

GEMA HERNAN MARTINEZ

Spanish, November 11th 1984

Ph.D. Marine Ecology

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Languages

- **Spanish** (native)
- **English** (fluent)
- **French** (fluent)
- **Catalan** (fluent)

EDUCATION

2012 - 2017

UNIVERSITAT DE LES ILLES BALEARS - Mallorca, SPAIN

Ph.D. - Marine Ecology

Ph.D. thesis: "Defense Strategies against herbivory in seagrasses"

2010 - 2011

UNIVERSITAT DE BARCELONA - IDAEA CSIC - Barcelona, SPAIN

M.Sc. - Marine science: oceanography and coastal management

Master thesis: "Persistent organic pollutants in the marine environment"

2002 - 2008

UNIVERSIDAD COMPLUTENSE DE MADRID - Madrid, SPAIN

B.Sc - Biological Sciences

Undergraduate thesis: "Study of intertidal benthonic fauna"

PROFESSIONAL EXPERIENCE

2012 - 2017 **PhD Student.** Mediterranean Institute for Advanced Studies (IMEDEA-CSIC). Department of Ecology and Marine Resources. Group of Ecology of Marine Macrophytes.

2014 **Teaching assistant.** Practical course on marine environmental management tools.
Summer course at Universidad Internacional del mar.

2012 **Research assistant.** Centre of marine sciences (Universidad do Algarve)- Centro de Estudios Avanzados de Blanes (CEAB, CSIC)

Project: Effects of increased CO₂ and nutrients on seagrass herbivory.

Funding: *European Cooperation in Science and Technology (COST)*

2011 - 2012 **Research assistant.** Institute of environmental assessment and water research. (IDAEA-CSIC).

Sampling, chemical analysis and quantification (HRGC/HRMS) of persistent organic pollutants

Malaspina Expedition 2011 Hespérides Research vessel (45 days at sea)

2009 - 2010 **Research assistant** National institute for agricultural and food research and technology. Laboratory of Medicinal and Aromatic plants. Distillation, extraction of antioxidants and oils, analysis by HPLC and GC.

2008 **Volunteer coordinator.** WWF/Adena.

Vigilance illegal activities in the marine environment, surveys of sea birds and benthonic invertebrates, environmental outreach.

2008 **Project coordinator assistant.** Association Gaia.

Volunteer program coordinator and administrative tasks.

2007-2010 **Environmental outreach.** Mundo Azul Medio ambiente.

Workshops and outdoor activities with students from 3 to 17 years

2007 **Technical director trainee**. Zoo Aquarium Madrid
Design of animal installations, work protocols and behavioural studies.

2006-2007 **Research assistant trainee**. CSIC-National Museum of Natural Sciences
Project Great Bustard: Radiotracking, surveying and gathering of samples and analysis in the laboratory.

RESEARCH VISITS

June-September 2017: Oregon State University (Oregon, USA)
Herbiome: The unexplored link between herbivore diet and microbiome.
Funding: Obra Social La Caixa
Short term scholar

February-May 2016: Universidad Nacional Autónoma de México (Puerto Morelos, México)
Photobiology of the seagrass *Halodule wrightii*
Funding: Banco Santander Foundation
Ph.D student intern

June-September 2015: Oregon State University (Oregon, USA)
ZEN defense. Latitudinal effects of defense strategies against herbivory in the seagrass *Zostera marina*
Funding: Universitat de les illes balears
International visiting student

June-July 2014: Stazione Zoologica Anton Dohrn (Ischia, Italy)
Fish herbivory under a gradient of ocean acidification
Funding: Assemble EUFP7
Ph.D student intern

PUBLICATIONS

In preparation or submission

[8] **Hernán G.**, I. Castejón, J. Terrados and F. Tomas. Resource availability and herbivory damage do not interact to modulate plant defense strategies (*submitted to Journal of Ecology*; IF=5.2)

[7] **Hernán G.**, M.J. Ortega, J. Henderson, J. Alos, K. Boyer, S. Cimon, V. Combes, M. Cusson, A. Dennert, C. Hereu, M. Hessing-Lewis, K. Hovel, P. Jorgensen, S. Kiriakopolos, N. Kollars, M. O'Connor, J. Olsen, P.L. Reynolds, J. Ruesink, J. Terrados, E. Voigt and F. Tomas. Defense against herbivory: Latitudinal patterns in a marine habitat-forming species (*in preparation*)

[6] **Hernán G.**, Hendricks I., Kroeker K., O'Connor M., Tomas F. OA and warming: Meta-analysis of their effects on seagrass defense against herbivory (*in preparation*)

