# Surprising Benefits of an Artist in Residence Program

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**Abstract**

In 2018 Ocean Networks Canada initiated an Artist in Residence program, despite uncertainties about what to expect and how to best manage it. To our surprise, the announcement call attracted immediate interest from artists around the world. Partnering with the University of Victoria Faculty of Fine Arts, we formed a selection committee who chose our first Artist in Residence. Since then, the program has exceeded our expectations and brought us into the compelling realm of transdisciplinary collaboration between ocean science and the arts. This collaboration is bearing fruit not only through the creation of new artistic works, but also as a venue for hosting conversations that can help bridge disciplinary boundaries across campus and across continents. This presentation will recap our Artist in Residence program and the artists who have been engaged both formally and informally through this initiative, as well as some of the fascinating and diverse work they have produced. We will describe our management processes, outreach efforts and some of the new challenges and opportunities we have encountered along the way. We will also share advice and insights from artists who have engaged in explorations along the Art-Science interface.

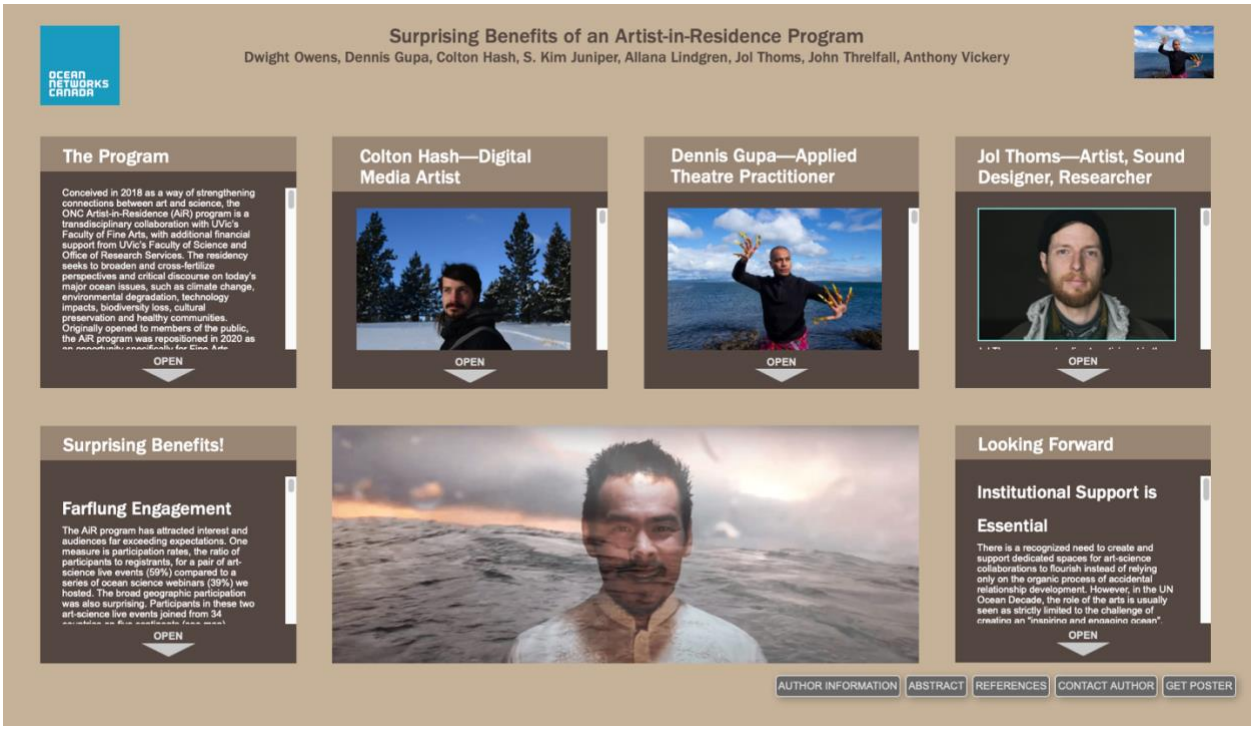
# SY45E-0808: Surprising Benefits of an Artist in Residence Program

Dwight Owens, Dennis Gupa, Colton Hash, S. Kim Juniper, Allana Lindgren, Jol Thoms, John Threlfall, Anthony Vickery

*This is a pdf version of the poster by the same title presented at the American Geophysical Union 2021 Fall Meeting on 16 Dec 2021.*

## Affiliations

Allana Lindgren, Colton Hash, John Threlfall, Anthony Vickery: University of Victoria Faculty of Fine Arts
Dennis Gupa: University of Winnipeg (formerly University of Victoria Faculty of Fine Arts)
Kim Juniper, Dwight Owens: Ocean Networks Canada, University of Victoria
Jol Thoms: Goldsmiths University, London




## The Program

Conceived in 2018 as a way of strengthening connections between art and science, the ONC Artist-in-Residence (AiR) program is a transdisciplinary collaboration with UVic's Faculty of Fine Arts, with additional financial support from UVic's Faculty of Science and Office of Research Services. The residency seeks to broaden and cross-fertilize perspectives and critical discourse on today's major ocean issues, such as climate change, environmental degradation, technology impacts, biodiversity loss, cultural preservation and healthy communities. Originally opened to members of the public, the AiR program was repositioned in 2020 as an opportunity specifically for Fine Arts graduate students to ignite cross-disciplinary exchanges.

The overall goals of the ONC AiR program include:

- exploring the potential of arts and alternative cultural practices to interpret and help address major ocean challenges;

- surfacing philosophical, aesthetic, and ethical aspects of the Ocean and the impacts human practices have on it;
- adding a complementary artistic and creative perspective to Ocean science;
- revealing interconnections between Indigenous ways of knowing, scientific research and the arts; and
- and helping to envision the potential long-term impacts of ocean changes on humanity.

Thus far two artists, Colton Hash and Dennis Gupa, have participated formally as Artists in Residence through this program. A third artist, Jol Thoms, administers an ongoing art-science initiative through a deep-ocean installation piece (described in the section introducing Jol Thoms).

