

## Curriculum Vitae

### Dr. Nina Bednaršek

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WoS Citations (22<sup>th</sup> December): 2780, h-index: 28; 57 publications

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### **Professional Summary:**

I am a biological oceanographer with over 15 years of expertise in marine science, specializing in the impact of climate change on marine organisms and ecosystems. My work integrates large-scale field-based observations, experimental research, ecosystem modelling and large-scale synthesis and meta-analyses to comprehensively understand the effects of multiple environmental stressors, including ocean acidification, warming, and deoxygenation. I apply an interdisciplinary approach that combines biogeochemistry, oceanography, and marine ecology to provide insights into climate change mitigation and adaptation. My research on biological vulnerability assessments has contributed to developing thresholds for evaluating climate risks in fisheries and aquaculture industries. My research also explores marine carbon dioxide removal strategies, with a particular focus on ocean alkalinity enhancement, evaluating their effectiveness, scalability, in combination with ecological implications. I have proven ability to manage interdisciplinary teams, and communicate complex scientific findings to decision-makers, collaborating with cross-disciplinary stakeholders, securing grants and driving policy-relevant research. With extensive experience leading international research collaborations and engaging in scientific advisory roles, the goal of my working efforts is dedicated to developing strategies that enhance ocean resilience while ensuring the sustainability of marine biodiversity and advancing innovative climate solutions.

### **Education:**

- **Postdoctoral Researcher** – Pacific Marine Environmental Laboratory (NOAA) | 2012 – 2014, granted prestigious US governmental granted National Research Council Fellowship Award
- **Ph.D. in Biological Oceanography** – University of East Anglia, UK (2011)  
*Marie Curie Individual Fellowship Recipient*
- **M.Sc. in Environmental Diagnostics** – Cranfield University, UK (2006)
- **B.S. in Microbiology** – University of Ljubljana, Interdepartmental Study, Biotechnical University, Slovenia (2004)

### **Professional Experience:**

#### **Senior Scientist**

Jožef Stefan institute, Slovenia | 2021 – ongoing

- Lead the development of novel research, methods and risk assessment on the marine carbon dioxide removal strategies in the Adriatic and larger Mediterranean region
- Coordinate observation programs, integrating biological, chemical and physical data with different stakeholders to improve ecosystem assessments.
- Lead multi-institutional projects and scientific networks across regional and global scales for risk assessment and safe implementation of marine mitigation and adaptation strategies.

### **Assistant Professor of Senior Research, Cooperative Institute for Marine Ecosystem and Resources Studies**

Oregon State University | 2022 – 2025

- Lead interdisciplinary teams to explore the ecological and biogeochemical impacts of climate change, developing mitigation and adaptation approaches for marine species, including tools for biological risk assessment on marine ecosystems, aquaculture and fisheries.
- Regularly communicate research findings to policymakers, addressing planetary boundary changes promoting sustainable ocean governance.
- Supervised post-graduate students.

### **Senior Scientist**

Southern California Coastal Water Research, USA | 2017 – 2021

- Spearheaded cutting-edge research on multiple stressors and its impact on marine biodiversity and fisheries along the US West Coast.
- Conducted meta-analyses synthesis work to determine the vulnerability of ecologically and economically important marine calcifiers to ocean acidification and other climate stressors.
- Played a key role in developing early-warning indicators for ocean health in collaboration with regional stakeholders to implement sustainable management strategies.

### **Research Scientist**

University of Washington & National Oceanographic and Atmospheric Administration | 2012 – 2017

- Investigated biogeochemical responses of marine ecosystems to acidification on pelagic calcifiers in high-latitude and upwelling regions, supporting the application of regional monitoring systems.
- Collaborated with national and international agencies to integrate scientific findings into environmental policies and management practices.

### **Visiting Professorship**

Angers University, France | 2012

- Development of methods used for early-warning indicators for tracking changes in marine life due to ocean acidification.
- Teaching, mentoring of undergraduate students.

### **Research Associate**

Nova Gorica, Slovenia | 2010-2011

- Teaching undergraduate course (Methods in scientific research and statistics)
- Mentoring undergraduate students.

