

GEMA HERNAN MARTINEZ

Postdoctoral Fellow

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EDUCATION

- 2012 - 2017 **University of the Balearic Islands**- Mallorca, SPAIN
Ph.D. - Marine Ecology
Ph.D. dissertation: "Defense strategies against herbivory in seagrasses"
- 2010 - 2011 **University of Barcelona** - IDAEA CSIC - Barcelona, SPAIN
M.Sc. - Marine science: oceanography and coastal management
Master thesis: "Persistent organic pollutants in the marine environment"
- 2002 - 2008 **Complutense University of Madrid** - Madrid, SPAIN
B.Sc - Biological Sciences
Undergraduate thesis: "Intertidal benthonic fauna in Combarro beach "

POSITIONS AND EMPLOYMENT

2021-current **Postdoctoral Fellow**. Mediterranean Institute for Advanced Studies.
Supervisor: Fiona Tomas

2018-2020 **Postdoctoral Associate**. Florida State University. Department of Biological Science. Supervisor: Andrew Rassweiler.

2018 **Regional Fisheries Observer**. International Commission for the Conservation of Atlantic Tunas (ICCAT)-MRAG, Ltd. (19 days at sea).

2017 **Visiting Scholar**. Oregon State University.
Effects of different macrophytic diets on herbivore microbiome and fitness.

2012 - 2017 **Ph.D. Research Assistant**. Mediterranean Institute for Advanced Studies (Spain). Department of Ecology and Marine Resources.
Seagrass restoration through seedlings: effects of light, nutrients and herbivory.
Better comprehension of seagrass functioning and resilience to local perturbations.

2015 **Visiting Scholar**. Oregon State University.
Latitudinal effects of defense strategies against herbivory in the seagrass *Zostera marina*.

2016 **Visiting Scholar**. Universidad Nacional Autónoma de México (México).
Photobiology of the seagrass *Halodule wrightii*.

2014 **Visiting Scholar.** Stazione Zoologica Anton Dohrn (Ischia, Italy).
Fish herbivory under a gradient of ocean acidification.

2012 **Research Assistant.** Centre of Marine Science (University of Algarve, Portugal)-Centre for Advanced Studies of Blanes (Spain)
Independent and interactive effects of increased CO₂ and nutrients on seagrass-herbivore interactions.

2011 - 2012 **Research Assistant.** Institute of Environmental Assessment and Water Research. (Spain). (45 days at sea).

2009 - 2010 **Research Assistant.** National Institute for agricultural and food research and technology. Laboratory of Medicinal and Aromatic Plants.

2007-2010 **Environmental and scientific outreach.** Mundo Azul Medio ambiente.
Workshops and outdoor activities with students from 3 to 17 years

PUBLICATIONS

Manuscripts in preparation (only as first author)

[17] **Hernán G.**, Dubel, A. McHenry, J., Lester, S.E. and Rassweiler, A. Changes in coastal systems along the Gulf coast of Florida: 15 years of in situ data. (to be submitted to Journal of Ecology)

Submitted

[16] **Hernán G.**, Dubel, A., Caselle, J., Kushner, D., Sprague, J.L. and Rassweiler, A. Measuring the efficiency of alternative biodiversity monitoring sampling strategies. (*Under review in Ecological applications*)

[15] **Hernán G.**, M.J. Ortega and F. Tomas. Contrasting defense allocation across ontogeny in the seagrass *Posidonia oceanica*. (*Under review in Phytochemistry*)

[14] Mañez-Crespo, Tomas F., Fernandez-Torquemada Y., Royo L., Espino F., Antich L., Bosch N. E., Castejón I., **Hernan G.**, Marco-Méndez C., Mateo-Ramírez A., Pereda-Briones L., del Pilar-Ruso Y., Terrados J., Tuya F. Variation in fish abundance, diversity and assemblage structure in seagrass meadows across the Atlanto-Mediterranean province (*Under review in Marine Ecology Progress Series*)

[13] Mateo-Ramírez, A., Royo, Antich L., Castejon, I., MañezCrespo, J., Pereda-Briones, L., Hernan,G., Terrados, J., and Tomas, F. Effects of the new invasive macroalga *Halimeda incrassata* on the epifaunal communities associated with the native seagrass *Cymodocea nodosa* in the Mediterranean Sea. (*Submitted to Marine Environmental Research*)

Published

[12] González L., Vásquez R., López T., **Hernán G.**, Iglesias-Prieto R., Enriquez, S. Validation of

parameters and protocols derived from chlorophyll a fluorescence commonly utilized in marine ecophysiological (*In press Functional Plant Biology*)

