



Con Brio Chamber Series

Presents

CLIMATE SOUNDSCAPES

Friday, November 18, 2022, 7:30 PM
Kunéig Hidi Northern Light United Church

Saturday, November 19, 2022, 2:00 PM
Atrium at the APK State Library, Archives and Museum

PROGRAM

Lost Ice – The Ice Has Changed

Beth Leibowitz
Olivia Lee

Sally Schlichting, flute; Karen Pallenberg, clarinet; Beth Leibowitz, bass clarinet;
Artemio Sandoval, contrabassoon; Kristin Mabry, vibraphone; John Cooper, marimba
William Todd Hunt, conductor

Boreal Rising

Ty Wolverton
Dina Abdel Fattah

Missouri Smyth, piano; Jim Noel, keyboard;
Elena Levi, Lisa Ibbas, Lindsay Clark, and Kristin Garot, violins

To'hu VaVo'hu

Rob Cohen
Vladimir Alexeev

William Todd Hunt, Clarinet; Ben Holtz, cello;
Rob Cohen, piano; Dale McFarlin, percussion

Babel 2.0

Michael Bucy
Vladimir Alexeev
Text by Guy Unzicker

Marta Lastufka, mezzo soprano; Colleen Torrence, piccolo; Sally Schlichting, flute;
Karen Pallenberg, clarinet; Artemio Sandoval, contrabassoon; Bill Paulick, French horn;
Rick Trostel, trumpet; Elena Levi, violin; Meg Rosson, viola;
Samuel Roberts, double bass; Kristin Mabry, vibraphone
Mike Bucy, conductor

INTERMISSION

Ocean's Change

1. On the shores of Lynn Canal
2. Migration
3. Bubble Net Feeding
4. Ocean's Vitality and Change

Colleen Torrence, flute; Karen Pallenberg, clarinet; Beth Leibowitz, bass clarinet; Artemio Sandoval, contrabassoon; Bill Paulick, horn; Stephen Young, tuba
William Todd Hunt, conductor

Atmosphere with Radio Occultation

A Study of Atmospheric Turbulence

Ben Holtz
Javier Fochesatto

Sally Schlichting, flute and piccolo; Jetta Whittaker, oboe; William Todd Hunt, clarinet; Stephen Young, Tuba; Elena Levi, Lisa Ibbias, Lindsay Clark, and Kristin Garot, violins; Meg Rosson, viola, Ben Holtz, cello
Mike Bucy, conductor

Glacial Pathways

William Todd Hunt
Joanna Young

Sally Schlichting and Colleen Torrence, alto flutes and piccolos;
Karen Pallenberg, clarinet; Artemio Sandoval, contrabassoon, Bill Paulick, horn;
Stephen Young, bass trombone; Meg Rosson, viola; Ben Holtz, cello;
Sam Roberts, bass; Kristin Mabry, vibraphone; John Cooper, marimba,
Mike Bucy, percussion
William Todd Hunt, conductor

Artemio Katooneh Sandoval
Heidi Pearson

A Note About this Program

How can we bring climate science to an audience in ways that reach beyond a scientific paper?

The idea for *Climate Soundscapes* came about through the challenge of this question, born out of the discomfort of a changing climate that impacts each one of us in Alaska. Music touches us in ways that the data of science cannot. With that in mind we were seeking to build bridges – bringing the science community at the University of Alaska in Fairbanks and Juneau together with the composers and musicians of Juneau in our desire to provoke thought, discussion, and action around climate change.

Our hope is that you are inspired. When we hear each other, connecting across differences, we arrive at new heights. And when we hear these sounds of our changing climate, could we each contemplate making some change, small or even large?

We are fortunate for the goodwill of so many to make this idea a reality. With gratitude for the many collaborators and hard work in bringing this concert to you here today. A special thank you to Sally Schlichting and Con Brio, the composers, the musicians, and the scientists.