### **Key Leadership Role:**

I actively contribute to multiple international scientific organizations and policy advisory panels in the following roles:

- 1) Vice Chair**, Executive Steering Committee, Integrated Marine Biosphere Research (IMBeR) | 2021 – Present  
I lead two programmes and provide scientific leadership to global oceanic research programs, coordinating international collaboration on climate mitigation strategies and multi-stressor impact studies.
  - a. *Understanding and quantifying the state and variability of marine ecosystems under multiple stressors in marine ecosystems*, contributing to informed management and conservation decisions.
  - b. *Innovation Challenge on the Interventions to change the course of climate impacts*.
  
- 2) Executive Committee Member**, Ocean Negative Carbon Emission Program (UN Decade Program) | 2023 – Present  
Lead initiatives on marine-based carbon removal strategies, promoting mCDR as a sustainable solution for global carbon management, assessing the ecological sustainability of marine carbon sequestration and promoting effective intervention strategies for mitigating climate change impacts on ocean ecosystems.
  
- 3) Scientific Steering Committee Member** of the Integrated Ocean Carbon Research Working Group (UNESCO IOC-R) | 2022 – providing expertise on ocean carbon cycle research and climate mitigation solutions on the following topics:
  - a. *Role of biology in the ocean carbon cycle and how is it changing?*
  - b. *Future changes in the carbon cycle from deliberate ocean-based climate interventions*.
  - c. Approaches to achieve Integrated Ocean Carbon Research (next level biological studies and experiments).
  
- 4) Scientific Steering Committee on the Mediterranean OA Hub** | 2021 – Present  
Lead the topics on the marine CDR effects and early warning indicators on marine biodiversity and fisheries.
  
- 5) Scientific Steering committee** on the newly established Ocean100+ initiative, developing the Action Plan for the Ocean and the Ocean100+ initiative. In my role, I
  - a. advise on research priorities, methodologies, and best practices.
  - b. ensure scientific outputs are rigorous, credible, and aligned with international standards.
  - c. provide expertise to support Ocean100+ activities, including risk assessments, surveys, and policy recommendations.
  - d. facilitate connections between the initiative and the wider scientific community.
  - e. promote diversity, equity, and inclusion in scientific contributions.

### **Awards and Fellowships:**

- *2018 Salish Sea Science Prize Award winner* - Awarded for outstanding research on the vulnerability of marine calcifiers to climate change impacts and for advancing mitigation strategies to protect marine biodiversity.
- *2018 Aota Award for the excellence* in the polar research (finalist)

- 2014 Best oral scientific presentation awarded by PICES committee
- 2012 National Research Council Fellowship
- 2009 Edith Fanta award for the most prominent young researcher and the best oral presentation (award is given annually for the outstanding research in polar science)
- 2007 Marie Curie Doctoral Fellowship (award given for excellence in science)

