



SILVAN GOLDENBERG — ECOLOGIST

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"As a scientist, I explore the intricate connections between society and the environment to accelerate the sustainable management of natural resources. A decade of international research has equipped me with expertise in human stressors and nature-based solutions, from tropical to temperate ecosystems."

PROFESSIONAL EXPERTISE

SUBJECTS	Community Ecology Biogeochemistry Food Webs Climate Change Acidification Biodiversity & Conservation CO ₂ Removal Eutrophication Ecosystem Services
TOOLS	Project Coordination Supervision & Teaching Public Speaking Scientific Writing Data Analysis & Visualization using R Laboratory & Field Work
ATTRIBUTES	Team Player Problem Solver Critical & Holistic Thinker Persistent Goal-Oriented
LANGUAGES	English – proficient German – native French – good Spanish – basic

EDUCATION

May – Jun 2025	Professional Training in Geospatial Analysis Freiburg, Germany ▪ Geoinformatics, data management and remote sensing with ArcGIS
Jul 2014 – Feb 2018	Doctor of Philosophy in Biology University of Adelaide, Australia Topic: Climate change impacts on coastal ecosystems, including warming and acidification ▪ Assessment of food webs and functional diversity, using laboratory and field experiments ▪ Data analysis using R – univariate, multivariate, and meta-analytical ▪ Co-management of projects with up to 15 researchers, including student supervision ▪ Acquired "Beacon of Enlightenment" Scholarship worth ~139,000 € ▪ Awarded the "Dean's Commendation for Doctoral Thesis Excellence" ▪ Reference: Prof. Ivan Nagelkerken (ivan.nagelkerken@adelaide.edu.au)
Oct 2010 – Aug 2012	Master of Science in Marine Biodiversity and Conservation Erasmus Mundus, Europe ▪ University of the Algarve, Portugal – thesis on coastal ecology (8 months) ▪ University of Oviedo, Spain – coursework (4 months) ▪ University of Bremen, Germany – coursework (11 months) ▪ Acquired "Studienstiftung des deutschen Volkes" scholarship worth ~40,000 € ▪ Completed with 'Greatest Distinction' ranking in top 5% of cohort ▪ Reference: Prof. Karim Erzini (kerzini@ualg.pt)
Oct 2007 – Sep 2010	Bachelor of Science in Biology University of Cologne, Germany ▪ Research Station Rees, Germany – thesis on behavior in freshwater animals (5 months) ▪ James Cook University, Australia – study abroad in tropical ecology (6 months) ▪ Graduated with 'Excellent' ranking 2nd in cohort ▪ Reference: Prof. Jost Borchertding (jost.borchertding@uni-koeln.de)

WORK EXPERIENCE (ACADEMIC)

- Aug 2025 – **Researcher | Norwegian University of Science and Technology Trondheim, Norway**
Topic: Industrial ecology - global supply chain sustainability and biodiversity conservation
▪ Reference: Prof. Francesca Verones (francesca.verones@ntnu.no)
- Oct 2018 – Jan 2024 **Researcher | GEOMAR Helmholtz Centre for Ocean Research Kiel, Germany**
Topic: Ocean-based solutions for climate change mitigation and food security, via biomass production (artificial upwelling) and seawater chemistry (alkalinity enhancement)
▪ Field-based mesocosm experiments in coastal Norway, Peru, and Spain in teams of up to 70 people
▪ Study of abiotic (nutrients, light, and CO₂), ecological (primary production, grazing, and predation), and biogeochemical (element cycling and carbon sequestration) processes
▪ Data analysis using R – univariate and multivariate
▪ Project coordination (up to 15 people) and student supervision (11 PhD, Master, and Bachelor theses)
▪ Collaboration within interdisciplinary consortia: [OceanNets](#), [CDRmare](#), [OceanArtUp](#), and [CUSCO](#)
▪ Reference: Prof. Ulf Riebesell (ulf.riebesell@geomar.de)
- Apr – May 2019 **Research Diver | Helgoland and Kristineberg Research Stations, Germany and Sweden**
▪ Completion of “European Scientific Diver” training (full-time)
- Aug 2018 **Teacher | Tjärnö Research Station, Sweden**
▪ Postgraduate summer school in coastal ecology (full-time)
- Aug – Sep 2017 **Teaching Assistant | University of Adelaide, Australia**
▪ Undergraduate course on ecological data analysis (6 hours/week)
- Jan – May 2014 **Intern | University of Konstanz, Germany**
▪ Freshwater evolutionary biology, using various genetic techniques (full-time)
- May – Jul 2013 **Research Assistant | Cape Eleuthera Institute, Bahamas**
▪ Field experiment on invasive species in coral reefs (full-time)
- Dec 2012 – Apr 2013 **Research Assistant | University of Perpignan, French Polynesia**
▪ Field experiment on eutrophication and overfishing in coral reefs (full-time)
- Jan – Feb 2010 **Intern | James Cook University, Australia**
▪ Field surveys of reef invertebrates and fishes (full-time)
- Nov 2008 – Jul 2009 **Teaching Assistant | University of Cologne, Germany**
▪ Undergraduate courses in plant and cell biology (~7 h/week)