—Kaja Brix, Marta Lastufka, Michael Bucy

About the Music

Lost Ice - The Ice is Changing

Beth Leibowitz and Olivia Lee

The sea ice is an essential part of Arctic ecosystems, and to the Pacific walrus they represent an important part of what makes the Arctic waters their home. The timing of sea ice formation and retreat influences the migratory behavior of walruses. Not all walruses migrate far north in the spring, but females with calves take advantage of rich summer feeding grounds in more northern waters. The predictability of migrating marine mammals have long since provided

Indigenous communities along the Bering Strait region with a stable source of food. During the spring season, the walruses migrate closer to the Alaskan coast, and by partnering with a network of community observers, we can track the timing and general patterns of the walrus spring migration in combination with satellite remote sensing of sea ice. Trends in early sea ice retreat has led to earlier walrus sightings in some areas, also has brought surprises. For instance, there were years when hunters would find mostly male walruses and few females with calves. Given a lack of satellite tracking resources, we did not know where or when most of the females migrated that year. As pack ice carrying walruses receded more quickly, hunters have also traveled longer distances by boat. While sea ice continues to influence spring migrations, the unpredictable ice conditions bring new questions about how walruses and hunters will decide on where the best place is to be during the spring migration.

In this piece, the music begins with deep pitches and a full sound representing winter sea ice. Then, in spring and summer, there is more movement, although the ice does not disappear. However, in subsequent seasonal cycles, the sound is thinner, with gaps. There is a period of dissonance for an atypical fall storm worsened by warmer ocean water. I did not try to represent each year of data but offered three or four seasonal cycles showing the overall trend. At the end of the piece, increasing silence indicates the disappearance of sea ice relied upon by both walrus and Alaska Native communities.

Boreal Rising

Ty Wolverton and Dina Abdel Fattah

Water from glacier and snow melt collect in Suicide Basin, giving it an appearance of inhaling. As a natural next step, glacial dams break releasing unsettling amounts of water as if exhaling its contents into the crevasses and subsurface chambers of the Mendenhall Glacier below. Assuredly, the increasing

amounts of water downstream break more dams resulting in a grand influx of meltwater giving rise to Mendenhall Lake's water level as Mendenhall River's velocity increases. The event described is known as Glacial Outburst Floods (GLOFs) and one of the reasons they are so devastating is that they can happen suddenly. The frequency and magnitude of outburst floods change over time, but as scientists collect more data, they can more precisely understand and predict GLOFs.

Boreal Rising begins with a 6-count introduction, less than 3 seconds, to remind us that there is no gentle lead in, and to warn us that the only time to prepare has already passed.

The pianos represent water, post-precipitation in the water cycle. Its flow is one constant direction, and never reaches stasis until all of its potential energy has been exhausted.

The violins represent all living things: The creatures of the air, the terrestrial-bound plants and animals, the humans—eccentric and non —, glaciers, and the whole earth. The violins have a dual role to play, interjecting the adaptability and reactions of those who can calmly handle outburst flooding vs. those who cannot.

The selection of pitch-class sets for this piece have been extremely scrutinized to offer the right color and conflict for each section. The colors start bright, pleasant, and thin. As the piece progresses, the colors get darker and murkier to convey water's ability to collect sediments and to depict the increasing amount of havoc it causes along its journey.

Each major section of *Boreal Rising* depicts a separate, yet similar, event that occurs during Suicide Basin's annual runoff. The Three cycles: From Suicide Basin to the Mendenhall Glacier; From the Glacier to Mendenhall Lake; From the lake to the ocean.

Each cycle begins at rest; water flow starts slowly and when enough water collects, an ice dam breaks; the influx of meltwater brings heightened awareness and warnings; stirring a full spectrum of responses; those who are aware watch, gossip, witness, hope, and gather; at last, destruction ends as water settles and the hazards of glacier outburst floods subside, for now.

The Coda: Once at ocean level, water drops its sediments; the cycle comes to a close and winter sets in.

To'hu VaVo'hu

Rob Cohen and Vladimir Alexeev

Having owned and run a record store for a dozen years back in a previous life, I am occasionally asked for guidance from friends trying to navigate the vast and sometimes confusing landscape of music available for their listening enjoyment. Folks have expressed to me that "it's just chaos out there," with too many choices, genres, styles, artists, and eras from which to choose. The CD and internet age has gifted us this particular modern pairing of the terms "Music" and "Chaos," but it's certainly not the first time these words have been used in tandem. Ten centuries ago, Gregorian chanting in parallel 5ths was as pure as it got, and the introduction of an alternate harmonizing note was chaos at best, devilry at worst. Within a few centuries it was the parallel 5th that became the strict outcast. In the Classical Era, a dominant 7th chord had primarily one purpose, which was to resolve to the tonic of the key; anything else was in the key of anarchy. Nowadays you've got dominant chords occupying most any position they please, resolution be damned. There are numerous other examples that could be cited, ultimately too overwhelming to count.

