BERNARDO OSCAR BROITMAN ROJAS

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BIRTHDATE: March 22, 1973; Concepción, Chile.
NATIONALITY: Chile
RUT: 8.530.081-4

ACADEMIC BACKGROUND

Education

Ph. D. (2004) Ecology, Evolution and Marine Biology, University of California, Santa Barbara
M. A. (2002) Ecology, Evolution and Marine Biology, University of California, Santa Barbara
B. Sc. (1995) Biological Sciences, Pontifícia Universidad Católica de Chile

Research & Academic positions

- Research Assistant, 1994-1996. Departamento de Ecología, Facultad de Ciencias Biológicas. Pontificia Universidad Católica de Chile. Santiago, Chile.
- Research Assistant, 1996-1999. Estación Costera de Investigaciones Marinas, Facultad de Ciencias Biológicas. Pontificia Universidad Católica de Chile. Santiago, Chile.
- Postdoctoral Fellow, 2004-2005. Marine Science Institute, University of California, Santa Barbara. California, USA
- Postdoctoral Fellow, 2005-2008. National Center for Ecological Analysis and Synthesis, University of California, Santa Barbara. California, USA
- Research Associate, 2006-2012. Center for Advanced Studies in Ecology and Biodiversity (CASEB). Pontificia Universidad Católica de Chile. Santiago, Chile

- Senior Research Fellow, 2007-present. Centro de Estudios Avanzados en Zonas Áridas (CEAZA). Coquimbo, Chile
- Executive Director, 2009-2016. Centro de Estudios Avanzados en Zonas Áridas (CEAZA). La Serena, Chile
- Visiting Professor, 2011-present. Facultad de Ciencias del Mar, Universidad Catolica del Norte. Coquimbo, Chile.
- Research Associate, 2011-2017. Núcleo Milenio Centro de Conservación Marina (CCM).
- Deputy Director, 2013-present. Núcleo Milenio Centro para el estudio de Forzantes Multiples sobre Sistemas Marinos (MUSELS).
- Visiting Scholar, 2nd Semester, 2016. Facultad de Ciencias Ambientales - EULA, Universidad de Concepción, Chile
- Associate Professor, 2019. Departamento de Ciencias, Facultad de Artes Liberales, Universidad Adolfo Ibañez, Viña del Mar, Chile.
- Full Professor, 2020-present. Departamento de Ciencias, Facultad de Artes Liberales, Universidad Adolfo Ibáñez, Viña del Mar, Chile.
- Visiting Professor, 2021-present. Programa de Doctorado en Ciencias con mención Biodiversidad y Biorecursos, Facultad de Ciencias, Universidad Católica de la Santísima Concepción. Concepción, Chile.

Undergraduate teaching

Historia del Universo y la Vida en la Tierra (CORE 302). Facultad de Artes Liberales, Departamento de Ciencias (2019-present)
Principles of Climate Change. Department of Education, Universidad de La Serena (2014)
Invertebrate Zoology (BIO 116) Department of Ecology, Evolution and Marine Biology, University of California. Santa Barbara, California, USA. Teaching Assistant (2003)
Introduction to Biology (BIO 1A) Department of Molecular, Cellular & Developmental Biology, University of California. Santa Barbara, California, USA. Teaching Assistant (2001)
Principios de Ecología y Medio Ambiente. Departamento de Ecología, Pontifícia Universidad Católica de Chile. Santiago, Chile. Instructor (1994)
Zoología de Vertebrados. Departamento de Ecología, Pontifícia Universidad Católica de Chile. Santiago, Chile. Teaching Assistant (1994)

Zoología de Invertebrados Marinos. Departamento de Ecología, Pontifícia Universidad Católica de Chile. Santiago, Chile. Teaching Assistant (1993)

Graduate teaching

Biogeografía Marina (BM9A01). Facultad de Ciencias del Mar, Universidad Católica del Norte. Coquimbo, Chile. Guest Professor (2007)

Taller Biología Computacional, Ecología de Poblaciones y Comunidades (ECEV 423). Instituto de Ecología y Evolución. Universidad Austral de Chile. Lecturer (2008)

Advanced Readings in Ecology. Facultad de Ciencias del Mar, Universidad Católica del Norte. Coquimbo, Chile. Lecturer (2008-2009, 2011)

Ecological Indicators for Conservation and Management. Facultad de Ciencias del Mar, Universidad Católica del Norte. Coquimbo, Chile. Lecturer (2009)

Taller Biología Computacional, Ecología de Poblaciones y Comunidades (ECEV 423). Instituto de Ecología y Evolución. Universidad Austral de Chile. Lecturer (2009)

Programming Tools. Facultad de Ciencias del Mar, Universidad Católica del Norte. Coquimbo, Chile. Lecturer (2011)

Applied Ecology. Dr-BEA programme, Universidad Católica del Norte. Coquimbo, Chile. Invited Lecturer (2012-2013)

Taller de Biología Computacional. Doctorado en Ciencias Ambientales – EULA, Universidad de Concepción, Chile. Lecturer (2016)

Applied Ecology. Dr-BEA programme, Universidad Católica del Norte. Coquimbo, Chile. Lecturer and course coordinator (2015-2018)

Applied Ecology. Dr-BEA programme, Universidad Católica del Norte. Coquimbo, Chile. Invited Lecturer (2019-present)

Sistemas Biológicos. Doctorado en Ingeniería de Sistemas Complejos. Universidad Adolfo Ibañez, Chile. Invited Lecturer (2019- present)

Student supervision

Graduated & Current

1 - Mauricio Cifuentes M.Sc. (2008) Marine Sciences, Facultad de Ciencias del Mar, Universidad Catolica del Norte. Coquimbo, Chile. **Committee member**. Main advisor: Dr. Martin Thiel

Variación temporal en la disponibilidad de sustrato colonizable y sus efectos en la sucesión de comunidades incrustantes en la costa norte de Chile