The Artist in Residence program described in this poster is jointly administered and supported by Ocean Networks Canada (ONC) and the University of Victoria Faculty of Fine Arts (UVic FA). Additional funding support is provided by the University of Victoria Faculty of Science and the University of Victoria's Office of Research Services. A stated program goal is to strengthen connections between art and science that broaden and cross-fertilize perspectives and critical discourse on today's major issues, such as environment, technology, oceans, cultural and biodiversity, and healthy communities. This program is open to all current University of Victoria graduate students who have completed most of their course requirements in the Faculty of Fine Arts with practice in any visual, written, musical or performance discipline.

Over the course of a 4-month residency, artists learn from and engage with current ocean science research, connecting it to their own practice, and to wider societal and cultural aspects, creating work for public presentation at the end of the residency. Research themes include deep sea ecology, seabed-ocean exchanges, coastal ocean processes, marine natural hazards, ocean soundscape, Arctic ocean observing and ocean big data. Artists are also invited to contribute as a lead or co-author in scientific conference papers and/or journal articles.

To apply, prospective artists are asked to submit a proposal including:

- the artist's CV;
- a concise portfolio of previous relevant artistic work;
- a letter of motivation outlining the artist's project proposal for the residency; and
- a 500-word project proposal with a separate project-costs budget.

During or following the residency, the artist is featured in a live virtual event, wherein they have the opportunity to share their work, approaches and reflections. These live virtual events are organized and managed by ONC, with marketing support from UVic FA, the University of Victoria Communications Department and other collaborating groups.

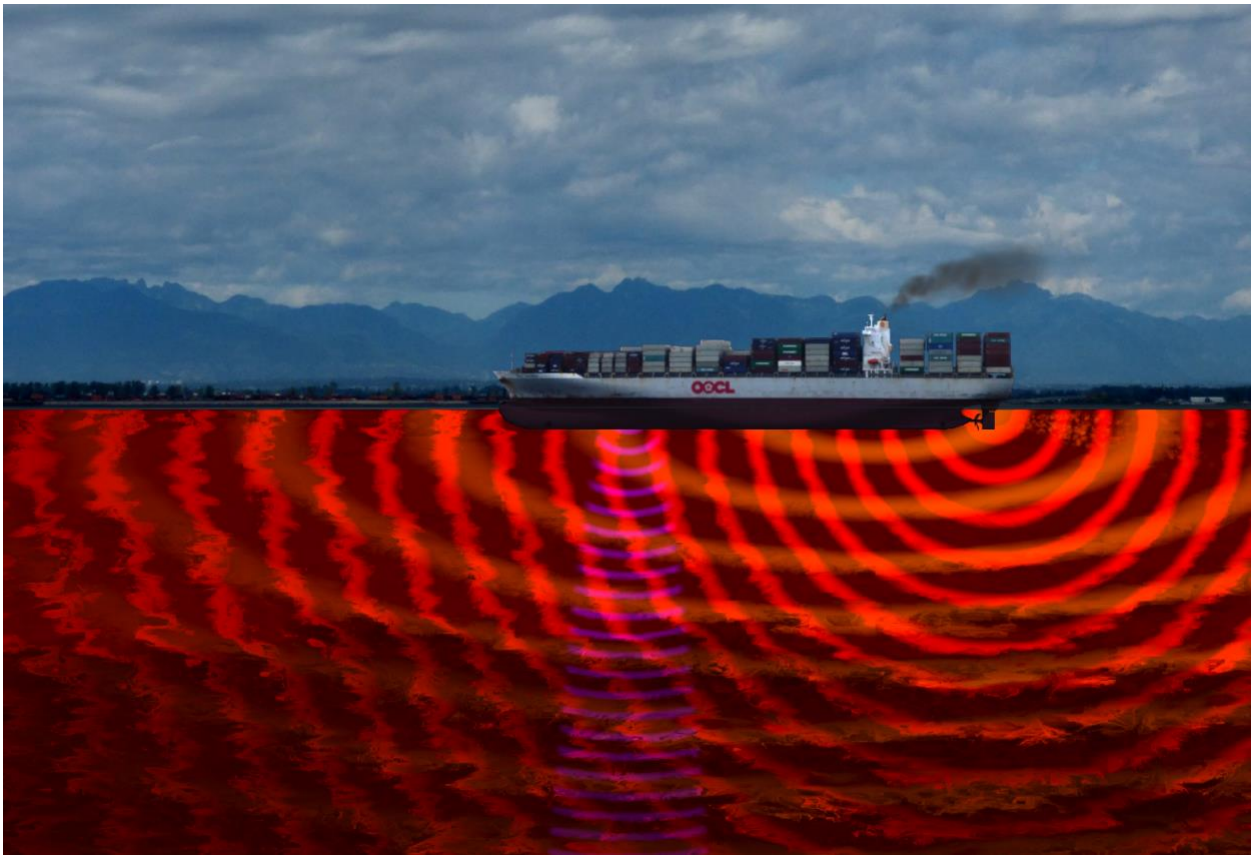
At the conclusion of the residency, the artist hosts a public exhibit within a specified budget agreed to during the residency, depending on the type of project to be exhibited. When required, assistance for marketing and/or ticketing is made available from specific UVic departments (Visual Arts, Theatre, etc.).

# Colton Hash—Digital Media Artist

Hash leads a multidisciplinary practice focusing on the creation of interactive artworks that use environmental data as media. These works primarily convey ecological relationships that are informed by scientific understanding, personal observation and concerns from within his local community. Reflecting on the relationship between art and science in his work, Hash feels that he is “not doing direct science communication” and that his artworks are “not scientific models,” but he creates art to “engage with the vast complexities of our world.” Hash explains, “I'm interested in visual art as a way to develop mental models of ecological systems. This is informed by some of my conversations with education and outreach staff at Ocean Networks Canada about the potential of visual arts to... spark this imaginative understanding of ecological issues. Even if that initial understanding is wrong, it can be something to get people thinking and get people engaged. Then you can attribute more precise scientific information once people are engaged in their own way.”

