GAME
GLOBAL APPROACH
BY MODULAR EXPERIMENTS

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A WORLDWIDE PROGRAMME
STUDYING GLOBAL CHANGE
GAME SUPPORTS AND CONNECTS
YOUNG MARINE SCIENTISTS

GEOMAR

C|A|U
Kiel University
Christian-Albrechts-Universität zu Kiel

OPENING REMARKS

International cooperation in marine research is of fundamental importance based on the global dimensions of scientific questioning and by virtue of the oceans' sizes alone. In the process of global change, oceans are impacted. Researching these processes is a challenge that can only be taken on through international cooperation.

That is why GEOMAR as well as its predecessors have at all times greatly valued intensive cooperation among scientists from all over the world.
The GEOMAR-based research and study programme GAME (Global Approach by Modular Experiments) connects prospective and established marine scientists and thus promotes GEOMAR's international collaborations in the long term.

Since 2002, GAME has been addressing the consequences of global change for marine ecosystems and has been exploring the problems of the future ocean in a unique approach. Furthermore, GAME promotes international knowledge transfer and trains promising young researchers. In doing so, it takes on long-lasting and far-reaching responsibility for the future of marine science – beyond the borders of Germany - and creates a global research network of tomorrow. GAME has thus achieved significant standing within the GEOMAR and, with its extraordinary concept, is an established programme in the education of aspiring marine scientists.

GAME owes its success in part to the commitment of many sponsors, who not only support the programme financially, but also anchor it in today's society. Their commitment shows how significant ocean research is to them and how strongly they feel about supporting and creating networks for young scientists.

Prof. Dr. Peter Herzig
Director of the GEOMAR Helmholtz Center for Ocean Research Kiel

THE SCIENTIFIC RESEARCH OF TOMORROW REQUIRES INTERCULTURAL EXCHANGE AND INTERDISCIPLINARY NETWORKING

With finite natural resources and a growing global population – with more than 50% in coastal regions – understanding of the oceans and of its fragile coastal ecosystems is one of the most pressing scientific topics.

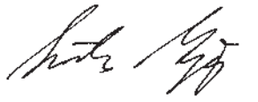
GAME takes on this topic and demonstrates in an exemplary way, how scientific education at the highest level can go hand in hand in training of other skills essential for a successful academic career.

Today's students will sooner than later move with great ease in the globalized scientific landscape working on their topics in international teams that are connected worldwide.

An appreciative and open-minded attitude towards cultural particularities and different approaches will become a prerequisite for the development of sustainable and innovative solutions for our world.

Acceptance of scientific knowledge in the future, the feasibility of solutions, and not lastly, the impact of science are based on the fundamental principles of tolerance and mutual respect.