### **Service, Chaired Symposia and Advisory Committees (last 5 years only):**

1. **Advisor for the European Commission** on the mCDR implementation strategies on the biological impacts of the climate interventions (2025);
2. **Scientific leader** for the IMBeR's Future Ocean 3 conference (IMBeR Synthesis and Future Planning), Shanghai, China, 2025;
3. **Lead of the Conference Session:** Taking Ocean Alkalinity Enhancement to the Markets: From Biogeochemistry to Economics, Ocean Sciences Meeting, 2024, USA;
4. **Co-chair of the Conference Session** on Natural and forced variability of the CO<sub>2</sub> fluxes in the Eastern Boundary Upwelling Systems (EBUS): Past, Present and Future, September 2022, Lima, Peru;
5. **Lead of the Conference Session:** Ocean acidification, Past, Present with Future Implications Ocean Sciences Meeting, February 2022, USA;
6. **Co-lead of the Session on the Climate change Extreme Events;** Ocean Sciences Meeting, February 2022, USA;
7. **Topic Editor for "Ocean Artificial Upwelling – Ecological Responses and Biogeochemical Impacts** for the journal *Frontiers in Marine Science* (2021-22);
8. **Leader of the efforts on the large-scale biological observations** along the US West Coast related to ocean acidification and hypoxia and coordinate with multi-institutional international stakeholders (2016-2022, work for the US government on the marine observations);
9. **Scientific advisory panel member** on the Georgia Sea Grant proposal process (2021);
10. **Leader and main coordinator** of the integrated chemical and biological ship-based observations and biological vulnerability assessment for the North American GOA-ON Hub (2020-21);
11. **Scientific Advisor** for the North Atlantic Ocean acidification Hub (2021) for biological observations.
12. **Scientific Advisor** for the IUCH for oxygen deoxygenation (2021);
13. **Topic Editor** for Acidification and Hypoxia in Marginal Seas for the journal *Frontiers in Marine Science* (2020-21);
14. **Leader of the session** on the synthesis session on ocean acidification along the US West coast (CalCOFI conference, 2020);
15. **Lead session organizer** at Ocean Sciences Meeting on the topic: '*Chemical and Biological Impacts of Ocean Acidification in the Pacific Ocean*'; February 2020, USA;
16. **Expert advisor** at the UNFFFC meeting at COP25, Madrid, 2019;
17. **Science Advisory Panelist** for California SeaGrant (2020);
18. **Leader of the scientific workshops** '*Science Synthesis and Expert Consensus for Thresholds Derivation for Pelagic Calcifiers and Echinoderms*'. I led highly targeted expert consensus process with 10-15 international scientists and stakeholders to derive biological thresholds for vulnerability assessment. Each threshold was held for 3 days, organized in 2017 and 2018;
19. **Co-led the session on biological effects of ocean acidification on coastal ecosystems** '*Moving towards integrated biological measurements for ocean acidification assessment*', GOA-ON (Global Ocean Acidification Observing Network, 2019, China);

20. **Co-convener of the scientific sessions** at Coastal & Estuarine Research Federation conference (CERF) '*Ocean acidification in a multiple-climate-change-stressors context: science-based tools for management*', 2019, USA;
21. **Expert advisor and reviewer** for the climate change related proposals for Georgia SeaGrant (2019), USA;

### **Project Leadership:**

- 1) '**Investigating biological responses to ocean alkalinity enhancement on Pelagic Calcifiers**'. Leading conceptual and experimental work on the impacts of ocean alkalinity enhancement on ecologically and economically important marine calcifiers for aquaculture and fisheries for informed solutions.
- 2) '**Oceans as sustainable solutions for climate change: ecosystem and biogeochemical approaches**.' I am leading the work with the focus on natural analogues related to the ocean alkalinity enhancement in the Adriatic and Mediterranean Sea, investigating the impacts on the ecological sustainability, abiotic precipitation, and carbonate chemistry dynamics.
- 3) '**Biomarkers of subcellular stress under global environmental change**'; I led the work on the impacts of climate stressors on marine invertebrates in the Adriatic Sea. The work focused on understanding of energetic constraints and organismal capacity to sustaining vital biological processes against the ocean acidification and warming and included novel measurements at the lowest (sub)-cellular level (mitochondrial integrity, cytoskeleton activity, oxidative stress reactions), designating them as the subcellular markers of stress. I oversaw scientific and logistics operation of the state-of-the-art experimental platforms, providing support for the R&D engineering customized support while managing diverse workstreams.
- 4) '**Multistressor climatic impacts on the Dungeness crabs along the Pacific coast**'. Ocean acidification (OA), hypoxia (H), warming (T) marine heatwaves (MHW), and harmful algal blooms (HABs) have emerged as key pathways for disruption of ocean ecosystems from anthropogenic carbon emissions. Together, these multiple stressors represent a grand challenge for ocean management. The goal of this proposal ranges from an accurate forecast of how exposure to stressors will intersect with management and planning, to a predictive understanding of how marine ecosystems and fisheries will be reorganized, and what actions can be employed to support the resilience of ecological systems, and ocean-dependent communities.
- 5) '**Interactive effect of OA and hypoxia on CA species with ecological and fisheries importance**'. I led the investigations related to the physiological, organisms and gene expression responses of ecologically and commercially important marine calcifiers (Dungeness crabs, red sea urchins) along California coast under ocean acidification and hypoxia. The aim was to develop biomarkers that can be used in the field as indicators of organismal health under multiple stressors which can result in greater cumulative impacts on species.
- 6) '**Pteropods under ocean acidification in the Beaufort Sea in the Canadian Arctic**'. Mapping and evaluating the impact of the seasonal and interannual exposure to ocean

acidification (OA) on pelagic calcifiers in the polar estuarine fjords in the Western Arctic. For more accurate interpretation of biological sensitivity, the interaction of multiple biogeochemical variables and processes (surface freshening, respiration, warming, upwelling, etc.) were studied to distinguish the state of OA at regional and temporal scales. We integrated the responses of sensitive biological indicators with chemical and physical drivers to better inform the state and consequences of OA in offshore and coastal habitat of the Beaufort Sea shelf.