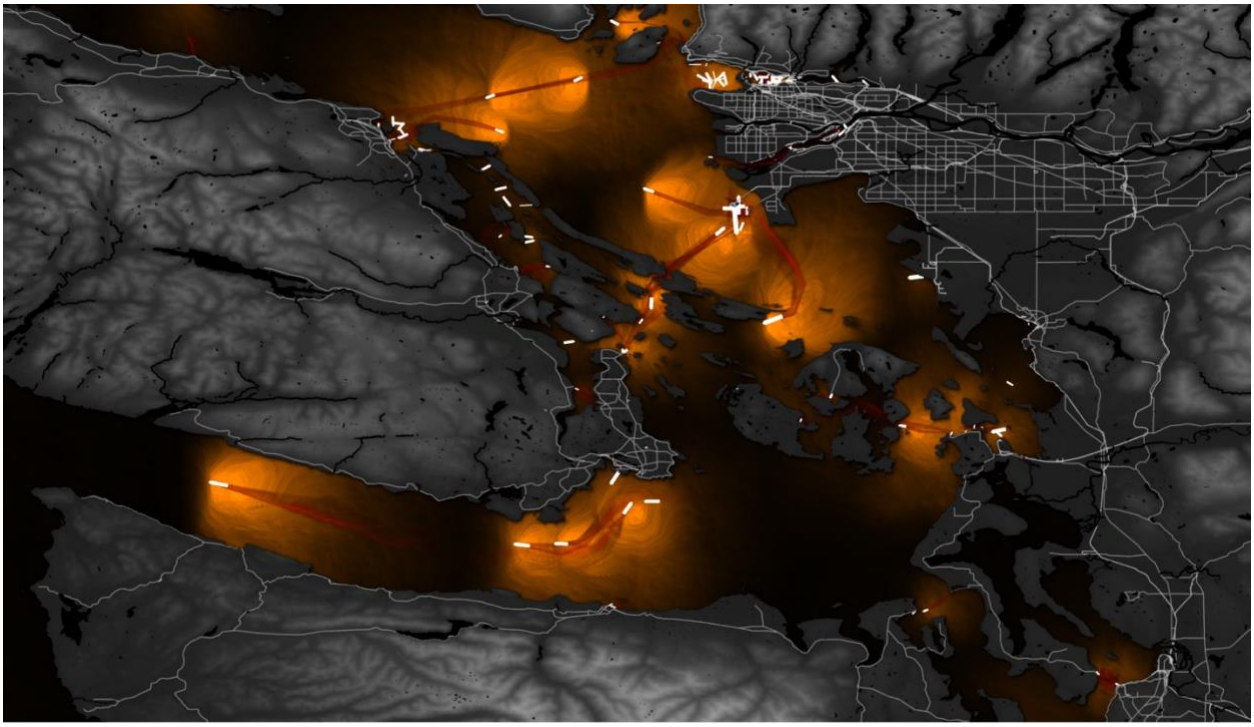
Hash’s work is strongly influenced by his relationship to the ocean and the surrounding ecosystem along the coast of the Salish Sea, where he is “able to experience ... cycles of dramatic weather patterns that are influenced by the ocean. And to get to see some of the biological cycles through exploring things like tide pools on the seashore.” Living there also brought him in close contact to the issue of global shipping as he was “captivated by these very large ships that would anchor in, basically in our backyard.” Hash was “drawn to these...as symbols and vital parts of the global economy,” wondering “what kind of goods they were carrying, where they were going,” and “what are their impacts on the ocean”. This led him to create artworks exploring the acoustic impacts of shipping on marine ecosystems. Hash observed, “oil tankers [are] moving through this area and continuing to feed into the anthropogenic sources of climate change. And so these kinds of experiences within this ecosystem are a huge motivation and impetus for me to create art to try to process some of these feelings.”

During his Art Residency and collaborations with scientists from Ocean Networks Canada, Hash created *Acoustic Turbulence*, an interactive artwork depicting animated scenes of large ships traversing the Salish Sea. With intuitive controls, viewers can move a virtual camera vertically through the water column to explore visualisations and recordings of the sounds these ships produce.




*Excerpt from Acoustic Turbulence informational video, 2019.*

Hash's piece *Prevalent Echoes* further builds on this work by representing the cumulative impact that large ships have in the region based on their acoustic footprints. Hash seeks to portray our society's invisible impacts on the Salish Sea ecosystem from its intensive use as a transportation corridor for both global and local marine traffic.



*Prevalent Echoes, 2019.*

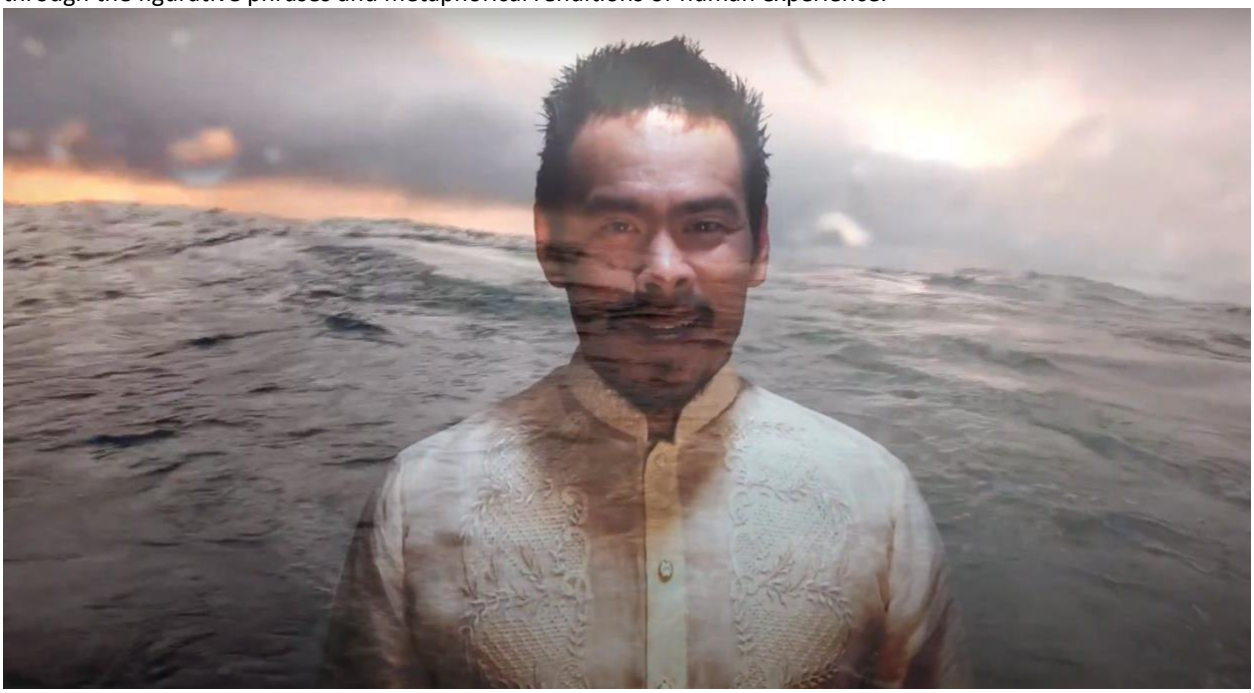
Hash also created *Atmospheric Ocean*, an interactive data art application presenting an abstraction of physical processes that cycle carbon dioxide between the air and sea. The viewer is placed within the dynamic mixing layer between the ocean and atmosphere. Carbon is represented in various forms and spreads between the air, surface water and deep ocean. The processes visualized in Atmospheric Ocean include CO2 absorption, photosynthesis, decomposition, carbonic acid formation and CO2 venting from the ocean.