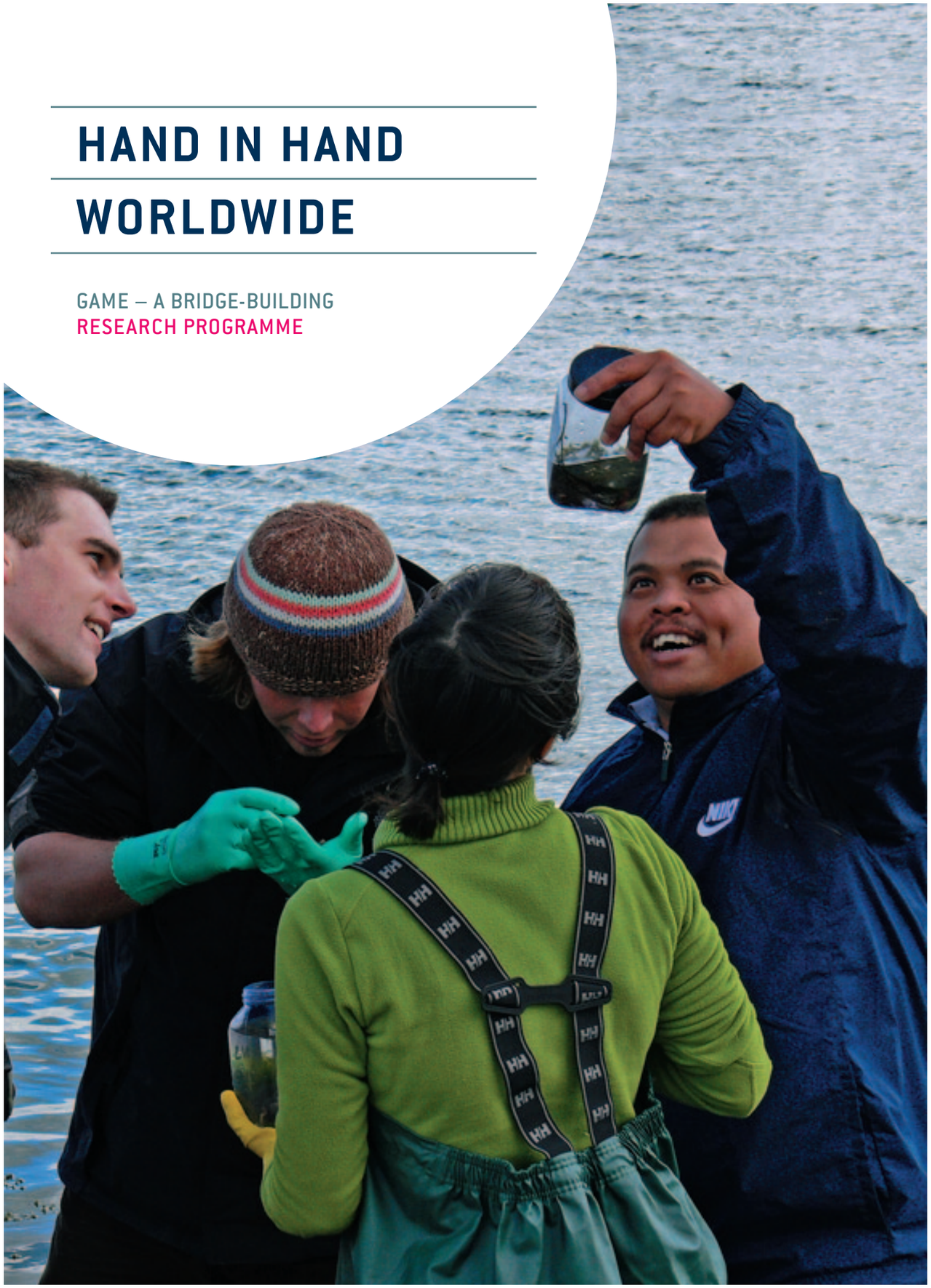
GAME offers a unique opportunity during the course of studies to get to know and practice this form of collaboration in „real" scientific projects. I would like to encourage all marine science students to participate in this programme.



Prof. Dr. Lutz Kipp,
President of Kiel University (CAU)

HAND IN HAND WORLDWIDE

GAME – A BRIDGE-BUILDING
RESEARCH PROGRAMME



WHAT IS GAME?

GEOMAR Helmholtz Centre for Ocean Research Kiel is one of the world's leading institutes in the field of marine science. It aims to study the oceans in their entirety and for this purpose the institute combines research in physics, chemistry, biology and geology under one roof. In 2002, Professor Martin Wahl initiated a special programme in the field of marine biology, establishing a new and innovative scientific approach:

GAME – a programme for the worldwide implementation of identical experiments across geographical and climatic boundaries.

» GAME stands for

GLOBALER
APPROACH BY
MODULAR
EXPERIMENTS

GAME-research projects study the effects of global change on habitats in coastal waters.

GAME is in an international training programme that combines applied research with training for young scientists. Every year, parallel research projects on current ecological issues are organised at different locations around the world. The research is carried out by students working in binational pairs and supervised by scientists from GAME's partner institutes.