- 7) **'Pteropods as indicators of ocean acidification in the high latitudinal environment'**; This proposal investigated ocean acidification in high latitudinal environments (Gulf of Alaska, Bering Sea, Beaufort Sea) and the direct impact on the pteropods, and indirectly on fish. The aim was to investigate the applicability of pteropods as indicators for addressing a key need for tracking ecosystem change relevant to effective fisheries resource management. and monitoring efforts. Biological vulnerability was focused on the aspects of large-scale population connectivity, genetic structure, biomineralization responses. Biological data was combined with environmental data to identify potential refugia and habitats of concern and provide foundation for future monitoring of ecosystem health and investigation of ocean acidification in the North Pacific ecosystems.
- 8) **'The impact of dynamic ocean acidification exposure on shellfish important in the aquaculture'**. This led this experimental project that focused on investigating the impacts of variable OA conditions, i.e. fluctuations in carbonate chemistry due to tidal, diel, seasonal variations resulting in various amplitude and frequency of exposure. The responses were studied on aquaculture-important species (Pacific and Olympia oysters), and biological responses were studied using artificial intelligence and machine learning algorithms.
- 9) **'Assessing biological vulnerability to ocean acidification in pelagic and benthic calcifiers in the estuarine regime of the Salish Sea'**. I led this project with the aim of characterizing the vulnerability and risks to ocean acidification in the estuarine habitats of the Salish Sea, one of the more productive networks of coastal waters in the Pacific Northwest. Relevant biological thresholds for marine pelagic and benthic calcifiers were applied to monitoring and biogeochemical model outputs to assess and interpret the impact of nutrient loading/remineralization and atmospheric CO<sub>2</sub> uptake on economically valuable marine habitats and species under current and future projections.
- 10) **'The sensitivity of Dungeness crabs to Ocean Acidification'**. This project focused on development of various biological response metrics to evaluate the impact of ocean acidification and ocean warming on economically important calcifiers Dungeness crab. This included the use of scanning electron microscopy (SEM) and micro computed tomography ( $\mu$ CT), the two metrics to be integrated into regional biogeochemical models to forecast biological sensitivity. Such forecasts allow for informed management decisions towards sustainable Dungeness crab fishery.
- 11) **'Cultivating Seaweeds to Mitigate Ocean Acidification and Generate Habitat for Fertilizer, Food and Fuel'**. This multi-partner project was focused on development of phytoremediation techniques (i.e. cultivation of sugar kelp) as a strategy for removing carbon dioxide from seawater to improve local conditions by offsetting the effects from ocean acidification in the local estuarine environment important for marine resources and aquaculture industry. We measured the effect of kelp on several metrics of seawater chemistry and on a suite of calcifying organisms (pteropods, oysters, mussels, gastropods) within the kelp farm.

For that, I developed specialized in situ mesocosms to conduct the experiments under kelp-related fluctuating carbonate chemistry conditions. Additionally, the team developed a computer model that simulated environmental variables and kelp growth and then integrated the sampling data into an interface that graphically depicts the effect of kelp cultivation on seawater chemistry.

- 12) **'Integrated Modelling of Ocean Acidification and Hypoxia to Support Ecosystem Prediction and Environmental Management in the California Current System'**. This project combined observation, experimental, large-data biological synthesis (eg. meta-analyses) and modelling approaches to evaluate the impact of ocean acidification and hypoxia on lower trophic levels in the upwelling regime of the California Current System.