*Atmospheric Ocean, 2019.*

## Dennis Gupa—Applied Theatre Practitioner

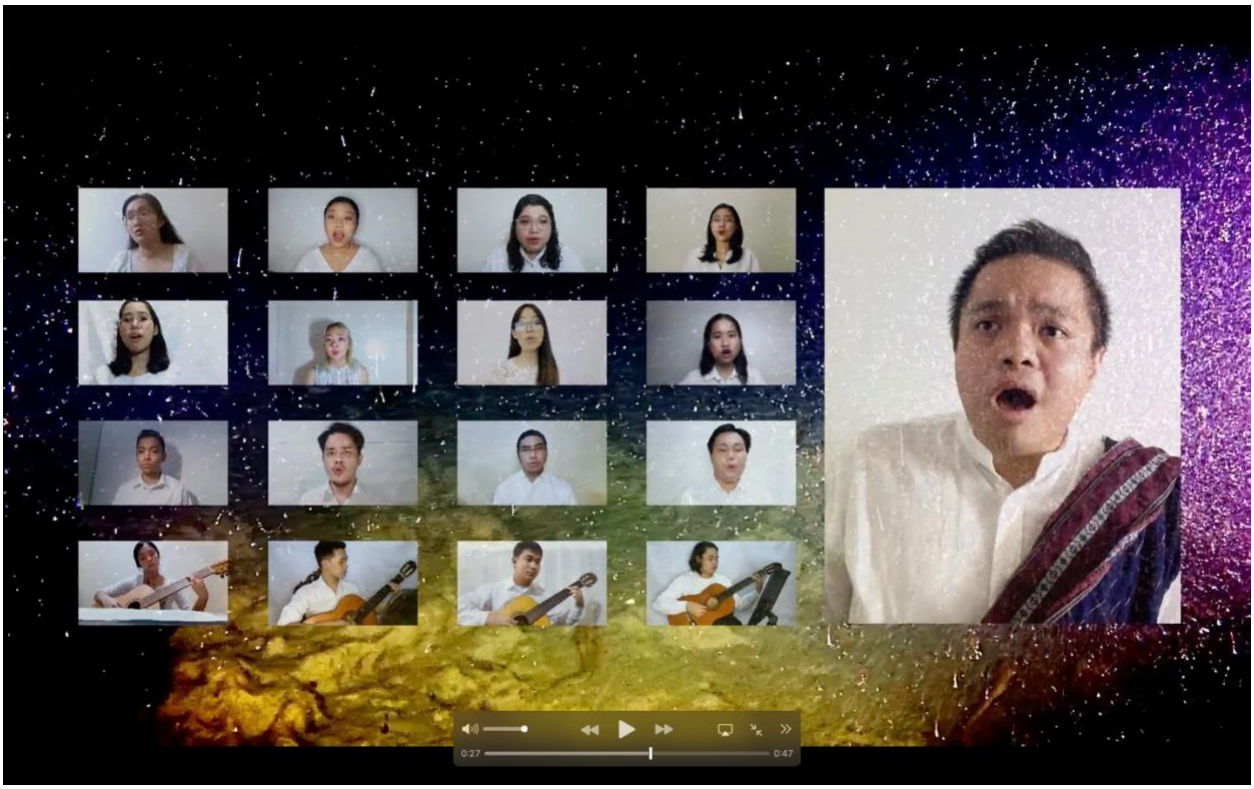
As an applied theatre practitioner and theatre director, Gupa asks "how applied theatre can deploy local disaster stories, Indigenous ecological knowledge, and embodied practices of ocean stewardship that are not given significant value in climate change conversations." Descended from an ancestry of fishers, boat makers, and caretakers of an island in the central part of the Philippines, Gupa's relationship to the Ocean is highly influential for his work.

During his residency at Ocean Networks Canada, Gupa gathered a team who together transformed scientific knowledge into poetry, music, vocal ensemble compositions, and a unique tetralogy of performances. Musical compositions were composed by Darren Vega, and performed by Thai-Hoa Le, Jeremiah Carag and Jackielyn Sentinerial along with the University of Philippines Los Baños (UPLB) Choral Ensemble and Harmonya: the String Ensemble of UPLB. These compositions were based on tanaga-style poems by poet Karla Comanda. Tanaga is one the oldest poetic forms of the Tagalogs of Luzon Island, Philippines; it is a short poem of four lines and seven syllables. Tanaga's economy of words helps one appreciate the philosophical eloquence and worldview of the poet through the figurative phrases and metaphorical renditions of human experience.