The unique GAME projects enable generalizable insights into urgent ecological issues. At the same time GAME links GEOMAR with numerous partner institutes worldwide and creates a global network for the sustainable exchange of scientific knowledge. GAME currently cooperates with 36 marine research institutes on five continents.

This network is growing.

GAME is a great programme. It fosters global thinking and international cooperation without losing sight of local perspectives and leads to new insights about the ocean.

Prof. Dr. Mojib Latif
GEOMAR Helmholtz-Zentrum für Ozeanforschung Kiel

NETWORKS FOR THE OCEANS

A PROGRAMME FOR THE FUTURE
THAT NEEDS PARTNERS

WAYS IN WHICH YOU CAN SUPPORT US

With a partnership

you can enable GAME to continue its successful international cooperation and to pursue and develop excellent teaching within the programme.
You decide about the amount of your contribution to support GAME.

With a sponsorship

you give an individual student the opportunity to participate in an exchange as part of the GAME project. With a fixed sum you can fund a scholarship for one student (travel costs, accommodation, equipment).

We are happy to send detailed information on request.

WHAT ARE THE AIMS OF GAME?

GAME's primary aim is to study the effects of global change on the earth's coastal habitats. Furthermore, GAME works to develop and expand the multinational transfer of knowledge, in particular between industrialized and newly industrializing countries, as well as creating lasting and sustainable networks for marine research.
At the same time GAME supports young scientists and in intensive teaching modules trains them in scientific core skills,such as the communication of research findings in the form of scientific articles and talks.

GAME needs support for this work.

We are looking for businesses, individuals and foundations willing to become involved as partners or sponsors for future projects:

You would like to support sustainable marine research?
You would like to support young scientists?
You would like to be part of a cultural and scientific competence network?

GAME provides opportunities – for its partners and sponsors:

Your benefits as a partner or sponsor

- Your name will be mentioned in GAME publications.
- Improve your company's image by promoting science, young talents, and international exchange.
- You will be personally and exclusively invited to GAME events.
- GAME offers you the opportunity to connect with scientists, students and institutions and to exchange ideas.
- You will be involved in an international research network.

The GAME programme promotes its participants' intercultural competence, making an important contribution to open, unprejudiced and interested engagement with other cultures in order to learn, work and research together.

Kerstin Bockhorn, GAME participant from Germany, now employed as an Environmental Scientist with the municipal Office for Nature and Resource Conservation in Hamburg

GLOBAL THINKING
MODULAR RESEARCH

IN A WORLDWIDE NETWORK
FOR SCIENTIFIC EXCHANGE

HOW DOES GAME WORK?

Every year, up to 16 students from Germany and partner countries take part in the program. After the project phase, the participants use the data obtained to complete their master's thesis.

- Every GAME project begins in Kiel.
- Every year in March all participants meet here and develop the methodological approach for their new research project in a month-long preparatory course, together with scientists from GEOMAR.
- The participants form bi-national teams with one student from Germany and one local student from the respective partner country, where they carry out the experiments starting in April.
- At the beginning of October, all participants return to Kiel, where they evaluate their data and write their final papers supported by scientists at GEOMAR.
- This is followed by a phase with intensive training modules on delivering scientific lectures and preparing publications.
- In the final phase of each project, participants present their findings in talks at universities in Northern Germany and prepare manuscripts for scientific journals.

During my studies, I never experienced the scientific process as closely as I did during GAME. Here you are faced with all the difficulties and problems that arise in scientific work. I found this a challenge, through which I learned a lot. By participating in GAME, I have definitely been encouraged in my decision to stay in science, and I feel well prepared for a PhD project.