2 - Andres Caro, Ph.D. (2009) Departamento de Ecologia, Facultad de Ciencias Biológicas. Pontificia Universidad Católica de Chile. Santiago, Chile. **Extramural Committee member**. Main advisor: Dr. Juan Carlos Castilla & Dr. Sergio A. Navarrete
Efectos de la variabilidad en reclutamiento sobre la estructura comunitaria y la competencia por espacio en sistema intermareal de Chile central

3 - Galaxia Cortés, M.Sc. (2009) Marine Sciences, Facultad de Ciencias del Mar, Universidad Catolica del Norte. Coquimbo, Chile. **Committee member**. Main advisor: Dr. Guillermo Luna-Jorquera
Regulación poblacional en el pingüino de Humboldt: el rol de la denso-dependencia y forzamientos ambientales sobre la sobrevida de los polluelos

4 - Stella Januario, Ph.D. (2012) Departamento de Ecologia, Facultad de Ciencias Biológicas. Pontificia Universidad Católica de Chile. Santiago, Chile. **Extramural Committee member**. Main advisor: Dr. Sergio A. Navarrete
Asentamiento, canibalismo y depredación entre estadios postlarvales de dos especies de jaibas depredadoras del género *Acanthocyclus*

5 - Mauricio Oróstica, M.Sc. (2013) Marine Sciences, Facultad de Ciencias del Mar, Universidad Católica del Norte. Coquimbo, Chile. **Co-Advisor** with Dr. Julio A. Vasquez
Efecto de la herbivoría sobre la estructura espacial del reclutamiento de *Lessonia berteroana* Montagne (Laminariales, Phaeophyceae): Consecuencias para la coalescencia

6 - Evelyn Álvarez M.Sc. (2013) Facultad de Ciencias, Departamento de Biología, Universidad de La Serena, Chile. **Committee member**. Main Advisor: Dr. Angeline Bertin
Importancia relativa del ambiente local y de la dispersión sobre la estructuración de comunidades de humedales altoandinos.

7 - Iris Moreno B.Sc. (2014) Marine Biology, Facultad de Ciencias del Mar, Universidad Católica del Norte. Coquimbo, Chile. **Main Advisor**.
Inversión reproductiva y reclutamiento, de dos moluscos intermareales en el límite sur de su distribución geográfica

8 – Jessica Bonnicelli, Ph.D (2014) Department of Oceanography, Facultad de Ciencias Naturales y Oceanográficas, Universidad de Concepción, Chile. **Extramural Committee member**. Main Advisor: Dr. Fabian J. Tapia
Variabilidad diurna del viento y condiciones hidrográficas como determinantes del transporte y patrones de asentamiento de larvas de invertebrados bentónicos en la Bahía de Cartagena – Chile central

9 - Alonso Vega, Ph.D. (2015) Dr-BEA. Facultad de Ciencias del Mar, Universidad Católica del Norte. Coquimbo, Chile. **Main Advisor**.

Indicadores para el monitoreo de la integridad ecológica de praderas explotadas de huirales explotados del complejo *Lessonia nigrescens* en el norte de Chile

10 – Mario León, Ph.D. (2016) Dr-BEA. Facultad de Ciencias, Universidad de La Serena. Chile. **Committee member**. Main Advisor: Dr. Francisco A. Squeo
Interacciones en plantas en una comunidad semiárida del norte-centro de Chile: El rol de la facilitación, competencia y perturbación en las plantas

11- Carlos Lara Ph.D. (2016) Dr-BEA. Facultad de Ciencias del Mar, Universidad Catolica del Norte. Coquimbo, Chile. **Main Advisor**
Escala-dependencia de los procesos biofísicos costeros y su rol sobre la estructura de la biodiversidad marina
Currently: Assistant Professor, Universidad Bernardo O'Higgins (2017-2019), Assistant Professor, Universidad Católica de la Santísima Concepción (2020-present)

12- Cynthia Asorey Ph.D. (2017) Dr-BEA. Facultad de Ciencias del Mar, Universidad Catolica del Norte. Coquimbo, Chile. **Committee member**. Main advisor: Dr. Pilar A. Haye
Diversificación y coexistencia de Lottidae (Mollusca: Patellogastropoda) en la costa del Pacífico Suroriental

13- Germán Zapata Ph.D. (2020) Dr-BEA. Facultad de Ciencias del Mar, Universidad Catolica del Norte. Coquimbo, Chile. **Committee member**. Main advisor: Dr. Javier Sellanes.
Biodiversity, structure and trophic functioning of marine communities in Rapa Nui (Easter Island)
Currently: Postdoctoral scholar, University of New Caledonia.

14 – Adrien Chevallier (2021) Dr-BEA. Facultad de Ciencias del Mar, Universidad Catolica del Norte. Coquimbo, Chile. **Main Advisor** (co-tutored with Dr.Wolfgang Stotz)
Regulatory mechanisms of small-scale fishery systems: Analysis of socioeconomic and biophysical factors within Chilean continental fishery systems
Currently: Postdoctoral Scholar, Université de Montpellier, Francia

15 – Elizabeth Curra (2021) Programa de Doctorado en Ciencias Ambientales, Facultad de Ciencias Ambientales, Universidad de Concepcion. **Committee member**. Main advisor: Dr. Cristian A. Vargas. Efectos del uso del suelo en la disponibilidad de la Materia Orgánica Disuelta Coloreada (CDOM) y su influencia en el sistema de carbonato de la zona costera adyacente.
Currently: Postdoctoral Scholar, Instituto Milenio SECOS, Chile

16 – Diana Coral Santacruz (2019-current) Dr-BEA. Facultad de Ciencias del Mar, Universidad Catolica del Norte. Coquimbo, Chile. **Committee member**. Main advisor: Dr. Pilar A. Haye.
Estructura genética adaptativa espacio-temporal de seis bancos naturales de *Mytilus chilensis* (Bivalvia: Mytilidae) ubicados entre los 39º y 43ºS en la costa chilena.