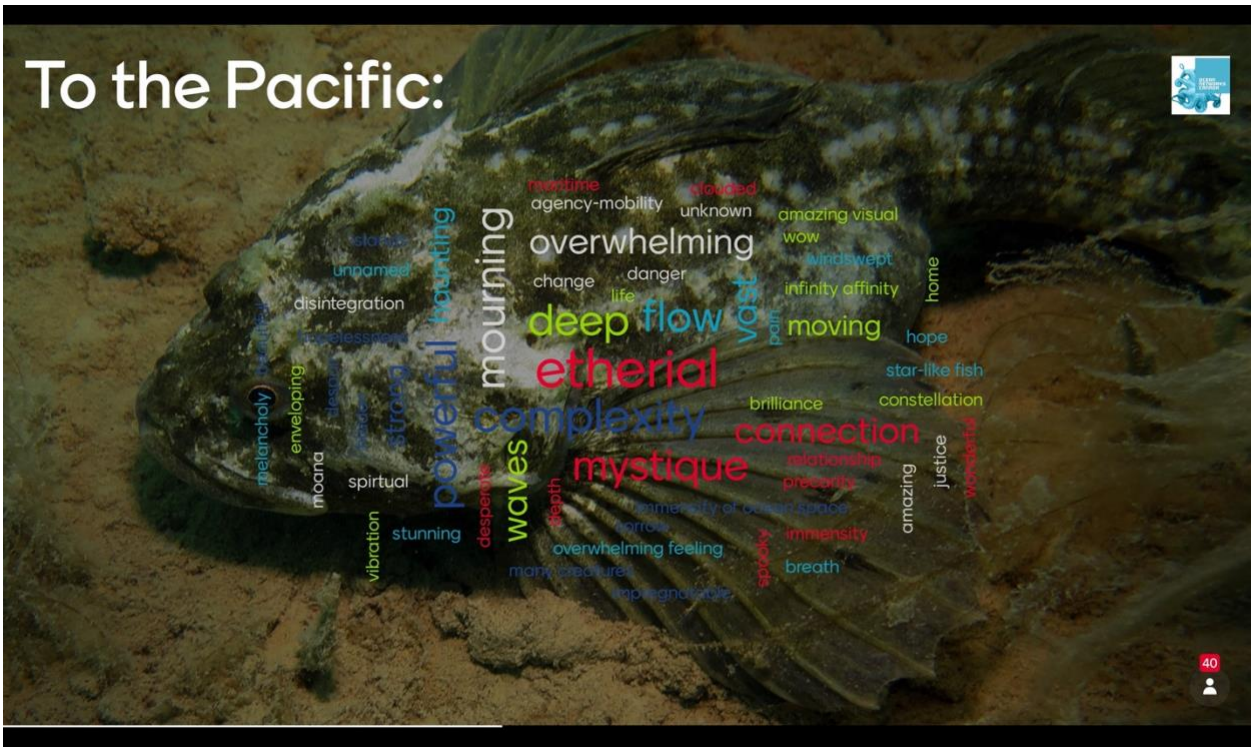
*Screen capture from Corals Crawl video, 2021*

All four recorded videos were created during the global COVID-19 pandemic by combining individual recordings of each singer and musician, most recorded at home on mobile phone. This was one of four performances shared to an international audience during a November 2021 live event titled *Gossip with Whales: Exploring Ocean Science through Applied Theatre*. This event was co-hosted by Ocean Networks Canada, the University of Victoria Faculty of Fine Arts and the #VirtualBlueDecade initiative.



*Screen capture from To the Pacific video, 2021.*

During the live event, members of the audience were invited to reflect back to Gupa and collaborators with perceptions and feelings evoked while listening to each composition. The following word cloud is one of the four that were generated. This mode of audience engagement helps extend perspectives on relationality beyond the art-science and artist-artist confines, by breaking the “4th wall” between artists and viewing audience, allowing them to become active participants in the discourse.




*Audience-contributed word cloud generated while viewing To the Pacific, November 2021.*

## Performance Credits

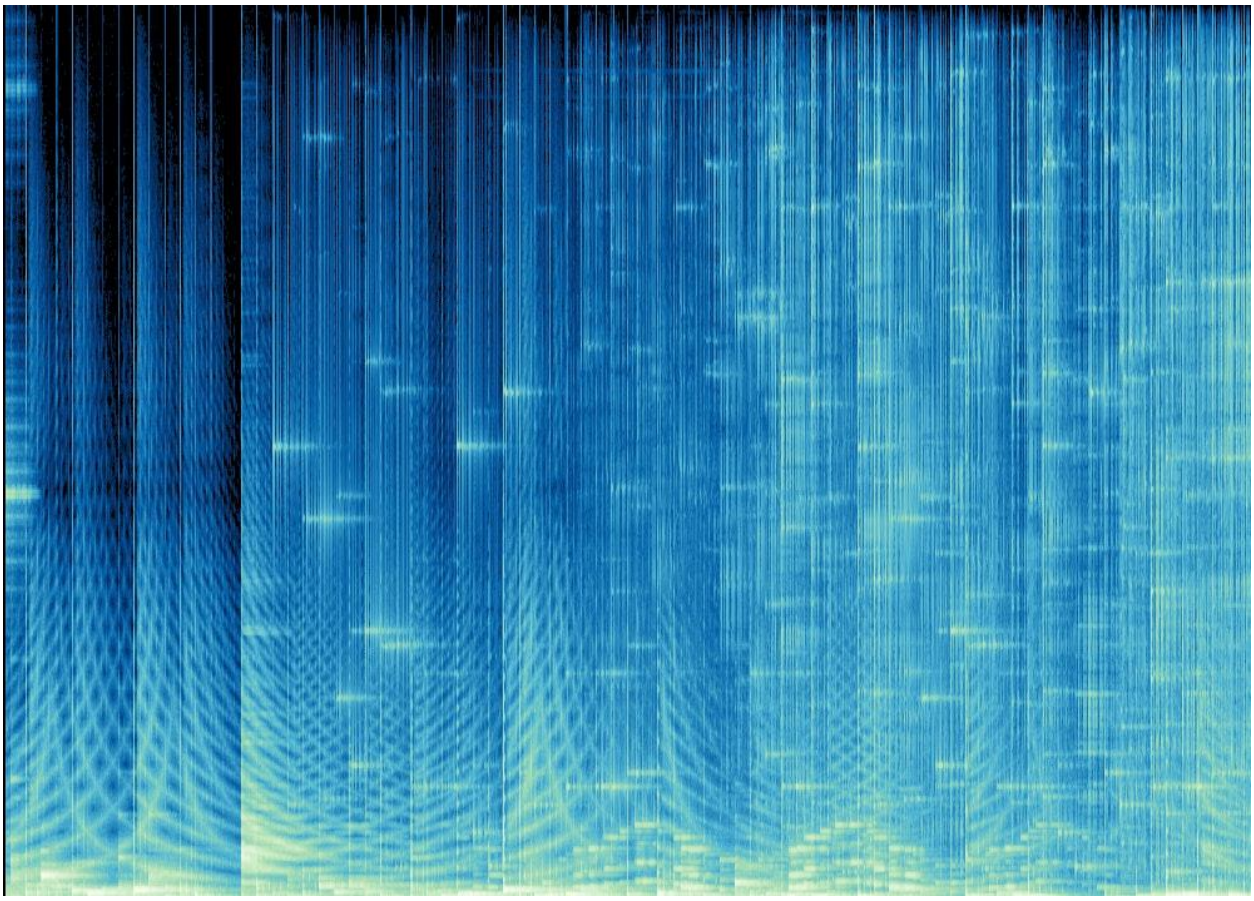
Soloists: Jackielyn Sentinerial, chanter; Thai-Hoa Le, baritone; Jeremiah Carag, tenor
UPLB Choral Ensemble director: Roijin Suarez
Harmonya String Ensemble musical director: Darren Vega
Theatre director: Dennis Gupa
Audio/Video editors: Darren Vega, Roijin Suarez, Ivan Ulgado, Stud Neil Jader, Caitlin Vea Noroña, Jeremiah Isabelle Filio, Earl Joseph Fria
Background Video footage: Ocean Networks Canada