PERSONAL INTERESTS

WORK & TRAVEL New Zealand, Australia, and Southeast Asia (10 months in 2006-2007)
Pacific Islands and Central America (11 months in 2012-2013)
South America and Canada (9 months in 2024)

SPORTS & OUTDOORS Cycling | Swimming | Hiking | Kayaking | Camping | Fishing

PUBLICATIONS (PEER REVIEWED)

Thielecke A, Fernández-Méndez M, Arístegui J, Baumann M, Behncke J, Berger SA, Dausmann V, Georgieva S, **Goldenberg SU** et al. (2025) *Disentangling upwelling: how light and nutrient supply shape primary producers and stoichiometry in the Humboldt upwelling system*. Deep Sea Research Part II

Paul AJ, Haunost M, **Goldenberg SU**, Hartmann J, Sánchez N, Schneider J, Suitner N, Riebesell U (2025) *Ocean alkalinity enhancement in an open ocean ecosystem: Biogeochemical responses and carbon storage durability*. Biogeosciences

Suessle P, Taucher J, **Goldenberg SU**, Baumann M, Spilling K, Noche A, Vanharanta M, Riebesell U (2025) *Particle fluxes by subtropical pelagic communities under ocean alkalinity enhancement*. Biogeosciences

Ferreira CM, Connell SD, **Goldenberg SU**, Leung JY, Nagelkerken I (2024) *Resource homogenisation drives niche convergence between generalists and specialists in a future ocean*. Science of the Total Environment

Sánchez N, **Goldenberg SU**, Brüggemann D, Jaspers C, Taucher J, Riebesell U (2024) *Plankton food web structure and productivity under ocean alkalinity enhancement*. Science Advances

Xin X, **Goldenberg SU**, Taucher J, Stühr A, Arístegui J, Riebesell U (2024) *Resilience of phytoplankton and microzooplankton communities under ocean alkalinity enhancement in the oligotrophic ocean*. Environmental Science & Technology

Goldenberg SU, Riebesell U, Brüggemann D, Börner G, Sswat M, Folkvord A, Couret M, Spjelkavik S, Sánchez N, Jaspers C, Moyano M (2024) *Early life stages of fish under ocean alkalinity enhancement in coastal plankton communities*. Biogeosciences

Cipriani V, **Goldenberg SU**, Connell SD, Ravasi T, Nagelkerken I (2024) *Can niche plasticity mediate species persistence under ocean acidification?* Journal of Animal Ecology

Ortiz J, Arístegui J, **Goldenberg SU**, Fernandez-Mendez M, Taucher J, Archer SD, Baumann M, Riebesell U (2024) *Phytoplankton physiology and functional traits under artificial upwelling with varying Si:N*. Frontiers in Marine Science

Goldenberg SU, Spisla C, Sánchez N, Taucher J, Spilling K, Sswat M, Fiesinger A, Fernández-Méndez M, Krock B, Hauss H, Haussmann J, Riebesell U (2024) *Diatom-mediated food web functioning under ocean artificial upwelling*. Scientific Reports

Ullah H, Fordham DA, **Goldenberg SU**, Nagelkerken I (2024) *Combining mesocosms with models reveals effects of global warming and ocean acidification on a temperate marine ecosystem*. Ecological Applications