17 – Carmen Rosa Liza Sal y Rosas M.Sc. (2021) Magister en Ciencias del Mar y Recursos Costeros. Facultad de Ciencias del Mar, Universidad Catolica del Norte. Coquimbo, Chile. **Committee member**. Main advisor: Dr. Wolfgang Stotz.
Estructura genética y dinámica de poblaciones del recurso macha *Mesodesma donacium*

18 – Daniel González Aragón (2021- current) Programa de Doctorado en Ciencias con mención Biodiversidad y Biorecursos, Facultad de Ciencias, Universidad Católica de la Santísima Concepción. Concepción, Chile. **Co-Advisor**, Main advisor Dr. Carlos Lara.
Spatial and temporal variation of giant kelp, *Macrocystis pyrifera*, measured from distribution modeling and remote sensing in Chile.

19 – Charel González Salinas (2021- current) Programa de Magister en Ecología Marina, Facultad de Ciencias, Universidad Católica de la Santísima Concepción. Concepción, Chile. **Co-Advisor**, Main advisor Dr. Carlos Lara.

20 – Felipe I. Torres (2022 – current) Programa de Doctorado en Ciencias con mención Biodiversidad y Biorecursos, Facultad de Ciencias, Universidad Católica de la Santísima Concepción. Concepción, Chile. **Co-Advisor**, Main advisor Dr. Carlos Lara. Susceptibility to collapse of Capture-Based Aquaculture; a spatiotemporal assessment of the Chilean mussel industry.

Postdoctoral supervision

1- **Dr. Nelson Valdivia** (2010-2012) FONDECYT 3100014 Environmental heterogeneity may induce functional compensation and increase stability in rocky shore ecosystems.
Currently: Assistant Professor, Universidad Austral de Chile

2- **Dr. Moises Aguilera** (2010-2013) CEAZA Marine Ecology fellow.
Currently: Assistant Professor, Universidad Católica del Norte (2017-2020). Assitant Professor, Universidad Adolfo Ibañez

3- **Dr. Shelley MacDonell** (2010-2013) FONDECYT 3110053 Modeling glacier meltwater production in the dry Andes.
Currently: Senior Researcher, CEAZA. Professor, Otago University, New Zealand

4- **Dr. Guillermo Aravena** (2011-2012) FONDECYT 3120163 Influence of climate variability on recruitment of intertidal communities in the central coast of Chile: an upwelling zone in the Humboldt current system.
Currently: Scientific Advisor, CONICYT, Chile

5- **Dr. Tatiana Manzur** (2014-2017) FONDECYT 3150240 Environmental regulation of non-lethal predator effects: consequences on prey populations and propagation to rocky shore community dynamics.
Currently: Independent researcher

6- **Dr. Mauricio Oróstica** (2022) UAI Postdoctoral Fellow. Biogeographic drivers of distribution, abundance and populations dynamics of intertidal grazers species.
Currently: Adjunct researcher, Centro de Investigacion en Estudios Avanzados del Maule. Universidad Católica del Maule, Talca, Chile.

AWARDS

Graduate Student Award, Coastal Environmental Quality Initiative, 2002-2003

Graduate Student Travel Award. University of California, Santa Barbara, 2004

Best Basic Sciences Researcher, Universidad Adolfo Ibáñez, 2022

PROFESSIONAL MEMBERSHIPS

Ecological Society of America (1999- 2015, 2022-present)

Sociedad de Ecología de Chile (2001-present)

American Society of Limnology and Oceanography (2005-2008)

Society of American Archaeology (2007-2011)

PROFESSIONAL SERVICE

Board of Directors, Centro i~mar (2018-present)

Biology 1 Study group, Fondo Nacional de Ciencia y Tecnología (Chile), (2018-2020)

President, Sociedad de Ecología de Chile (2015-2017)

Vicepresident, Sociedad de Ecología de Chile (2013-2015)

National Antarctic Research Study group, Fondo Nacional de Ciencia y Tecnología(2013)

Earth Sciences Study group, Fondo Nacional de Ciencia y Tecnología (Chile), (2011-2013)

Board of Directors, Sociedad de Ecología de Chile (2006-2019, 2022-current)

Alternate Research Member, Channel Island National Marine Sanctuary Advisory Council (2007-2008)

Webmaster, Sociedad de Ecología de Chile (2001-2010)

GRANTS

1. Multiple interacting mechanisms determine the geographic range edge of intertidal species. Proyecto Regular Fondo Nacional de Ciencia y Tecnología #1090488 – Chile (2009-2011). Principal Investigator (US$250.000)

2. Implementación de una Red de Monitoreo Meteorológico como herramienta de apoyo a la toma de decisiones en el ámbito agrícola y Acuícola de la región de Coquimbo. Fondo de Innovacion para la Competitividad - Chile (2011-2013). Project Director (US$1.200.000)

3. Multiscale biophysical determinants of larval arrival to benthic habitats and effects on intertidal biodiversity. Proyecto Regular Fondo Nacional de Ciencia y Tecnología #1120988 – Chile (2012-2015). Principal Investigator (US$350.000)

4. Latitudinal shift in the coupling of inner-shelf and mesoscale upwelling variability as an explanation for the ecological break observed along central-northern Chile (30-31°S). Proyecto Regular Fondo Nacional de Ciencia y Tecnología #1120896 – Chile (2012-2014) Co-Investigator, PI Fabian Tapia (UdeC) (US$350.000)

5. Millennium Nucleus Center for the Study of Multiple Drivers on Marine Socio-Ecological Systems (MUSELS). MINECON Project NC120086 (2013-2016). Deputy Director, Director Cristian Vargas (UdeC) (US$1.200.000)

6. The links among multiple dimensions of ecological stability through species dynamics, disturbances, and connectivity in rocky intertidal communities. Proyecto Regular Fondo Nacional de Ciencia y Tecnología #1141037 – Chile (2014-2017). Co-Investigator, PI Nelson Valdivia (UACh) (US$429.000)

