation		
Associate Professor	Yasutsugu Suzuki	suzuki.yasutsugu.ao

* : Adjunct faculty member

16. Joint usage equipment list

Table 1, Joint usage equipment

Equipment	Person in charge
Research vessel Isana	A. Morimoto
Rosette Niskin water sampler (2L x 10 bottles) equipped on Isana	A. Morimoto
Quantitative echo sounder system equipped on Isana	A. Morimoto
Ship mounted Acoustic Doppler Current Profiler (ADCP) equipped on Isana	A. Morimoto
Remotely operated underwater vehicle (ROV) system equipped on Isana	A. Morimoto
Bottom mounted Acoustic Doppler Current Profiler (ADCP)	A. Morimoto
Submersible ultraviolet nitrate analyzer	A. Morimoto
High Performance Computer system	X. Guo
Gamma detector system	M. Kuwae
Two-dimensional gas chromatography – time-of-flight mass spectrometer (GCxGC – TOF MS)	T. Kunisue
Gas chromatography – quadrupole mass spectrometer	T. Kunisue
Gas chromatography – double focusing magnetic sector high resolution mass spectrometer	K. Nomiyama
High performance liquid chromatography – tandem mass spectrometer (LC – MS/MS)	K. Nomiyama
High performance liquid chromatography – time-of-flight tandem mass spectrometer	K. Nomiyama
All-in-one fluorescence microscope	H. Iwata
Real-time PCR system	H. Iwata
Integrated computing chemical system	H. Iwata

Cell culture room	Y. Obayashi
Biohazard clean bench	K. Watanabe
Mosquito vector rearing and blood feeding system	K. Watanabe
Microinjector	K. Watanabe
Microplate reader	Y. Obayashi

Joint Usage/Research Center, Leading Academia in Marine and Environment Pollution Research (LaMer) Application Form (Fiscal Year **2024**)

To Director of LaMer (d , m , y)

Date of application

Principle investigator (PI)	First Name			Age
	Surname			
	Institution			Male/Female
	Department			
	Employment position			
	Mailing address with ZIP, Country			
	Contact address	Phone		
	E-mail			

This is application to LaMer Project. (Put a circle on your application status)

First time	Continuous
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Your previous application to LaMer Project

<p>■ year :</p> <p>■ title of your project :</p> <p style="text-align: right;">was (accepted / not accepted).</p>

Category of application (circle appropriate alphabet)

<p>A: General collaboration on chemical pollution and coastal environment research</p>	<p>B: Creation of new discipline and Interdisciplinary fusion research (Please select follows) Research 1 Research 2 Others</p>	<p>C: International joint research on Asian environmental problems</p>	<p>D: International symposium and research meeting</p>
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Title of project or meeting

Japanese (if possible) :
English :

Total budget required

Travel fund	Consumables	Total amount
JP Yen	JP Yen	JP Yen

Contributing members

Name	Gender M/F	Age	Affiliation	Employment position	E-mail
Faculty member of LaMer					
Faculty member of LaMer					

(*1) When PI is a graduate student, his/her supervisor must also be included, put a circle on supervisor's name.

(*2) Affiliation (Department) and grade must be given in the case of graduate student PI and/or members.

Budget required

Travel fund

Name	Travel route	Staying duration (day)	Amount (Japanese Yen)
Total			JP Yen

Consumables

Item	Number	Unit price	Total price (Japanese Yen)
Total			JP Yen

Plan of project / meeting

(Summary, aim, procedure, action plan and expected output)

- * In the case of category A, describe equipment/facility name and duration of use. If you wish to use samples in es-BANK, provide details of information on the samples. You may attach the list in a separate sheet.
- * In the case of category D, describe venue, date, expected number of participants.

Past achievement related to this project or meeting (article, conference presentation, award, patent, etc. by PI and members)

Approval of supervisor

I hereby approve that my student under my supervision Mr/Miss _____ applies for the project/meeting of Joint Usage/Research Center, LaMer, as a member.

Date (d , m , y)

Affiliation

Position

Name

Annual Report
LaMer, Ehime University

Date (d , m , y)

To Director of LaMer

Principle Investigator:

Affiliation _____

Position _____

Name in print _____

Include the report on the result of the project/meeting in a separate page.

1. Project / Meeting title

2. Members of project / meeting

Name	Age	M/F	Affiliation	Position	Contribution part
PI Members					
LaMer Faculty member in charge					

3. Achievements of the project/meeting (publications, conference presentations, awards, patents, etc.)

*** As for the publications, only ones with acknowledgement to LaMer should be listed.**

A large, empty rectangular box with a thin black border, intended for listing achievements of the project/meeting as specified in the text above.

4. Research report (Follow the guideline on the next page)

Guidelines for "4. Research report"

When preparing the "4. Research report", pay attention to the following points.

- (1) The page setup should be A4 and 30 lines (12 point).
- (2) The number of pages should not exceed 5, including figures and tables.
- (3) Write the report concisely and concretely in the following order: title of research project, names of project members (including affiliation), purposes, methods, results, and future challenges. If there are any materials from the research project/meeting (academic paper, symposium abstract book, etc.), attach them with the report. Be sure to inform any academic papers (**only with acknowledgments to LaMer**) that are published after the report is submitted.
- (4) The report will be open to the public through the LaMer website. If you need to suspend the public access of your results due to a patent application, please contact the LaMer Office.

LaMer Office

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