# Jol Thoms—Artist, Sound Designer, Researcher

Jol Thoms was not a direct participant in the Ocean Networks Canada Art Residency. Instead, Thoms collaborated with Ocean Networks Canada and the Technical University of Munich's 'SFB1258: Neutrino and Dark Matter Group' to develop *Radio Amnion: Sonic Transmissions of Care* in Oceanic Space. Radio Amnion is a "networked sound sculpture and calibration system that invites artists, musicians, composers, poets, and others to develop new sonic compositions - voicings and soundings of love, care, appreciation and gratitude specifically to and for the more-than-human realms of this unique Ocean planet." Via a test installation for the proposed P-ONE neutrino telescope at the NEPTUNE Observatory's Cascadia Basin node – 300 kms from shores of Vancouver Island and 2.6 kms deep, these compositions are transmitted during each full moon, thereby "relaying new artists composition into and for the water—sending artistic sensibilities into the vast hydrological cycles of Earth. Deep in the celestial waters that meet deep space, Radio Amnion irrigates 'connection' and 'relation' between disciplines, practices, and ways of knowing just in the same way that a telescope at the bottom of the sea reveals connection and relation to the vast distances and bodies of cosmos".


*Jol Thoms, 2021: Radio Amnion installation housed within a glass sphere. This audio module was integrated into a test mooring deployed to Cascadia Basin in 2020 and transmits artists sounds of care for the Oceans during each full moon.*

One pillar of Thoms's practice as an artist is through research and fieldwork in remote 'landscape-laboratories' where environmental stewardship and the domain of new experimental physics observatories cross and mutate one another. He works often in the perceptual edges of dark matter and neutrino physics and their 'planetary scale' sensing infrastructures embedded in mountains, ice shelves, lakes and oceans. For Thoms, Landscape-Laboratories are sites where planetary features like deserts or bodies of water—these historically sacred and knowing bodies—meet vast institutional and technological assemblages to create new forms of knowing and observing the measurable (but imperceptible) universe.

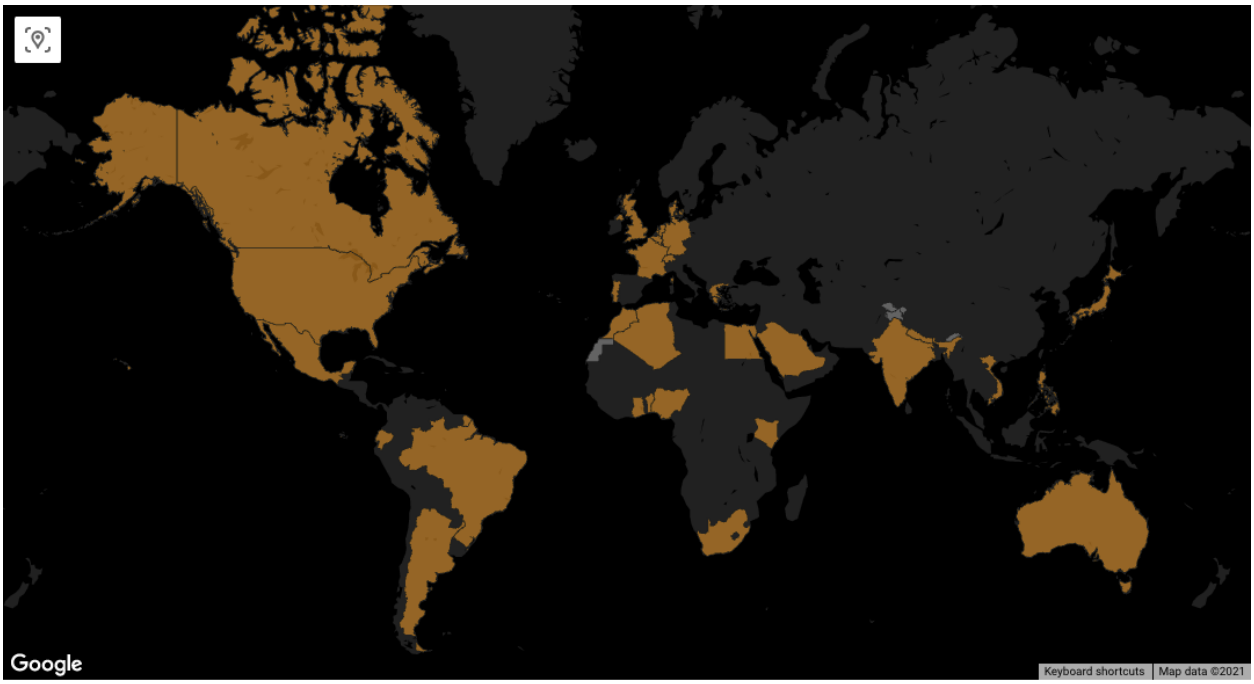


*Samuel Hertz, 2021: Mirror 2, from the series Four Aquatic Mirroring Devices by Samuel Hertz. The accompanying musical compositions were transmitted to the deep ocean at Cascadia Basin via the Radio Amnion installation in September 2021. Hertz "imagines this relation to water, across bodies, sound and light…. [The] four mirrors offer reflective and refractive ways to understand more-than-physical relationships within and among water, within and among parts that are whole, or wholes which appear to slide apart."*

# Surprising Benefits

## Far-flung Engagement

The AiR program has attracted interest and audiences far exceeding expectations. One measure is participation rates, the ratio of participants to registrants, for a pair of art-science live events (59%) compared to a series of ocean science webinars (39%) we hosted. The broad geographic participation was also surprising. Participants in these two art-science live events joined from 34 countries on five continents (see map).