7. Determinants of marine biogeographic breaks: The underestimated relevance of pH variation. Proyecto Regular Fondo Nacional de Ciencia y Tecnología #1140092 – Chile (2014-2017). Co-Investigator, PI Marco Lardies (UAI) (US$417.000)

8. Plataforma de Prospección Solar Región de Coquimbo: Fase I. Fondo de Innovacion para la Competitividad - Chile (2014-2015). Project Director (US$270.000)

9. Desarrollo de Capacidades y Bases Tecnológicas para la Adaptación al Cambio Climático en la Acuicultura de Bivalvos. II Concurso de Centros Regionales para el Desarrollo Territorial mediante proyectos I+D 2016 – Chile (2017-2019). Project Director (US$150.000)

10. Millennium Nucleus Center for the Study of Multiple Drivers on Marine Socio-Ecological Systems (MUSELS). MINECON Project NC120086 (2017-2019). Deputy Director, Director Cristian Vargas (UdeC) (US$1.000.000)

11. Multiple stressors and the functional diversity of coastal ecosystems. Fondo Nacional de Ciencia y Tecnología #1181300 – Chile (2018-2021). Principal Investigator (US$415.000)

12. Stressed and unstable? Functional impacts of the extinction of dominant, habitat-forming species on coastal marine communities. Proyecto Regular Fondo Nacional de Ciencia y Tecnología FONDECYT Regular #1190529. Co-Investigator, PI Nelson Valdivia (UACh)
13. Speciation genomics in marine organisms: Scurria Limpets as a novel model system to study the evolution of genomic divergence. Proyecto Regular Fondo Nacional de Ciencia y Tecnología #1190710 – Chile. Co-Investigator, PI Pablo Sáenz-Agudelo (UACh)
14. Understanding Past coastal upWelling systems and Environmental Local and Lasting impacts (UPWELL). ANID Project NCN19_153 (2019-2022). PI Director Eugenia Gayó (CEAZA) (CLP$612.000.000)
15. Coastal Social-Ecological Millenium Institute (SECOS). ANID Project ICN2019_015 Principal Investigator, Director Stefan Gelcich (PUC) (CLP$10.000.000.000)
16. Oceanography and Biological Rationale for Planning and Design Water Desalination Plants in Central-Northern Chile. ANID Project FSEQ210017 PI, Director Victor Aguilera (CEAZA) (CLP$234.000.000)
17. The Origin and Dynamics of a Biogeographic Transition: A Metacommunity Perspective. Proyecto Regular Fondo Nacional de Ciencia y Tecnología – Chile #1221699. Principal Investigator (CLP$ 264.000.000)
18. Social-ecological vulnerability and adaptive capacity of artisanal fishers in central Chile. Proyecto Regular Fondo Nacional de Ciencia y Tecnología – Chile #1221534. Co-Investigator, PI Rodrigo Estévez (UST)
19. How deterministic and stochastic processes drive ecological stability across spatial scales? Proyecto Regular Fondo Nacional de Ciencia y Tecnología – Chile #1230286. Co-Investigator, PI Nelson Valdivia (UACh)
20. Bio-Optical gradients along the river-estuary-coastal ocean continuum of northern Patagonia. Proyecto Regular Fondo Nacional de Ciencia y Tecnología – Chile #1230420 Co-Investigator, PI Carlos Lara (UCSB)
21. Unveiling the resilience of marine communities to ongoing climate change in the Humboldt upwelling ecosystem: a study through two decades of field experiments and modeling. Proyecto Regular Fondo Nacional de Ciencia y Tecnología – Chile #1240851 Co-Investigator, PI Sergio Navarrete (PUC)

PEER-REVIEW

Journals: Aquaculture; Ciencias Marinas; Estuarine; Coastal and Shelf Science; Conservation Biology; Ecography; Ecology and Society; Ecology; Ecological Research; Ecosystems; Frontiers in Ecology and Evolution; Frontiers in Marine Science; Global Ecology and Biogeography; Journal of Animal Ecology; Journal of Biogeography; Journal of Experimental Marine Biology and Ecology; Journal of the Marine Biological Association UK; Marine and Freshwater Research; Marine Biology; Marine Ecology Progress Series; Nature Communications; Nature Scientific Reports; Oecologia; Oikos; Phycologia; Population Ecology; Public Library of Science; Progress in Oceanography; Revista Chilena de Historia Natural; Revista de Biología Marina y Oceanografia; Trends in Ecology and Evolution; Proceedings of the Royal Society B;

Books: Wiley

National Research Commissions: The National Science Foundation (NSF - USA), Fondo Nacional de Ciencia y Tecnología (FONDECYT - Chile), Instituto Antartico Chileno (INACH - Chile), Sociedad Chilena de Ciencias del Mar (SCCM – Chile)**,** Ministry of Science and Technology (MOST, Israel), Agencia Nacional de Investigación e Innovación (ANII, Uruguay).

Associate Editor: Ciencias Marinas (Mexico, 2010 – 2014, 2019), Editor-in-chief Walter Daessle, Revista Chilena de Historia Natural (Chile, 2011 - present), Editor-in-chief Patricio Ojeda. Frontiers in Ecology and Evolution (Switzerland, 2018 - present)

Academic Commissions: Comisión Nacional de Acreditación – Par evaluador Postgrado (CNA – Chile 2018-present). Sociedad Chilena de Ciencias del Mar – Par Evaluador Premio “Honor en Scientia Marina” (2020, 2024)