### **Invited talks and Presentations:**

- **Bednaršek, N.:** Potential impact of Ocean Alkalinity Enhancement on marine ecology and carbon cycle (**invited**, Brussels, 2025)
- **Bednaršek, N.:** The impact of Ocean Alkalinity Enhancement on marine calcifiers: biological effects assessment and mitigation potential on ocean acidification (**invited**, One Ocean Science Congress, France, 2025)
- **Bednaršek, N.:** Limitation of mitigating effects of OAE and negative impacts of ocean acidification on marine aquaculture (Liege Colloquium, Belgium, 2025)
- **Bednaršek, N.:** The role of natural analogues in the Adriatic Sea and the importance for the aquaculture (**invited** talk, OA Week, 2025).
- **Bednaršek, N.:** Assessing the sensitivity of marine species to ocean alkalinity enhancement and the prospect of mCDR in the Mediterranean Sea (**invited talk**, OA Week 2024, GOA-ON);
- **Bednaršek, N.:** Getting MRV Operational & Market-Ready (**invited panellist**, Carbon to Sea's Convening, Washington DC, 2024.
- **Bednaršek, N.:** Evaluating Ocean alkalinity enhancement from chemical-biological to the economic assessment of risks and benefits (poster at the 2024 Ocean Sciences Meeting)
- **Bednaršek, N.:** Predictable patterns within the kelp forest can indirectly create temporary spatial refugia for ocean acidification, **invited talk** for the Ecosystem Studies of the Subarctic and Arctic Seas (ESSAS) meetings in Bergen, Norway. 2023.
- **Bednaršek, N.:** Socio-economic consequences of ocean acidification in the Mediterranean Sea (**invited** talk by UNESCO, IAEA, GOA-ON, 2023.
- **Bednaršek, N.:** Ocean Acidification Impact on Pelagic Calcifiers in the Northeast Pacific: Biogeochemical Perspective (presentation for the OSM22 on the OA: Processes and Consequences in the Past, Present and for Future Mitigation Strategies, February 2022)
- **Bednaršek, N.:** Predictable biogeochemical patterns within the macroalgae can indirectly create temporary spatial refugia for ocean acidification (**invited talk** for the IMBeR scientific research symposia, November 2021)
- **Bednaršek, N.:** Ocean acidification and multiple stressor impact in the oligotrophic regimes around the Mediterranean (**invited talk** for the Universitat Autònoma de Barcelona; May 2021).
- **Bednaršek, N.:** The implications of climate change and ocean acidification on the Mediterranean Sea on the socio-economic-ecological interface (**invited** talk, 2020)
- **Bednaršek, N.:** Ocean acidification impact on marine calcifiers and aquaculture in the Mediterranean Sea and beyond (**invited** talk, 2020)
- **Bednaršek, N.:** Ocean acidification impact on the aquaculture and fisheries as governance challenge in the Mediterranean Sea (ASLO Aquatic Sciences meeting 2021)