*Participants in two live virtual art-science events joined from Algeria, Argentina, Australia, Barbados, Belgium, Benin, Brazil, Canada, Denmark, Ecuador, Egypt, France, French Guiana, Germany, Ghana, Greece, Hong Kong, India, Japan, Kenya, Mexico, Morocco, Nepal, Netherlands, Nigeria, Philippines, Portugal, Saudi Arabia, South Africa, Switzerland, United Kingdom, United States, and Vietnam.*

## New Perspectives

Artists can offer different perspectives on scientific questions, which may help researchers think about their work in new ways. The artist can challenge the scientist to step beyond deterministic approaches to problem solving, by as Hash suggests, “making space for love, community, care, resilience, growth and support.” This may include the intentional creation of experiential “spaces for viewers to consider their own connections to issues,” where there is an opening for viewers to come to their own conclusions.

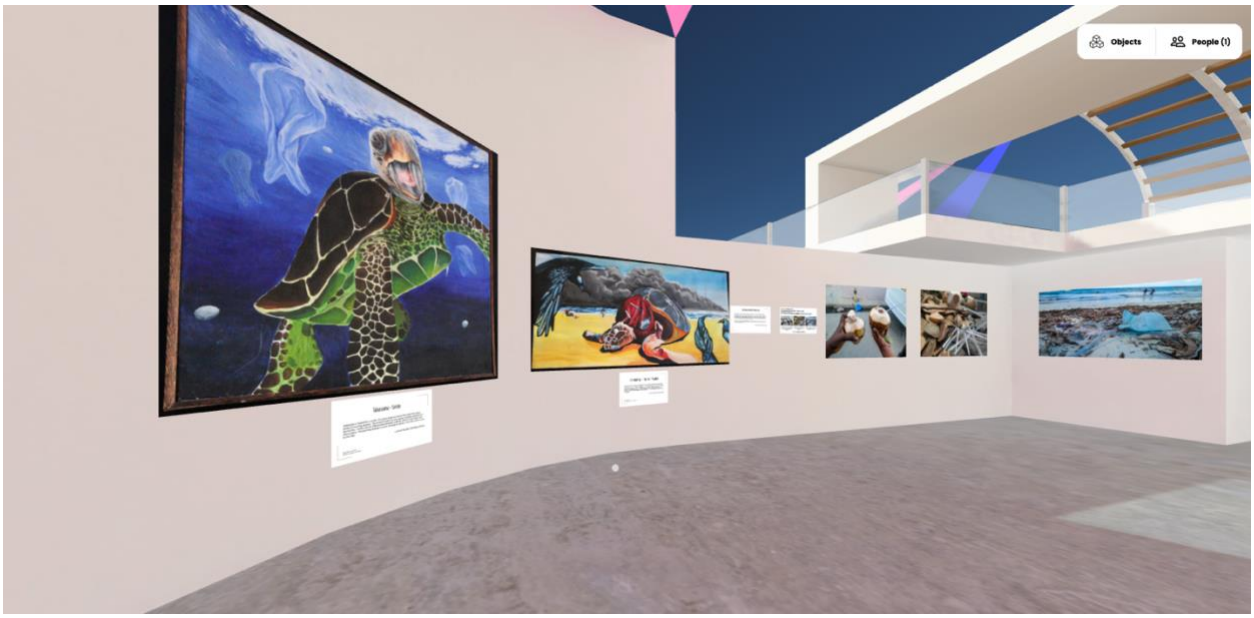
Thoms explores the relations between landscapes, “like ice shelves, deserts, lakes, mountains,” ocean abyssal plains and scientific sensing infrastructures embedded in landscapes for the construction of new knowledge. Through his artistic explorations, Thoms suggests to scientists that “These types of sites are generative for thinking about the implications of quantum physics for our ideas of society.” Thoms works “with sites as modes of thought and as places where nature itself is explicitly lively, knowing and informative.”

*Exhibit viewers listen to and watch G24|0vßß in Logics of Sense 1: Investigations, an exhibition at Blackwood Gallery at the University of Toronto Mississauga, 2019. Photo: Toni Hafkensheid.*