PUBLICATIONS

1. C. Betancourtt, A. Catalán, D. Morales, D. Lopez, V. Escares-Aguilera, L. Salas-Yanquin, J. Büchner-Miranda, O. Chaparro, J. Nimptsch, **B.R. Broitman** and N. Valdivia. (2024) Competitive asymmetries mediate ecosystem multifunctionality in a synthetic-assemblage experiment: implications for marine rocky intertidal ecosystems. **Marine Environmental Research** 196:106422 106422doi.org/10.1016/j.marenvres.2024.106422
2. D. Gonzalez-Aragon, M.M. Rivadeneira, C. Lara, F.I. Torres, J.A. Vasquéz and **B.R. Broitman**. (2024) A species distribution model of the giant kelp *Macrocystis pyrifera*: worldwide changes and a focus on the Southeast Pacific. **Ecology and Evolution** 14:e10901 doi:10.1002/ece3.10901
3. V. Alcalde, C. Flores, J. Guardia, L. Olguín and **B.R. Broitman.** (2023) Use of kelp in prehistory on the southern coast of the Atacama Desert: Marine invertebrates as a proxy for the use of kelp in Middle and Late Holocene archaeological sites. **Frontiers in Earth Science** 11:1148299 doi:10.3389/feart.2023.1148299
4. M.A. Molina-Montenegro, I.S. Acuña-Rodríguez, M. Baldelomar, C. Torres-Díaz, **B.R. Broitman** and D.P. Vázquez. (2023) Electromagnetic fields disrupt the pollination service by honeybees. **Science Advances** 9:eadh1455 doi:10.1126/sciadv.adh1455
5. L. Peluso, **B.R. Broitman**, M.A. Lardies, R. Nespolo and P. Sáenz-Agudelo. (2023) Comparative population genetics of congeneric limpets across a biogeographic transition reveals common patterns of genetic structure and demographic history. **Molecular Ecology** 32(14):3812-3825 doi:10.1111/mec.16978
6. R. Muñoz, C. Lara, J. Arteaga, S.I. Vasquez, G.S. Saldías, R.P. Flores, J. He, **B.R. Broitman** and B. Cazelles. (2023) Long-term synchrony in satellite-derived ocean parameters in Northern Patagonia, Chile. **Remote Sensing** 15(8):2182 doi:10.3390/rs15082182
7. A.M. Catalán, D. López, E. Fica-Rojas, **B.R. Broitman**, N. Valdivia and R.A. Scrosati. (2023) Foundation species canopies affect beta diversity differently depending on species mobility. **Ecology** e3999 doi:10.1002/ecy.3999
8. E. Fica-Rojas, A.M. Catalán, **B.R. Broitman**, A. Pérez-Matus and N. Valdivia. (2022) Independent effects of species removal and asynchrony on invariability of an intertidal rocky

shore community. **Frontiers in Ecology and Evolution** 10:866950 doi:10.3389/fevo.2022.866950

9. P. Saenz-Agudelo, L. Peluso, R. Nespolo, **B.R. Broitman**, P.A. Haye and M.A. Lardies. (2022) Population genomic analyses reveal hybridization and marked differences in genetic structure and demographic history of *Scurria* limpet sister species with parapatric distributions across the southeastern Pacific. **Ecology and Evoloution** 12(5):e8888 doi:10.1002/ece3.8888

10. S.A. Navarrete, M. Barahona, N. Weidberg and **B.R. Broitman**. (2022) Climate-change in the coastal ocean: shifts in pelagic productivity and regionally-diverging dynamics of coastal ecosystems. **Proceedings of the Royal Society B** 289:20212772 doi:10.1098/rspb.2021.2772

11. C.A. Vargas, L.A, Cuevas, **B.R. Broitman**, V.A. San Martin, N.A. Lagos, J.D. Gaitán-Espítia and S. Dupont. (2022) Upper environmental pCO_2 determines sensitivity to ocean acidification in marine invertebrates. **Nature Climate Change** 12:200-207 doi:10.1038/s41558-021-01269-2

12. **B.R. Broitman**, C. Lara., R.P. Flores, G.S. Saldías, A. Piñónes, A. Pinochet, A. Galán and S.A Navarrete. (2022) Environmental variability and larval supply to wild and cultured shellfish populations in the Southeast Pacific coast. **Aquaculture** 548(2):737639 doi:10.1016/j.aquaculture.2021.737639

13. M.C. Mangano, M. Berlino, L. Corbari, G. Milisenda1, M. Lucchese, S. Terzo, M. Bosch-Belmar, M.S. Azaza, J.M.F. Babarro, R. Bakiu, **B.R. Broitman**, A.H. Buschmann, R. Christofoletti, Y. Dong, B. Glamuzina, O. Luthman, P. Makridis, A.J.A. Nogueira, M.G. Palomo, R. Dineshram, P. Sanchez-Jerez, H. Sevgili, M. Troell, K.J. AbouelFadl, M.N. Azra, P. Britz, C. Brugere, E. Carrington, I. Celić, F. Choi, Q. Chuanxin, M.A. Dionísio, T. Dobroslavić, P. Galli, D. Giannetto, J.H. Grabowski, B. Helmuth, M.J.H. Lebata-Ramos, P.T. Lim, Y. Liu, S.M. Llorens, S. Mirto, M. Pećarević, C. Pita, N. Ragg, E. Ravagnan, D. Saidi, M. Schultz, Shaltout, T.H. Tan, R.V. Thiyagarajan and G. Sarà. (2022) The aquaculture supply chain in a time of pandemic: vulnerability, resilience, solutions and priorities at the global scale. **Environmental Science and Policy** 127:98-110 doi:10.1016/j.envsci.2021.10.014

14. E.D. Curra-Sánchez, C. Lara, M. Cornejo-D'Ottone, J. Nimptsch, M. Aguayo, **B.R. Broitman**, G.S. Saldías and C.A. Vargas. (2022) Contrasting land-uses in two small river basins impact the Coloured Dissolved Organic Matter concentration and carbonate system along a river-

coastal ocean continuum. **Science of the Total Environment** 806(1):150435 doi:10.1016/j.scitotenv.2021.150435

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95. **B.R. Broitman**, S.A. Navarrete, F. Smith and S.D. Gaines (2001) Geographic variation of Southeastern Pacific intertidal communities. ***Marine Ecology Progress Series***. 224:21-34

96. P.A. Camus, Y.A. Andrade and **B.R. Broitman** (1999) Effects of substratum topography on species diversity and abundance in Chilean rocky intertidal communities. ***Revista Chilena de Historia Natural***. 72:377-388