- **Bednaršek, N.:** Integrated Assessment of the Risks to Ocean Acidification in the Northern High Latitudes: Regional Comparison of Exposure, Sensitivity and Adaptive Capacity of Pelagic Calcifiers (**invited** talk for the Ocean Acidification week, Arctic Hub, GOA-ON, 2021)
- **Bednaršek, N.:** Ocean acidification risks and solutions for economically and ecologically sensitive calcifiers (**invited webinar** for the US governmental agency National Oceanic and Atmospheric Administration, USA, July 2020).
- **Bednaršek, N.:** The emerging science of acidification impacts across various spatial scales (**invited** talk at the Scripps Institution of Oceanography, USA, 2020).
- **Bednaršek, N.:** Multi-faceted integration for more accurate ocean acidification assessment in the open-coastal ocean (**invited talk** for the strategic planning and implementation of the Ocean Acidification Program NOAA, USA, 2020).
- **Bednaršek, N.:** The emerging science of acidification impacts across various spatial scales (**invited talk** at the North American Hub, Mexico, 2019).
- **Bednaršek, N.:** The emerging science of climate change related biological effects in the high latitudes (**invited talk** at the UNFFFC meeting in Cryosphere Pavilion, COP25, 2019).
- **Bednaršek, N.:** Southern Ocean resilience to climate change (**invited talk** at the UNFFFC meeting in Cryosphere Pavilion, COP25, Madrid, 2019).
- **Bednaršek, N.:** Linking present-day ocean acidification impacts to socio-economic and governmental implications; COST Action “OceanGov: Ocean Governance for Sustainability – challenges, options and the role of science”, **invited talk**, Slovenia, 2019).
- **Bednaršek, N.:** Kelp as potential chemical refugia for Acidification-Sensitive Pelagic and Benthic Calcifiers (**invited talk**, kelp meeting held at SCCWRP, 2019).
- **Bednaršek, N.:** Biological threshold application for forecasting sustainability of estuarine calcifiers (**invited talk**, Washington Ocean Acidification Center, 2019).
- **Bednaršek, N.:** Ocean acidification driven biological vulnerability in the high latitudes: comparison between the Gulf of Alaska, Bering Sea and Beaufort Sea (**invited talk**, Japan, 2019)
- **Bednaršek, N. et al.:** Integrated Ocean acidification bioassessments (**invited talk** as a representative of the research sector at the U.S. West Coast Biological Observations Workshop, Santa Cruz, US, 2018).
- **Bednaršek, N. et al.:** Biological effects of ocean acidification in situ: Moving towards integrated bioassessment (**invited talk**, North America Hub, Canada, 2018).
- **Bednaršek, N. et al.** Synthesis of Thresholds of Ocean Acidification Effects on Pelagic Molluscs (**invited** webinar on supporting Development of Ocean Acidification Water Quality Thresholds in California, 2018).
- **Bednaršek, N.:** Interactive effect of warming and acidification on pteropod distribution in the California Current System (OSM, USA, 2018).
- **Bednaršek, N.:** Exposure history determining pteropod vulnerability to ocean acidification (ASLO, USA, 2016).
- **Bednaršek, N.:** Pteropods in the California Current System: Indicators for ocean acidification across different upwelling regimes (talk, Italy, 2015).
- **Bednaršek, N.** The application of pteropod for ocean acidification monitoring in Norwegian Waters (**invited talk** by the Norwegian Governmental Agency, 2015).
- **Bednaršek, N.:** Pteropod as indicators from scientific, policy and management perspective (**invited talk** at the Pteropod International Workshop (UK, 2015).
- **Bednaršek, N., et al.** From science to management: using pteropods as indicators for ocean acidification monitoring, Our Common Future, 2015 (oral talk, UK, 2015).
- **Bednaršek, N.:** Pteropod as indicators from scientific, policy and management perspective (**invited talk** at the Pteropod International Workshop (UK, 2015).

- **Bednaršek, N.:** Pteropod as indicators for ocean acidification (**invited talk** at Royal Society OA Workshop, UK, 2015).

### **Guest Lectures:**

- **Bednaršek, N.:** Marine CO2 removal strategies- interdisciplinary perspective; 2024 (**invited talk**, University of Iceland, 2024).
- **Bednaršek, N.:** Ocean acidification risks for sensitive marine calcifiers (Ocean-Climate series at the Universitat Autònoma de Barcelona, May 2021).
- **Bednaršek, N.:** Marine calcifiers under stress (Université du Québec à Rimouski, Canada, 2019).
- **Bednaršek, N.:** Marine calcifiers under ocean acidification (Laval University, 2019).
- **Bednaršek, N.:** Biological implications of marine calcifiers in the North Pacific – overlapping opportunities across the Eastern and Western side (JAMSTEC, Japan, 2019).
- **Bednaršek, N.:** Current impact of present-day ocean acidification conditions on marine calcifiers (**invited talk**, NOAA, PMEL, 2019).

### **Selected Outreach and Media Coverage:**

Numerous information sessions on OA for legislators and policy makers in Washington; continuous engagement with US Environmental Protection Agency; Fish and Wildlife; Marine Resource Advisory Committee (WA); Pacific Coast Collaborative.