Sinja Rist, GAME participant from Germany,
now a doctoral candidate at the Technical University of Copenhagen
in the field of Environmental Engineering

COMPETENCE THROUGH COOPERATION

GAME SUPPORTS CAREERS – AND HELPS TO SECURE THE FUTURE OF COASTAL REGIONS

GAME'S STRENGTHS

- this unique scientific approach [comparable experiments carried out simultaneously worldwide] allows to reveal general principles of great relevance
- high quality due to small numbers of participants
- GAME is a global tool that can serve as a model for other disciplines
- high level of attractiveness through its utilization of the competence and logistics of GEOMAR
- networking of participants and partner institutes
- global transfer of knowledge

GAME promotes

- understanding of global issues and research approaches
- intercultural competence and teamwork skills
- exchange of knowledge, cosmopolitanism and tolerance
- qualification for scientific work at an international level

GAME offers

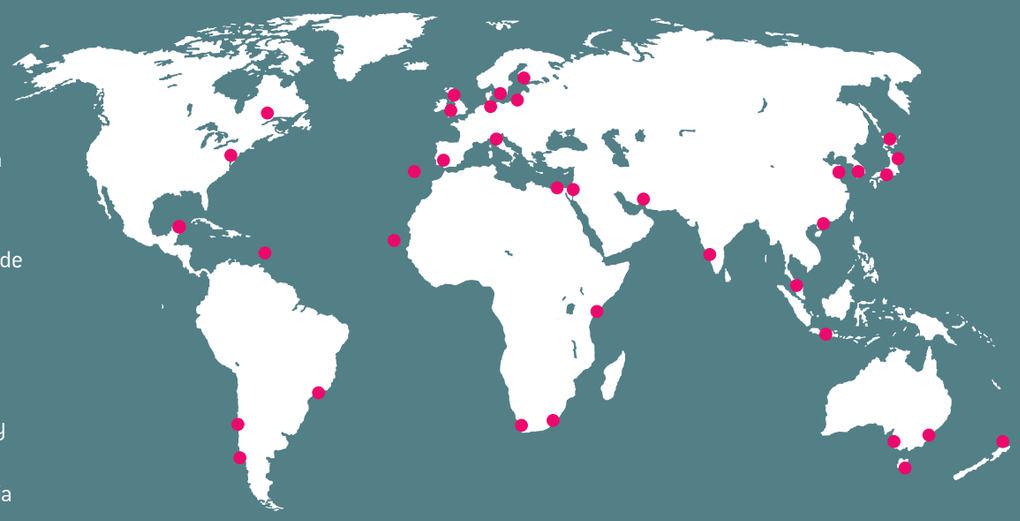
- an excellent education with intensive and individual supervision
- efficient training for optimum career prospects
- research experience abroad before starting a doctoral project
- training in practical work at difficult research locations

In the field of marine ecology, GAME provides an example of the genuine and sustainable transfer of technology and knowledge from the "North" to "newly industrializing countries". The programme also raises young German scientists' awareness of the problems and difficulties of the partner countries.

Nikolaus Gelpke, Marine biologist
Publisher of the journal MARE and member of the GAME board of trustees

THE WORLD POSES QUESTIONS

THE GAME NETWORK IN FIGURES



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Portugal
South Africa
South Korea
Sweden
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UK
USA

GAME – 2002 to 2018
The GAME network currently comprises 36 research institutes in 27 countries. We have scientific partners on 5 continents and can access many sea areas worldwide. So far, 200 students participated in the programme, while the German participants came from 28 different universities from all over Germany.

So far, 40 publications in peer-reviewed journals emerged from the 16 completed GAME projects.

In the period from 2002 to 2018, GAME was funded by 7 foundations and 26 private companies. We thank all our funders for their invaluable support!

GAME FINDS ANSWERS – IN THE OCEANS

The results of many individual studies are comparable and thus reveal connections and relationships that have broad validity.

The oceans contain the greatest variety of species on earth, but are much less well researched than terrestrial habitats. They are of tremendous significance as a source of organic and non-organic resources and as a climate buffer.