Published articles

[5] Galbán-Malagón, C., **G. Hernan**, E. Abad, J. Dachs, (2017): Persistent Organic Pollutants in Krill from the Bellingshausen, South Scotia, and Weddell Seas. *STOTEN* 610-611, 1487-1495. IF=4.9

[4] **Hernan, G.**, M.J. Ortega, A.M. Gandara, I. Castejon, J. Terrados and F. Tomas, (2017): Future warmer seas: increased stress and susceptibility to grazing in seedlings of a marine habitat-forming species. *Glob. Chang. Biol.* 00:1-14. <https://doi.org/10.1111/gcb.13768>. IF=8.5

[3] **Hernan, G.**, L. Ramajo, L. Basso, A. Delgado, J. Terrados, C.M. Duarte and F. Tomas, (2016): Seagrass (*Posidonia oceanica*) seedlings in a high-CO₂ world: from physiology to herbivory. *Scientific Reports* 6, doi:10.1038/srep38017. IF=4.3

[2] Tomas, F., B. Martínez-Crego, **G. Hernan** and R. Santos, (2015): Responses of seagrass to anthropogenic and natural disturbances do not equally translate to its consumers. *Glob. Chang. Biol.*, 21(11), 4021-4030, doi:10.1111/gcb.13024. IF=8.4

[1] Morales, L., J. Dachs, B. González-Gaya, **G. Hernan**, M. Abalos and E. Abad, (2014): Background Concentrations of Polychlorinated Dibenzo-p-Dioxins, Dibenzofurans, and Biphenyls in the Global Oceanic Atmosphere. *Environ. Sci. Technol.*, 48 (17), 10198–10207, doi:10.1021/es5023619. IF=5.3

CONGRESS COMMUNICATIONS

- Hernán G.**, Castejón, I., Terrados J, Tomas F. "Resistance and tolerance responses to herbivory under increased nutrient conditions and their effects on seagrass palatability". Ecological Society of America Annual meeting (Portland, OR, US, 2017) Oral presentation
- Hernan, G.**, Ramajo, L., Basso, L., Delgado, A., Terrados, J., Duarte, C.M., Tomas, F. "Seagrass (*Posidonia oceanica*) seedlings in a high CO₂ world: from physiology to herbivory". 12th International Seagrass Biology Workshop (Wales, UK., 2016) Oral presentation
- Tomas, F., **Hernan G.**, Martinez A., Terrados J. "Tropicalisation of the Mediterranean Sea: potential impacts of warming on native seagrass-herbivore interactions". Coastal Estuarine Research Federation (CERF) meeting (Portland, USA, 2015) Oral presentation
- Hernan, G.**, Tomas, F., Buia, M.C. and Terrados, J. "Ocean acidification enhances fish herbivory on seagrass". American Fisheries Society Meeting (Portland, U.S., 2015) Oral presentation
- Tomas, F., **Hernán, G.**, Buia, M.C. and Terrados, J. "Seagrass herbivory patterns are altered under ocean acidification". Benthic Ecology Meeting (Quebec city, Canada, 2015). Oral presentation.
- Hernán, G.**, Martínez, A., Terrados, J. and Tomas, F. "Effects of temperature in seagrass seedlings and their trophic relations". Aquatic Science Meeting, Association for the sciences of Limnology and Oceanography (Granada, Spain, 2015). Oral presentation.
- Tomas, F., **Hernan, G.**, Buia, M.C. and Terrados, J. "Ocean acidification modifies within-plant herbivory patterns in the seagrass *Posidonia oceanica*". Aquatic Science Meeting, Association for the sciences of Limnology and Oceanography (Granada, Spain, 2015)
- Tomas, F., Martínez-Crego B., **Hernán G.**, Santos R. "Eutrophication and acidification impacts on seagrass do not equally translate to its consumers". 37th Annual Meeting Pacific Estuarine Research Society, (Newport, Oregon, USA, 2014). Oral presentation.
- Tomas, F., Martínez-Crego B., **Hernán G.**, Santos R. "Contrasting effects of ocean acidification, eutrophication and herbivory on seagrass - herbivore interactions". Ocean Sciences Meeting, (Hawaii, USA 2014). Oral presentation.
- Galbán-Malagón, C., **Hernán, G.**, Berrojalbiz, N., Ojeda, M.J. Abalos, M.J. Abad, E., Dachs, J. "Persistent organic pollutants in Antarctic Krill (*Euphasia Superba*)" SETAC 22nd Annual meeting/ 6th World Congress (Berlin, 2012). Poster
- Hernán, G.**, Varela, F., Navarrete, P., Pérez-Mao, D., López-Cepero, P., Marcos, M. F., Lorenzana, A., Campelo, P., Casquero, P. A., Calvo, R., Sánchez de Ron, D., Cases, A. "*Chemical characterization of plant genetic resources of gentian (Gentiana lutea L.) in the counties of Laciana and Babia (Spain)*" 28th International Horticultural Congress. ISHS Abstracts, Vol. I. (Lisboa, 2010).
- Herraiz, D., Usano-Alemany, J., Cuadrado, J., Cases, M.A., Navarrete, P., López-Mao, D., Lopez-Cepero, P., **Hernán, G.**, Varela, F. "*Chemical characterization of Rosmarinus officinalis essential oil from Alcarria region (Spain) wild populations*" 28th International Horticultural Congress. ISHS Abstracts, Vol. I. (Lisboa, 2010).
- Herraiz, D., Usano-Alemany, J., Cuadrado, J., Cases, M.A., Navarrete, P., López-Mao, D., Lopez-Cepero, P., **Hernán, G.**, Varela, F. "*Phenolic fraction composition (phenolic acids and flavonoids) of Salvia lavandulifolia wild populations from Alcarria region (Spain)*" 28th International Horticultural Congress. ISHS Abstracts, Vol. I. (Lisboa, 2010).
- Varela, F., Peluzzo, A., Berrio, F., De la Rosa, L., Ruano, A., Meana, A., Gómez, D., García, R.M., Larreina, J.R., Díaz, E., Marcos, T., **Hernán, G.**, Sánchez De Ron, D., Pascual. H. "*El Centro de Recursos Fitogenéticos - INIA: Variedades tradicionales de plantas cultivadas recolectadas en Andalucía (1929-2009)*" V Congreso de Mejora genética de plantas SECH (Julio 2010, Madrid). Actas de Horticultura 55:39-40
- Cases, M.A., Navarrete, P., Pérez-Mao, D., **Hernán, G.**, López-Cepero, P., Sánchez, D., Varela, F. "*Recursos genéticos y caracterización química de plantas aromáticas y medicinales en las Islas Pitiusas*" V Congreso de Mejora genética de plantas SECH (Julio 2010, Madrid). Actas de Horticultura 55:29-30
- Varela, F., **Hernán, G.**, Navarrete, P., Pérez, B., Pérez-Mao, D., López-Cepero, P., Cuadrado, J., Herraiz, D., Usano-Alemany, J., Sotomayor, J.A., Jordán, M.J., Cristobal, R., Fanlo, M., Melero, R., Moré, E., Cabot, P., Asensio S.-Manzanera, M.C., Asensio Vegas, C., Martín, H., Herrero, B., Fernández, M., Peluzzo, A., González Benito, M.E., Pérez, F., Sánchez, D., Cases, M.A. "*Bioprospecting: genetic resources of medicinal and aromatic plants in Spain*". 4th International Symposium Breeding Research on Medicinal and Aromatic Plants, ISHS (Ljubljana, Slovenia, 2009).