- Conference Proceedings

1. C.A. Blanchette, D.V. Richards, J.M. Engle, **B.R. Broitman** and S.D. Gaines. (2005) Regime shifts, community change and population booms of keystone predators at the Channel Islands. ***Proceedings of the 6th California Islands Symposium***. pp. 435-441 **citations:14**

2. C.A. Blanchette, P.A. Raimondi and **B.R. Broitman**. (2008) Spatial patterns of intertidal community structure across the California Channel Islands and links to ocean temperature. ***Proceedings of the 7th California Islands Symposium*** *in press*

- Book chapters

1. **B.R. Broitman**, E. Sproles, C. Weideman, S. Salas, C. Geldes, A. Zambra, L. González-Silvestre and L. Bugueño. (2019) Chapter 6: Building Consensus through Assessment Evidence from San Pedro de Atacama, Chile. In: **Mainstreaming Natural Capital and Ecosystem**

Services into Development Policy, P. Kumar (Ed.), Routledge, Taylor and Francis, New York, NY, 10017.

2. Aguilera M.A. et al. (2018) Chapter 46 - Chile: Environmental Status and Future perspectives. In: **World Seas: En Environmental Evaluation** . https://doi.org/10.1016/B978-0-12-805068-2.00046-2

3. Yañez E. et al. (2017) Chapter 10 - Impacts of Climate Change on Marine Fisheries and Aquaculture in Chile. In: **Impacts of climate change on marine fisheries, aquaculture and adaptations.** Bruce Phillips and Monica Pérez-Ramírez (eds.) Wiley, Australia

4. Flores C.F., **B.R. Broitman**, and P. Rivas (2008) Changes in the subsistence strategy of prehistoric intertidal gathering: The pre-ceramic and ceramic coastal hunter-gatherers of Reloncaví Sound, Chile. In: **Comparative Perspectives on the Archaeology of Coastal South America**, Robyn Cutright, Enrique López-Hurtado, and Alexander Martin (eds.) University of Pittsburgh Latin American Publications. **citations: 2**

Outreach

1. A.M. Catalán, D. López, E. Fica-Rojas, **B.R. Broitman**, N. Valdivia and R.A. Scrosati. (2023) Effects of canopies of foundation species on understory beta diversity. **Bulletin of the Ecological Society of America** 104(2):e02060 doi:10.1002/bes2.2060

2. M. Lurgi, N. Galiana, **B.R Broitman**, S. Kéfi, E.A Wieters and S.A. Navarrete. (2021) Geographical variation of multiplex ecological networks in marine intertidal communities. **Bulletin of the Ecological Society of America** 102(1):e01789 doi:10.1002/bes2.1789

3. M.A. Aguilera, N. Valdivia, **B.R. Broitman**, S. Jenkins and S.A. Navarrete. (2020) Novel co-occurrences of functionally redundant consumer induced by range expansion alters community structure. **Bulletin of the Ecological Society of America** 101(4):e01777 doi:10.1002/bes2.1777

4. **B.R. Broitman**, B.S. Halpern, S. Gelcich, M.A. Lardies, C.A. Vargas, F. Vásquez-Lavín, S. Widdicombe, S.N.R Birchenough and Nelson A. Lagos. (2017) Expansión sustentable de la acuicultura y las interacciones dinámicas entre sus límites. **Salmon Expert** 52(7) August 2017

5. G. Cortes-Hinojosa, **B.R. Broitman**, M.R. Rivadeneira and G. Luna-Jorquera (2017). Efecto de las variables ambientales y abundancia poblacional sobre el desarrollo de polluelos de Pinguino de Humboldt *Sphenicus humboldti*. **Revista Chilena de Ornitología** 23 (2):55-62

POSTDOCTORAL TRAINING

2007

Ecoinformatics Training for Ecologists. University of New Mexico. Alburquerque, NM, USA.

2006

Multivariate Analysis of Complex Experimental Designs. National Center for Ecological Analysis and Synthesis. University of California, Santa Barbara. Santa Barbara, CA, USA.

INVITED PRESENTATIONS

2023

Invited Speaker, **40th Anniversary conference**, Estación Costera de Investigaciones Marinas (ECIM), **Pontificia Universidad Católica de Chile**, Las Cruces, Chile.

Keynote Speaker, **International Temperate Reefs Symposium,** University of Tasmania, Hobart, Tasmania, Australia.

2022

Invited Speaker, **Open Science Conference on Eastern Boundary Upwelling Systems (EBUS): Past, Present and Future & Second International Conference on the Humboldt Current System**. Lima, Perú.

2019

Coastal Ecology Symposium, **Universidad Autónoma de Baja California Norte**, Ensenada BCN, México

Departmental Seminar, Centro i~mar, **Universidad de Los Lagos**, Puerto Montt, Chile.

2018

Invited Speaker, **MISTI symposium.** Estación Costera de Investigaciones Marinas (ECIM), **Pontificia Universidad Católica de Chile**, Las Cruces, Chile.

2017

Invited speaker, **Congreso del Futuro**. Intendencia Regional, La Serena, Chile

Invited speaker, **VIII Jornadas de Investigación en Salmonicultura**. Puerto Varas, Chile.

Keynote speaker, **Agenda de Iniciativas Valor Minero Coquimbo**, La Serena, Chile.

2016

Departamental Seminar. Facultad de Ciencias Ambientales, **Universidad de Concepción**, Chile

Departamental Seminar. Facultad de Ciencias Naturales y Oceanográficas, **Universidad de Concepción**, Chile

Invited Speaker, World Health Day. Facultad de Ciencias Veterinarias y Pecuarias, **Universidad de Chile**, Santiago, Chile

Departamental Seminar. Facultad de Ciencias, **Universidad Católica de la Santísima Concepción,** Concepción, Chile

Invited speaker. **1ª Reunião da ABECO e 5º Simpósio de Ecologia Teórica**, Gramado, Rio Grande do Sul, Brazil.