GAME focuses on ecosystems of the shallow seas that line the continents. These systems are of paramount importance to humans: they provide essential food resources, are carbon sinks, serve as transport routes and protect the coasts. Already, more than 50 % of the world's population live close to the sea and this percentage is rising continually. For this reason, coastal seas are most affected by global change, as climate warming, rising sea levels, species transfers and intense human use all come together here. This can have far-reaching consequences for the ways in which these ecosystems function.

GAME addresses these consequences. Projects in the programme have posed study questions about invasive ecology and have examined how environmental changes, such as global warming or marine pollution caused by plastic waste, affect species, populations and communities.

› Information on GAME's research projects is available at www.geomar.de/go/game

There is no other way to say it: GAME has changed my life. This global project gave me a rigorous formal training of quantitative analysis of spatial and temporal dynamics in benthic marine communities. GAME showed me the right way and gave me the tools I needed for the path I chose.

Dr. João Canning-Clode, GAME-participant from Portugal
Scientist at MARE – Marine and Environmental Sciences Centre, Madeira Island, Portugal

BOARD OF TRUSTIES

The board of trustees' declared goal is to support GAME owing to the programme ´s unique approach, its structure and its aims within international marine research. All board members feel a special relation to the ocean, and they view marine research and conservation as important objectives for human action in the 21st century. The board members work hard in various areas of society to create an awareness for this field.

As a scientist participating in international research cruises and as a supervisory board member of the International Ocean Institute of Elisabeth Mann Borgese, I have been working on sustainable technology and knowledge transfer from northern states to so-called newly industrialising countries since the mid-1980s. GAME, to me, has the first really straightforward and sustainable format that meets this demand. In addition, this program raises the awareness of young scientists in Germany for problems and complexities in partner countries, and it breaks ground for changing the way we may think in the future.

Nikolaus Gelpke, Publisher of the magazine MARE

The GAME Program allows young students to not only build an initial widespread network for their careers, but it also promotes intercultural exchange and an understanding for the differences between people and their living conditions and circumstances. I find this aspect especially important in the face of global nationalistic trends in politics. Only by building personal relationships between people of different cultures and nationalities will we be able to learn to reduce our prejudices.

Dr. Inka Bartsch, Scientist at the Alfred Wegener Institute,
Helmholtz Centre for Polar and Marine Research (AWI)

GAME follows through with what is being demanded at climate and research conferences: to understand climate change and its impacts on ecosystems as an international task that can only be solved in cooperation. I am always eager to hear about the results of this engaged and ambitious project, about new findings regarding the oceans and about the intercultural experiences of the young scientists.

Sarah Zierul, Science Journalist and Filmmaker

GAME is a wonderful, cost-efficient way for international scientists to commonly work on scientific questions that affect our globe. GAME is also a wonderful instrument for young people to connect and exchange thus creating an understanding of living and working conditions outside of the few large marine science institutes.

Jens Ambsdorf, CEO Lighthouse Foundation ‚for the Seas and Oceans'
in Hamburg and Kiel

If GAME did not exist, someone would have to invent it. GAME creates a wonderful global network for young scientists. That in itself is valuable. But it is more than just that: GAME studies our oceans, which we hardly know and which are more endangered than most people on land (want to) believe. With its research results, GAME contributes towards protecting the ocean as one of our livelihoods. Because everything that happens at sea has an impact on the land.

Dr. Jürgen Rohweder Member of the Maritime Consulting Group,
Chairman of the "Nautischer Verein zu Kiel"

GAME is an innovative initiative in the German research community, which offers the opportunity for young marine scientists to gather scientific and technical knowledge in an international network. One cornerstone of GMT's work is supporting the cooperation between science and industry and the close connection of all participants in the maritime field. This is why I am delighted to offer the GMT's expertise to GAME and thus to play a part in the further development of the program.

Petra Mahnke, Managing Director and Vice Chairwoman of the
German Association for Marine Technology
(Gesellschaft für Maritime Technik e.V. (GMT))

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