[11] McHenry J., Rassweiler A., **Hernán G.**, Uejio C.K., Pau S., Dubel A.K., Lester S.E. (2021): Modelling the biodiversity enhancement value of seagrass beds. *Divers. Distrib.* 00,1-14. doi:10.1111/ddi.13379

[10] **Hernán G.**, M.J. Ortega, J. Henderson, J. Alos, K. Boyer, S. Cimon, V. Combes, M. Cusson, A. Dennert, C. Hereu, M. Helsing-Lewis, K. Hovel, P. Jorgensen, S. Kiriakopolos, N. Kollars, M. O'Connor, J. Olsen, P.L. Reynolds, J. Ruesink, E. Voigt and F. Tomas,(2021): Resource availability shapes latitudinal gradients of plant defense against herbivory in a marine foundation species. *Global Ecol Bioeogr.* 30:220-234 doi:10.1111/geb.13217

[9] Máñez-Crespo, J., Tuya, F., Fernández-Torquemadad, Y., Royo, L., del Pilar-Ruso, Y., Espino, F., Manent, P., AntichL, Castejón, I., Curbelo, L., de la Ossa J.A., Hernan, G., Mateo-Ramírez, A., Pereda-Briones, L., Jiménez-Ramos, R., Egea, L.G., Procaccini, G., Terrados, J., Tomas, F.(2020) Seagrass *Cymodocea nodosa* across biogeographical regions and times: Differences in abundance, meadow structure and sexual reproduction. *Mar. Environ. Res.* 162:105159 doi:10.1016/j.marenvres.2020.105159

[8] Lester, S.E., Dubel, A., **Hernán G.**, McHenry, J. and Rassweiler A., (2020): Spatial planning principles for marine ecosystem restoration. *Front. Mar. Sci.* 7:328. doi: 10.3389/fmars.2020.00328

[7] Rassweiler, A., Dubel, A., **Hernán, G.**, Kushner, J.D., Caselle, J.E., Sprague, J.L., Kui, L., Lamy,T., Lester, S.E., Miller. R.J., (2020): Roving divers surveying fish in fixed areas capture similar patterns in biogeography but different estimates of density when compared with belt transects. *Front. Mar. Sci.* 7:272. doi: 10.3389/fmars.2020.00272

[6] **Hernán G.**, I. Castejón, J. Terrados and F. Tomas, (2019): Herbivory and resource availability shift plant defense and herbivore feeding choice in a seagrass system. *Oecologia*, 189, 719–732. <https://doi.org/10.1007/s00442-019-04364-6>. IF=3.1

[5] Galbán-Malagón, C., **G. Hernán**, E. Abad, J. Dachs, (2017): Persistent Organic Pollutants in Krill from the Bellingshausen, South Scotia, and Weddell Seas. *STOTEN* 610-611, 1487-1495. <https://doi.org/10.1016/j.scitotenv.2017.08.108>. IF=4.9

[4] **Hernán, 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] **Hernán, 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. Hernán** 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. Hernán**, 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

HONORS

RESEARCH GRANTS

Postdoctoral fellowship 2021-2023. University of the Balearic Islands (*Competitive grant*)

Research grant for young researchers 2017. Obra Social La Caixa (*Competitive grant*)

Predocctoral fellowship FPI 2012-2016. Govern de les illes Balears (*Competitive grant*)

Becas Iberoamérica 2015. Banco Santander Foundation (*Competitive grant*)

Research grant 2015. University of the Balearic Islands (*Competitive grant*)

COST Training school support 2013. EU framework programme. (*Competitive grant*)

Short term scientific mission 2012. COST-EU framework programme (*Competitive grant*)

TRAVEL AWARDS

FSU Professional development travel award 2020. Florida State University.

ESA travel award 2019. Ecological Society of America.

FSU-OPDA NPA travel award 2019. Florida State University.

Training and travel grants 2016. British Ecological Society.

Advance course support 2015. The Royal Swedish Academy of Science.

SELECTED PRESENTATIONS

Hernán G., M.J. Ortega, J. Henderson, J. Alos, K. Boyer, S. Cimon, V. Combes, M. Cusson, A. Dennert, C. Hereu, M. Helsing-Lewis, K. Hovel, P. Jorgensen, S. Kiriakopolos, N. Kollars, M. O'Connor, J. Olsen, P.L. Reynolds, J. Ruesink, E. Voigt and F. Tomas. "Resource availability shapes latitudinal gradients of plant defense against herbivory in a marine foundation species". Ecological Society of America (Online, 2021)

Hernán G., Dubel, A., Rassweiler A. "Comparing the efficiency of biodiversity monitoring sampling programs". Ocean Science Meeting (San Diego, CA, US, 2020).