- **‘Connection science of ocean acidification and art through pteropods’** –side event at the Conference Our Common Future Under Climate Change (Paris, 2015).
- **Val 202, Špilferderber**, interview with Jurij Drevnšek:  
<https://val202.rtvsllo.si/podcast/spilferderber/173251229/174873155>
- **CNN:** <https://www.cnn.com/2020/01/27/us/pacific-ocean-acidification-crabs-dissolving-shells-scn-trnd/index.html>
- **Seattle Times:** <https://www.seattletimes.com/seattle-news/crab-larvae-off-oregon-and-washington-suffering-shell-damage-from-ocean-acidification-new-research-shows/>
- **National Geographic:** ‘Ocean Acidification Chipping Away at Snail Shells’, May 2, 2014; <http://news.nationalgeographic.com/news/2014/05/140502-ocean-snail-shell-dissolving-acidification-climate-change-science/>
- **The Seattle Times:** ‘Acidification eating away at tiny sea snails’, April 31, 2014 (video interview)
- <http://apps.seattletimes.com/reports/sea-change/2014/apr/30/pteropod-shells-dissolving/>
- **Radio Podcast** on the topic of ocean acidification impact on economically important Dungeness crab, Sept 2020 (radio interview): <https://kptz.org/2020/08/19/ocean-crabs-and-acidification/>
- **Art Exhibitions (three)** with David Eisenhour (collaboration based on the exchange of scientific images of pteropod to produce sculptures), MONA and Bainbridge Island Museum of Art. Chairing a discussion on connect science of climate change and art, Museum of Northwest Art, La Conner, WA and Bainbridge Island Modern Art Museum (2014 and 2015) (<http://eisenhoursculpture.com/pages/News.html>)
- Science, News and Analysis: ‘Snails Are Dissolving in Pacific Ocean’, May 9, 2014 (interview); <http://news.sciencemag.org/biology/2014/05/snails-are-dissolving-pacific-ocean>
- **Water Brothers:** Filming documentary on ocean acidification, May 15, 2014 (video inte
- **Sponge Bob Production** (working with production team on science contributions), January 2015
- **The Sound Conversation:** Ocean Acidification, Seattle Aquarium (keynote speaker), April 2015 (minute 5:07: [https://www.youtube.com/watch?v=D8amYNEd\\_MI](https://www.youtube.com/watch?v=D8amYNEd_MI))
- **Rolling Stone:** Interview involvement on climate change and ocean acidification, August 2015

- **TV King 5:** Ocean Acidification, TV appearance, March 2015
- **TV King 5:** Ocean acidification in the Puget Sound, appearance in the TV documentary, December 2015.
- **Bednaršek, N.:** The Risks of Climate Change on the Most Vulnerable Species and Ecosystems (invited webinar for the Cabrillo Marine Aquarium Discovery Lecture Series, USA, October 2020).

### **Synergistic Activities:**

Participated in the side event and press briefings for policy makers, journalist and politicians at the United Nations COP12 and COP19 negotiations.

Act as a reviewer for

- **Science, Nature Climate Change, Nature Geoscience, Global Change Biology**
- Frontiers in Marine Science, Marine Environmental Research, Marine Ecology Progress Series, Science of the Total Environment, Proceedings to the Royal Society, Progress in Oceanography,
- Biogeosciences, Limnology and Oceanography, ICES Journal of Marine Science, Biology Letters, Journal of the Marine Biological Association of the United Kingdom, Cahiers de Biologie Marine, UN reports.

Reviewed proposal for:

- National Science Foundation (USA)
- NASA (USA)
- Strategic Partnership Grants for Projects (Canada)
- Helmholtz Association (Germany).

## **Scientific Excellence and Leadership Summary**

Dr. Nina Bednaršek is an internationally recognized Biological Oceanographer with over 15 years of distinguished research leadership in marine biogeochemistry, climate-change biology, and ecosystem-based mitigation strategies. Her scientific contributions span experimental, field, and modeling studies addressing ocean acidification, warming, and deoxygenation. With over 2,600 citations (h-index: 28), she ranks among the leading global experts in marine carbon dioxide removal (mCDR) and ocean alkalinity enhancement (OAE). She has served as Vice Chair of IMBeR, member of the UNESCO-IOC Integrated Ocean Carbon Research (IOC-R) Steering Committee, and Executive Committee member of the UN Decade Ocean Negative Carbon Emission (ONCE) Programme. Dr. Bednaršek's leadership in coordinating multi-institutional and interdisciplinary projects (EU, US NOAA, NSF, Carbon to Sea) has advanced the global understanding of marine carbon cycling and biological resilience under climate stressors. She has mentored numerous PhD and postdoctoral researchers across Europe and the US, while actively shaping global science-policy dialogues through expert advisory roles for the European Commission and UN bodies. Her work exemplifies scientific excellence, innovation, and commitment to sustainable ocean governance.