## New Collaborations

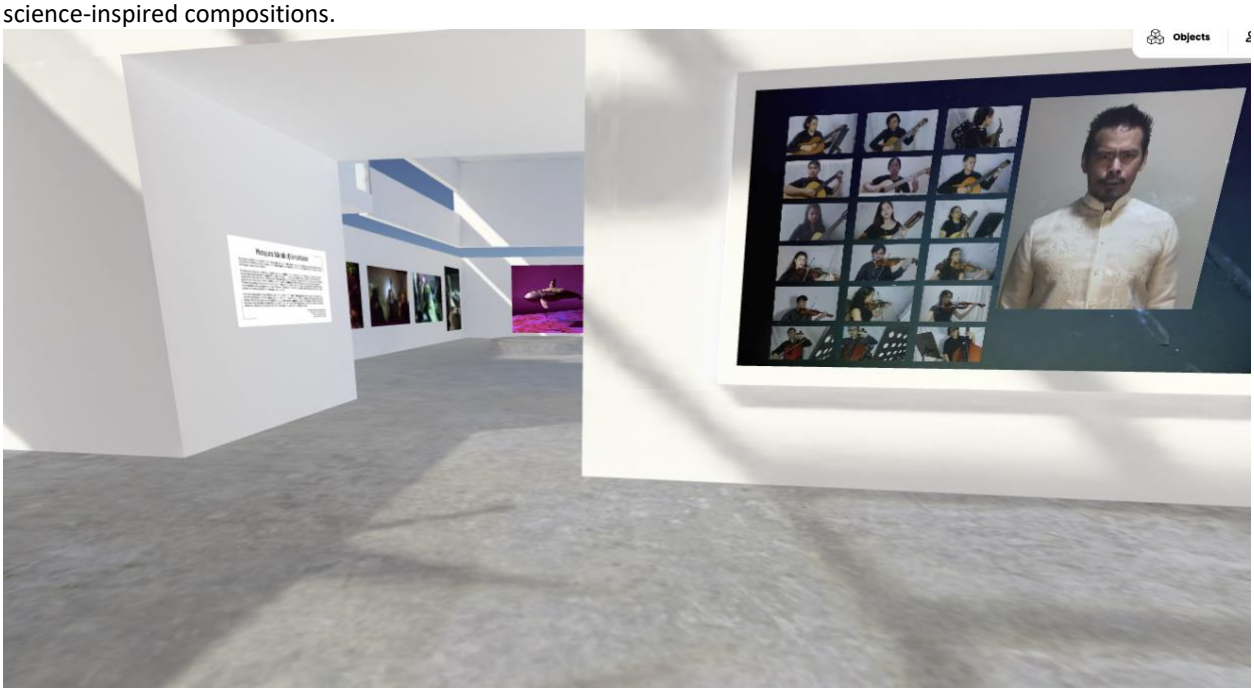
Since establishing the AiR program, numerous opportunities have unfolded for ONC and the University of Victoria Faculty of Fine Arts to engage in multi- and transdisciplinary research. This began with a series of wide-ranging discussions among faculty members and students in several science departments and across the breadth of arts disciplines, including visual arts, music, theatre, dance and writing. Multifaceted teams explored ideas for a possible future Art-Science Co-laboratory. A diversity of disciplinarians also collaborated on new research initiatives, such as a collaborative art project that gathered scientists and technologists to create threads of linked art pieces relating to the scientific theme of hypoxia in the coastal Northeastern Pacific. (See *SY45E-0811 - Developing Empathy and Embracing Multiple Ways of Knowing about Ocean Science through a Participatory Art Process*.)

The global audience attracted to our Art-Science live event included Caroline Ngorobi, the director of *Jukwaa Arts*, an initiative based in Mombasa Kenya that engages young artists to create works promoting ocean conservation. As an outcome, they met virtually with the author to learn more about ocean science. Subsequently, building on this newly acquired knowledge, they prepared visual and performance art pieces that were shared in multiple venues around Mombasa during a week-long event called the Bahari Huru Festival. As part of this festival, ONC and *#VirtualBlueDecade*hosted a live online event featuring talks by each of the Jukwaa Arts artists. Their work was later incorporated into a virtual art gallery shared during the UNFCCC Conference of Parties (COP) 26.




*Screenshot of the Jukwaa Arts "hall" in the virtual art gallery shared during COP 26. At left are two paintings by Yona Mudibo; at right are three photos by Zainab Mejja Adam.*

The Gupa residency sparked collaboration of a different kind, as he gathered an international team of writers, theatre actors, composers, vocalists, musicians and musical directors to create new compositions inspired through in-depth conversations with specialists in ocean science. The resulting production, titled *Gossip with Whales: Exploring Ocean Science through Applied Theatre*, attracted support from cultural organizations that had previously not been directly engaged in art-science collaborations. Altogether, over 60 individuals, two higher-education institutions and four cultural societies contributed to the production and live events premiering these science-inspired compositions.




*Screenshot of the virtual art gallery with a performance video from Gossip with Whales (right), a video of the Resonant Disintegration installation work by Colton Hash (centre), and photos from Murupuro: Islands of Constellation, a devised play with text by Amado Arjhay Babon and performed by theatre artists from the Philippines and diasporic Filipino-Canadian communities in Canada, 2018 (left).*

As a result of the many individuals and groups involved in the AiR and related initiatives, ONC has begun to convene an Ocean Art-Science Community of Practice. It is hoped that this growing inter- and transdisciplinary community will pioneer new and unexpected pathways for exploring the Art-Science continuum.

# Looking Forward

## Institutional Support is Essential

There is a recognized need to create and support dedicated spaces for art-science collaborations to flourish instead of relying only on the organic process of accidental relationship development. However, in the UN Ocean Decade, the role of the arts is usually seen as strictly limited to the challenge of creating an "inspiring and engaging ocean". Therefore, establishing spaces for organic and authentic relationship building supported by adequate funding and resources to allow for this free exploration without the need to produce narrow predescribed outcomes is crucial.

Art-science collaborations can only flourish when organisations provide spaces and resources to support such work. This could include funding support for residency programs, administrative support for programs, and direct support to artists. The authors of this poster call upon ocean observation, art, science and technology organizations to resource Ocean ArtScience, both as a meaningful contribution to the UN Ocean Decade and as an investment in transdisciplinary research.

## Beyond Transdisciplinarity

Progressing the collective effort of carving new pathways in ocean stewardship through art-science inter- and transdisciplinary inquiry demands a new rubric for analyzing the processes of art-science collaboration. For this, we must examine the nature of inter- and transdisciplinarity labour among artists and scientists to allow new theoretical and ethical interventions in systematizing institutional collaboration.

Within this collaborative effort, a question of agency must extend from human to the ocean. Who must be part of this collaboration? This seemingly simple question becomes more complex when we consider the meaning of collaboration beyond the sphere of human agency; the question becomes an urgent call to allow more space for non-human entities to enact their narratives, ethos, and non-anthropomorphic elements in ecological sustainability.

Within this rubric arise possibilities of enabling the ocean and its creatures to speak in their own voices. Allowing such expressions to be authentic is challenging, since in our imagination, human attributions and emotions are all too easily projected onto other sentient beings and non-human life forms. If we agree that non-human agents must be part of the collaborative effort in ocean stewardship, how can we enable this? One avenue is through engaging Indigenous ecological knowledge. Indigenous communities and local elders preserve ecological values and practices that can broaden agentic participation of every entity from human to the non-humans.