Spilling K, Arellano SMM, Granlund M, Schulz KG, Spisla C, Vanharanta M, **Goldenberg SU**, Riebesell U (2023) *Microzooplankton communities and their grazing of phytoplankton under artificial upwelling in the oligotrophic ocean*. Frontiers in Marine Science

Baumann M, Paul AJ, Taucher J, Bach LT, **Goldenberg SU**, Stange P, Minutolo F, Riebesell U (2023) *Drivers of particle sinking velocities in the Peruvian upwelling system*. Biogeosciences

Baumann M, **Goldenberg SU**, Taucher J, Fernández-Méndez M, Ortiz J, Haussmann J, Riebesell U (2023) *Counteracting effects of nutrient composition (Si:N) on export flux under artificial upwelling*. Frontiers in Marine Science

Goldenberg SU, Taucher J, Fernández-Méndez M, Ludwig A, Arístegui J, Baumann M, Ortiz J, Stühr A, Riebesell U (2022) *Nutrient*

composition (Si:N) as driver of plankton communities during artificial upwelling. Frontiers in Marine Science

Ferreira CM, Connell SD, **Goldenberg SU**, Nagelkerken I (2021) *Positive species interactions strengthen in a high-CO₂ ocean*. Proceedings of the Royal Society B

*Nagelkerken I, ***Goldenberg SU**, Ferreira CM, Ullah H, Connell SD (2020) *Trophic pyramids reorganize when food web architecture fails to adjust to ocean change*. Science (*equal contribution)

Marangon E, **Goldenberg SU**, Nagelkerken I (2020) *Ocean warming increases availability of crustacean prey via riskier behavior*. Behavioral Ecology

Ferreira CM, Nagelkerken I, **Goldenberg SU**, Walden G, Leung JY, Connell SD (2019) *Functional loss in herbivores drives runaway expansion of weedy algae in a near-future ocean*. Science of the Total Environment

Brustolin M, Nagelkerken I, Ferreira CM, **Goldenberg SU**, Ullah H, Fonseca G (2019) *Future ocean climate homogenizes communities across habitats through diversity loss and rise of generalist species*. Global Change Biology

Doubleday ZA, Nagelkerken I, Coutts MD, **Goldenberg SU**, Connell SD (2019) *A triple trophic boost: How carbon emissions indirectly change a marine food chain*. Global Change Biology

Nagelkerken I, **Goldenberg SU**, Coni E, Connell SD (2018) *Microhabitat change alters abundances of competing species and decreases species richness under ocean acidification*. Science of the Total Environment

Ferreira CM, Nagelkerken I, **Goldenberg SU**, Connell SD (2018) *CO₂ emissions boost the benefits of crop production by farming damselfish*. Nature Ecology and Evolution

Goldenberg SU, Nagelkerken I, Marangon E, Bonnet A, Ferreira CM, Connell SD (2018) *Ecological complexity buffers the impacts of future climate on marine consumers*. Nature Climate Change

Ullah H, Nagelkerken I, **Goldenberg SU**, Fordham DA (2018) *Climate change could drive marine food web collapse through altered trophic flows and cyanobacterial proliferation*. PLOS Biology

Nagelkerken I, **Goldenberg SU**, Ferreira CM, Russell BD, Connell SD (2017) *Species interactions drive fish biodiversity loss in a high-CO₂ world*. Current Biology

Goldenberg SU, Nagelkerken I, Ferreira CM, Ullah H, Connell SD (2017) *Boosted food web productivity through ocean acidification collapses under warming*. Global Change Biology

Gil MA, **Goldenberg SU**, Bach ALT, Mills SC, Claudet J (2016) *Interactive effects of three pervasive marine stressors in a post-disturbance coral reef*. Coral Reefs

Goldenberg SU, Borcharding J, Heynen M (2014) *Balancing the Response to Predation - The effects of shoal size, predation risk and habituation on behavior of juvenile perch*. Behavioral Ecology and Sociobiology

Goldenberg SU, Erzini K (2014) *Seagrass feeding choices and digestive strategies of the herbivorous fish *Sarpa salpa**. Journal of Fish Biology