GRANTS AND AWARDS

Mobility of young researchers 2017. Obra Social La Caixa
Training and travel grants 2016. British Ecological Society
Becas Iberoamérica 2015. Banco Santander Foundation.
Advance course support 2015. The royal Swedish academy of science.
Research grant 2015. University of the Balearic Islands.
COST Training school support 2013. EU framework programme.
Predoctoral fellowship FPI 2012-2016. Govern de les illes Balears.
Short term scientific mission 2012. COST-EU framework programme.

FUNDED PROJECTS

R&D projects funded through competitive calls of public or private entities

Compresión holística del funcionamiento y resiliencia de una fanerógama marina a perturbaciones locales: de escalas moleculares a escalas biogeográficas.

Funded by: Spanish Ministry of Science and Innovation. **Duration 2015-2018**

P.I.: J. Terrados / F. Tomas (IMEDEA).

Independent and interactive effects of increased CO₂ and nutrients on seagrass – herbivore interactions

Funded by: European Union FP7 research infrastructure program ASSEMBLE

P.I.: F. Tomas (IMEDEA).

Seagrass restoration through seedlings: effects of light, nutrients and herbivory.

Funded by: Spanish Ministry of Science and Innovation. **Duration 2011-2013**

P.I.: J. Terrados / F. Tomas (IMEDEA).

Circumnavigation Expedition Malaspina 2010: Global Change and Biodiversity. Exploration of the Global Ocean.

Funded by: Spanish Ministry of Science and Innovation. Program CONSOLIDER INGENIO 2010.

P.I.: Carlos M Duarte.

Selection and breeding for its agronomic behaviour and richness in active principles of spanish wild populations of *Lavandula latifolia*, *Rosmarinus officinalis*, *Salvia lavandulifolia* y *Thymus mastichina*.

Funded by: Spanish Ministry of Science and Innovation.

Participants: INIA, SIA CLM, ITACyL, UVa, CTCF, IRTA. **Duration: 2010-2012**

P.I.: M.A. Cases.