Invited Speaker. Facultad de Humanidades. **Universidad de La Serena**, La Serena, Chile

2015

Keynote speaker. **XIV Congreso Geológico Chileno**, La Serena, Chile

2012

Departmental Seminar. Centro de Biologia Marinha, Sao Sebastian, **Universidade do Sao Pablo**, Brazil

2008

Departmental Seminar. **Universidad de La Serena**, La Serena, Chile

Taller Procesos Estocásticos **Universidad de La Serena**, La Serena, Chile

2007

Departmental Seminar. Bodega Bay Marine Laboratory, **University of California, Davis**, CA, USA

Departmental Seminar. **Universidad Austral de Chile**, Valdivia, Chile

2006

Departmental Seminar. **University of Connecticut at Avery Point**, CT, USA

Departmental Seminar. **University of Rhode Island**, RI, USA

Departmental Seminar. **Santa Clara University**, CA, USA

2004

Departmental Seminar. **Universidad Austral de Chile**, Valdivia, Chile

SCIENTIFIC CONFERENCES (first author only)

2023 XXIX Sociedad de Ecología de Chile, Olmué, Chile. Origen y dinámicas de la transición biogeográfica marina de Chile centro-norte: una perspectiva metacomunitaria. Oral presentation.
2022 Open Science Conference on Eastern Boundary Upwelling Systems (EBUS): Past, Present and Future & Second International Conference on the Humboldt Current System. Lima, Perú. δ18O sea surface temperature from coastal shell middens of the Atacama desert across the Holocene. Oral presentation.
2022 XVIII Sociedad de Ecología de Chile, Pucón, Chile. Conchales arqueológicos del desierto de Atacama a través del Holoceno: δ18O temperatura superficial del mar y cambios del ensamble faunal. Poster presentation.
2019 XVIII Congreso Latinoamerica de Ciencias del Mar, Mar del Plata, Argentina. Caracterizando y traduciendo los patrones de variabilidad de múltiples estresores en zonas de acuicultura de moluscos. Oral presentation.
2019 100th Annual Meeting of the Western Society of Naturalists. Ensenada BCN, México. Back to the future: Coastal paleoceanography and paleoecology of the Atacama desert (Chile, 25°S) during the Holocene. Oral presentation
2018 72nd Annual Meeting of the Pacific Coast Shellfish Growers Association. Semiahmoo, WA, USA. Shellfish aquaculture in Chile: Learning from multiple stressors how to build up resilience across the socio-ecological system. Keynote speaker.
2017 XXIV Reunion Anual de la Sociedad de Ecología de Chile, Puerto Varas, Chile. Plasticidad fenotípica al límite: contrastando respuestas poblacionales en la zona de sobreposición de rango geográfico en dos patellas del genero *Scurria*. Oral presentation
2016 VI Reunion binacional de Ecología, Puerto Iguazú, Misiones. Argentina. Patterns of oceanographic control of larval supply to invertebrate populations of wild and harvested species. Oral presentation
2015 XVI Congreso Latinoamerica de Ciencias del Mar, Santa Marta, Colombia. Using persistent oceanographic variability to look into temperate rocky shore community structure in the future. Oral presentation.
2014 All-Scientists Meeting of the Americas, Valdivia, Chile. Implementando, financiando y manteniendo un sistema distribuido de informacion ambiental en la costa de Chile central. Oral presentation.
2013 V Reunión Binacional de Ecología , Puerto Varas, Chile Variación espacio-temporal en el reclutamiento de mitílidos en el Mar Interior de Chiloé: Procesos regionales o efectos locales? Oral presentation
2012 IL Anual Meeting of the Association for Tropical Biology and Conservation, Bonito, MS Brasil, Ecological Science in Chile: current status adn interfaces with society. Invited Symposium
2011 XIX Reunión Anual de la Sociedad de Ecología de Chile, Puerto Varas, Chile. Some observations of the ecological and evolutionary dynamics in the encounter of two biotas in a biogeographic transition zone. Invited Symposium.

2011 IX International Temperate Reef Symposium, Plymouth, UK. Consumer-resource interactions at the edge: ecological processes and biogeographic range limits in four intertidal species. Oral presentation.
2009 XVIII Reunión Anual de la Sociedad de Ecología de Chile, Valdivia, Chile. Multilples mecanismos determinan el borde del rango en 4 especies intermareales. Oral presentation and Symposium organizer (Entre Tongoy y Los Molles (32-30°S): una zona de transición biogeográfica difusa en la costa de Chile central.).
2008 Eastern Boundary Upwelling Symposium, Las Palmas de Gran Canaria, Spain. Dynamics of larval arrival to intertidal habitats in California, Chile and South Africa. Oral presentation.
2008 Society of American Archaeology Annual Meeting, Vancouver, Canada. Spatial distribution of shellfish and shellfish harvesting on Santa Cruz Island: an Ecological and archaeological perspective. Oral presentation.
2007 III Reunión Binacional de Ecología, La Serena,Chile. Generación y mantención de patrones ecológicos en sistemas costeros. Oral presentation
2007 Society for Conservation Biology Annual Meeting, Port Elizabeth, South Africa. Exotic plants break competition-colonization tradeoffs in California flora. Poster presentation
2006 7th International Temperate Reef symposium, Santa Barbara, CA, USA. Recruitment dynamics of intertidal invertebrates in Chile and the US West coast. Oral presentation
2006 Ocean Sciences Meeting AGU-TAO-ASLO, Honolulu, Hawaii', USA. Recruitment of intertidal invertebrates along the US west coast and its relationship with AVHRR SST dynamics. Poster presentation.
2005 XIV Reunión Anual de la Sociedad de Ecología de Chile, Pucón, Chile. Variabilidad espaciotemporal en el reclutamiento de invertebrados marinos en la costa oeste de EEUU. Oral presentation.
2005 XXV Jornadas de las Ciencias del Mar, Coquimbo, Chile. Estructura espacial de la biomasa algal bentónica y pelágica en el sistema de surgencia costera del Oeste de Norteamérica. Oral presentation
2004 American Geophysical Union, Portland, Ocean Sciences Meeting, OR, USA. A coupled spatial pattern of benthic and pelagic ecosystem structure in coastal upwelling regions. Oral presentation.
2004 II Reunión Binacional de Ecología, Bariloche, Argentina. Patrones de reclutamiento y el forzamiento oceanográfico: comparando Chile central y la costa Oeste de EEUU. Invited Oral presentation
2004 Ecological Society of America, Portland, OR, USA Regime shifts, community change and population booms of keystones predators at the California Channel Islands. Oral presentation.
2004 XXIV Jornadas de las Ciencias del Mar, Coquimbo, Chile. Estructura espacial de la diversidad en el ensamble intermareal de Chile central. Invited Oral presentation.
2003 Eastern Pacific Ocean Conference, Catalina, CA, USA. A coupled spatial model of benthic and pelagic structure in coastal ecosystems. Oral presentation.
2003 Eastern Pacific Ocean Conference, Catalina, CA. Recruitment variability at Santa Cruz Island, California USA. Poster presentation.
2003 6th International Temperate Reef Symposium, Christchurch, New Zealand. Recruitment dynamics of intertidal invertebrates in the temperate East Pacific. Oral presentation.
2003 Western Society of Naturalists, Long Beach, CA, USA. A coupled spatial pattern of benthic and pelagic ecosystem structure in coastal upwelling regions. Oral presentation.