Hernán G., Dubel, A., Rassweiler A. "Comparing the efficiency of biodiversity monitoring programs". Ecological Society of America Annual Meeting (Louisville, KY, US, 2019).

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).

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).

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).

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).

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).

PARTICIPATION IN FUNDED PROJECTS

Funded by: NASA

Demonstrating an Effective Marine Biodiversity Observation Network in the Santa Barbara Channel

PI: R. Miller

Co-PIs: D. Siegel, C. Carlson, K. Lafferty, A. Rassweiler, D. Reed, P. Kyriakidis, D. Iglesias-Rodriguez, B.S. Manjunath, M. Love, A. Thompson, J. Hildebrand, D. McCauley.

Funded by: National Academy of Science's Gulf Research Program Duration 2018-2020

Developing an integrated monitoring and assessment framework for evaluating ecosystem service outcomes from seagrass restoration in the Gulf of Mexico

PI: S. Lester

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

For a better comprehension of seagrass functioning and resilience to local perturbations: from molecular to biogeographic scales.

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

Funded by: European Union FP7 research infrastructure program ASSEMBLE

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

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

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

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

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

Funded by: Padi Foundation, US.

Duration: 2012-2013

Seagrass-herbivore interactions in an acidified and eutrophic ocean.

P.I.: B. Martínez- Crego and F. Tomas.

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

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

P.I.: Carlos M Duarte.

Funded by: Spanish Ministry of Science and Innovation.

Duration: 2010-2012

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

Participants: INIA, SIA CLM, ITACyL, UVa, CTCF, IRTA.

P.I.: M.A. Cases.

Funded by: Junta de Castilla y León.

Duration: 2008-2012

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

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

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

Funded by: Comunidad Autónoma de las Illes Balears

Duration: 2008-2009

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

Participants: INIA y Destilerías Marí Mayans C.B.

P.I.: M.A. Cases.

INVITED SEMINARS

2020 **Invited Seminar.** Bodega Marine Laboratory-UC Davis.

Seagrass responses to environmental changes: the herbivory perspective.

2019 **Invited Seminar.** Florida State University.

Effects of environmental changes in seagrass herbivory.

2018 **Invited Seminar.** Oregon State University.

Resource availability shapes latitudinal patterns of plant defense traits in a marine foundation species.

TEACHING EXPERIENCE & MENTORING

2019 **Guest Lecturer.** Florida State University.

BSC3938 Careers in Biological Science.

2019 **Guest Lecturer.** Florida State University.

BSC3930 Seminar in Biological Frontiers.

2018-ongoing. **Mentor.** Jennifer McHenry. PhD candidate. FSU Dept. Geography.

“Geographic patterns of marine biodiversity and ecosystem services benefits in the Anthropocene”

2014 **Teaching Assistant.** University of the Balearic Islands.
Master in Marine Ecology. Fieldwork teaching assistant.

2014 **Summer Course Lecturer.** Universidad Internacional del mar.
Practical course on marine environmental management tools. Lectures and fieldwork.

2014-2015 **Mentor.** Alberto Martínez. MSc Marine Ecology University of the Balearic Islands.
“Effect of temperature in the ecology of juvenile stages of *Posidonia oceanica*”

SKILLS

Software skills:

R, Matlab

Fieldwork skills:

Diving sampling and surveys (diving and boating certified).

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

Sample preparation

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

Language:

Fluent in English, French and Catalan, native Spanish

SYNERGISTIC ACTIVITIES

Journal Reviewer: Nature Ecology and Evolution, Global Change Biology, Journal of Ecology, ICES Journal of Marine Science, Marine Pollution Bulletin, Marine Environmental Research, Frontiers in Marine Science, Scientia Marina.

Service: FSU Postdoctoral Association (Vice-president 2019, President 2020), FSU Spring event Co-Chair (2019, 2020), FSU Fall event Co-Chair (2019), Jury of the Capitol Regional Science Fair (2019, 2020), FSU travel grants for postdocs (Reviewer July 2019).

Memberships: Ecological Society of America, The Oceanography Society, National Postdoc Association.

SCIENTIFIC OUTREACH

Skype a scientist. Skype with classrooms around the world (2018-current).

Science fairs for students and general public (IMEDEA-Spain, FSU-CML).

Women-in-science events with general public (Caixaforum-Spain, Oasis center for women and girls-Tallahassee).

Radio, press and television (interviews IB3, participation in documentary tve2).