Seagrass-herbivore interactions in an acidified and eutrophic ocean.

Funded by: Padi Foundation, US. **Duration: 2012-2013**

P.I.: B. Martínez-Crego and F. Tomas.

Gentian studies in the occidental mountains of Leon for a comprehensive management.

Funded by: Junta de Castilla y León. **Duration: 2008-2012**

Participants: Universidad de León, Universidad Politécnica de Madrid e INIA

P.I.: Pedro Casquero, Carlos Soriano y Federico Varela.

Survey and cataloging of genetic resources of aromatic plants in Baleares, selection of mother plant for genera of commercial interest.

Funded by: Comunidad Autónoma de las Illes Balears. **Duration: 2008-2009**

Participants: INIA y Destilerías Marí Mayans C.B.

P.I.: M.A. Cases.

SCIENTIFIC OUTREACH

Science fairs for students (IMEDEA)

Women-in-science events with general public (Caixaforum)

Radio, press and television (IB3, tve2)

SCIENTIFIC CRUISES

2011: Malaspina Expedition; Hespérides Research vessel - **45 days**

Sampling of persistent organic pollutants: plancton nets, aerosol sampling, air sampling, water sampling

2011: Cornide de Saavedra - **3 days**

fishing nets, trawling, fish measurements, bottom sampling dredges

CERTIFICATES

Coastal Skipper

PADI Advance Water Diver-Rescue Diver-Nitrox

Driving licence B

First Aid and CPR (Red Cross)

Discharge Book- General Directorate of maritime affairs. Ministry of development

Advanced Medical Care training- General Directorate of maritime affairs. Ministry of development.

ADDITIONAL COURSES TAKEN

Software:

Data analysis and statistical inference. MOOC-Duke university

Computing for data Analysis (R programming). MOOC- Johns Hopkins University.

Coastal photogrammetry technician, GPS and GIS. Universidad Politécnica de Madrid.(188h)

Basic GIS techniques and georeference with GEOlocate. GBIF - CSIC (30h)

BIBMASTER. Databases for management of projects in biodiversity. National node of information in biodiversity (GBIF) and CSIC (12h.)

Course of advanced Access. Net Office for the INIA (20 h.)

Modelization and persistent organic pollutants dynamics. IDAEA-CSIC (24h)

Scientific:

Marine litter. United Nations Environmental Program.

Bayesian Statistics. University of California Santa Cruz

Marine Evolution under Climate Change. University of Gothenburg.

Training School on Effects of increased CO₂ /OA on Seagrass Meadows. COST

Writing in the science. MOOC-Stanford University.

Opening science (Scientific divulgation). La Caixa Foundation

Project Management. *European Social Fund* (270h.)

Urban solid waste Management technician. Universidad Politécnica de Madrid (120 h.)

Environmental Management in the company. IFI Formation. Plan CEIM (80 h.)

Integral Management of quality and environment and Labour Risk Prevention (55 h.)

Theoretical and practical Course "Canary islands cetaceans". Society for the Study of the Cetaceans in the Canary Islands (SECAC).

Navigation and sailing

Maritime familiarization and Safety (STCW 95) Ministry of development (74 h.)

Science and art of Navigation. Universidad internacional del mar (120h)

PROFESSIONAL SKILLS

Project management, grant writing, research methodologies, data collection and analysis.

Excellent writing and communication skills.

Fieldwork skills:

Diving sampling and surveys.

On board sampling in scientific cruises: bottom sampling dredges, fishing and plankton nets, traps, CTD, radiometer, hydrophones...

Mesocosm set up and maintenance.

Lab/instrumentation skills:

Spectrophotometry (analysis of organic compounds).

Photosynthetic measurements

Extraction, purification and quantification of compounds for HPLC, HRGC/HRMS.

VOLUNTARY WORKS

2011 CRAM (Centro de recuperación de animales marinos)

Assistant in a marine animal rehabilitation center.

2010 Anse (Wildlife association)

Research and monitoring program of interaction between bottlenose Dolphin and fish farms Project. Marine birds survey and cetaceans monitoring on board.

2008 Global Nature Foundation.

Survey and study of birds` mortality in electrical wires of Fuerteventura's island. Sea shore bird surveys.

2007 WWF/Adena

Volunteering in National Parks in " Archipelago Chinijo " (Canary islands)

Vigilance of poaching, illegal activities in the marine environment, collection of residues from the sea shore.

Diagnosis, environmental assessment and study of introduced flora.

2007 GREFA (Group for the recovery of wild fauna)

Collaborating in the project Lesser Kestrel (*Falco naumanni*)

2006 SEO/Birdlife (Spanish Ornithological Society)

Volunteering in National Parks in " Montes de Valsain ". Installation and repair of nest boxes