2003 Benthic Ecology Meeting, Mystic, CT, USA. Benthic-pelagic coupling and the structure of coastal metapopulations. Oral presentation.
2002 XII Reunión Anual de la Sociedad de Ecología de Chile, Puyehue, Chile. Escalas de regulación ambiental en procesos ecológicos. Oral presentation.
2002 Eastern Pacific Ocean Conference, Timberline Lodge, OR, USA. Recruitment dynamics in the Eastern Pacific: an interhemispherical comparison. Oral presentation.
2000 Western Society of Naturalists, Portland, OR, USA. Patterns of intertidal community structure in central Chile. Oral presentation.
2000 I Reunión Binacional de Ecología, Bariloche, Argentina. Estructura geográfica de comunidades intermareales del Pacífico Sureste. Oral presentation.
2000 5th International Temperate Reef Symposium, Cape Town, South Africa. Geographic variation of southeastern Pacific intertidal communities. Oral presentation.
1997 XVII Jornadas de las Ciencias del Mar, Santiago, Chile. Caracterizacion de la composicion taxonomica y estructura trofica comunidades intermareales rocosas en el Norte de Chile en funcion de la presencia/ausencia de surgencia. Poster presentation.
1996 XVII Jornadas de las Ciencias del Mar, Concepción, Chile. Oral presentation.
1995 XXXVIII Reunión anual de la Sociedad de Biología de Chile, Viña del Mar, Chile. Parámetros demográficos en poblaciones de *Emerita analoga*. Poster presentation.

OUTREACH

2008

Tertulias Científicas IEB – CEAZA. Bodegon Cultural Los Vilos, Los Vilos, Chile. ¿A donde van los hijos del Picoroco?

2009

Tertulias Científicas CEAZA. Café Terracota, La Serena, Chile. Lapas acaloradas en la Region de Coquimbo

Dia del medio Ambiente. Municipalidad de Coquimbo. UCN, Coquimbo, Chile. Entre Tongoy y Los Vilos: una zona de transición.

2010

Mil Científicos, Mil Aulas (EXPLORA). Colegio Leonardo Da Vinci, Vicuña, Chile. Entre Tongoy y Los Molles: Una región de transición ecológica.

2011

5ta Congreso Científico-Tecnológico, Colegio Manatiales del Elqui, La Serena, Chile. El Clima de la Zona y su biogeografía marina.

2012

Mil Científicos, Mil Aulas (EXPLORA). Colegio Eusebio Lillo, Coquimbo, Chile. Entre Tongoy y Los Molles Una región de cambios ecológico-ambientales.

2013

Mil Científicos, Mil Aulas (EXPLORA). Colegio Lucia Godoy Alcayaga, Vicuña, Chile. Entre Tongoy y Los Molles: donde el Chiton conoció al Cochayuyo.

2014

Café Científico CEAZA. Café Centenario, La Serena, Chile. Que pasa si viene un niño a nuestras costas?

Los Dueños de la Tarde. Radio Montecarlo (102.7 FM), La Serena, Chile. Los Choros y los Huiros en la región de Coquimbo.

2015

Los Dueños de la Tarde. Radio Montecarlo (102.7 FM), La Serena, Chile. Los 13 años del Centro CEAZA en la región de Coquimbo.

2016

Principios de oceanografía físico-química. Liceo Marítimo Carmen Rodríguez Henríquez. Tongoy, Chile

2017

Dia del Medio Ambiente. Liceo Ignacio Carrera Pinto, La Serena, Chile. La acidificación de los oceanos.

Principios de oceanografía físico-química. Liceo Marítimo Carmen Rodríguez Henríquez. Tongoy, Chile

2018

Principios de oceanografía físico-química. Liceo Marítimo Carmen Rodríguez Henríquez. Tongoy, Chile

Tribuna Social. Radio Mistral (95.1 FM), La Serena, Chile. Aporte del vinculo de CEAZA con el Liceo de Tongoy y la comunidad.

2021

Principios de oceanografía físico-química. Liceo Marítimo Carmen Rodríguez Henríquez. Tongoy, Chile

2022

Efectos del cambio climático en la costa de Chile: ¿Entre Tongoy y Los Vilos? Museo de Historial Natural de Valparaiso, Valparaiso, Chile

Principios de oceanografía físico-química. Liceo Marítimo Carmen Rodríguez Henríquez. Tongoy, Chile

2023

Principios de oceanografía físico-química. Liceo Marítimo Carmen Rodríguez Henríquez. Tongoy, Chile