The term "To'hu VaVo'hu" is a transliteration of the Biblical Hebrew from Genesis 1:2 "(And the Earth was) Without Order, and Desolate." This was the state prior to the subsequent "Spirit of God Moving Upon the

Waters," enabling order, life, growth, and culture. For us, Divinity, Music, Mathematics, Poetry, Love.... they are ordering forces that can lift a people and a planet out of disorder and desolation. The transformation of musical practices may be annoying to some and welcome to others, but in neither case does it threaten our continued survival in a complex ecosystem. The replacement of a habitable planet can't be bought for a song, and our Scientists are here today to remind us that current trends and developments in multiple areas of research are pointing to a potential denouement from which there may be no encore, and are not merely a dramatic disruption that can be argued about later over coffee, as if they were the latest scandalous Stravinsky piece. This composition is an offering of controlled chaos; it touches upon various musical devices that at one time or another have been considered musically destabilizing, whether due to dissonance, ambiguity, unpredictability, or clashing of styles. It is woven together with a post-modern mix of hope, gravitas, ebullience, mischief, and urgency. The current chaos of Climate Change is an effect that has causes; it's not chaotic in the sense that it is sudden and inexplicable, rather than having been predicted, by many, for many years. May this little balancing-act of a piece help contribute, in it's butterfly-wing-beat of a way, to the chance of returning to a greater balance, and a trust in the processes that will help to effect that outcome.

Babel 2.0

Michael Bucy and Vladimir Alexeev

Babel 2.0 is a musical interpretation of a climate phenomenon studied by Dr. Vladimir Alexeev [UAF International Arctic Research Center] and published in the highly ranked scientific journal *Nature*. In North America and Asia, extreme cold characterized the winter of 2017–18. At the same time, the Pacific, Bering Sea and Atlantic Arctic was warm with low sea ice in early winter. The jet stream that usually divides cold Arctic air

from warm low-latitude air deviated from its normal pattern. It meandered southward over Asia and North America and poleward into the ice-free areas north of the Bering Strait. The late sea ice formation in the Bering Strait and change in the atmospheric jet stream were partially responsible for the exceptionally warm winter in Alaska.

Alexeev's research argued that the mechanism causing the interaction between low sea ice and atmospheric flow can reinforce itself (which is called positive feedback). Alexeev described a column of warm air that ascended around Nome. The column formed as warm water, and no sea ice, created the positive feedback. The feedback mechanism observed during the 2017–18 winter could recur in future years when the low sea-ice off the coast of Alaska interacts with a more wavy pattern in the atmospheric jet stream.

The music is representational and programmatic. The piece starts with the expansive imagery of the Pacific Ocean, spare and almost timeless. Flourishes in the woodwinds illustrate the hydrological systems working skyward as a column forms from the rising warm air. "Hockets" (a rapid back-and-forth of notes) between the flute/piccolo, then violin/viola, are illustrative of the feedback nature of this event; as water warms, ice retreats allowing water to warm more, etc. A motif of alarm sounds in various voices and intervals alerting the impending danger. The libretto of this piece was crafted by Guy Unzicker, a writer in Juneau and graduate of the UAS writing program. His words suggest the Tower of Babel, the ancient biblical representation of Man's god-defying hubris.

"Columns rise..." we hear at the beginning amid the rising, flourishing winds. "From the hand of Mankind" is accompanied by a rigid, mechanized cadence and the ring of the metallic vibraphone. As the piece culminates, we hear the repeated cry, "The halo breaks!" This refers to the jet stream, usually circling

the Arctic at a consistent latitude, now warped by this Babel-like tower and bringing climatic havoc as a result. "The Babel falls" is proclaimed as the piece ends in a sense of broken collapse.

I loved working with the instrumentation in this piece. The cold, ethereal quality of the vibraphone representing the high atmosphere as well as the sea ice, the winds and their naturally "windy" gyrations and flourishes, the bass and contrabassoon with their deep grounding, the strings' persistent time measuring, and the mezzo soprano's narration above it all.

Ocean's Change

Artemio *Katooneh* Sandoval and Heidi Pearson

The piece is composed of four short, continuous movements that represent aspects of humpback whale habitat and behavior and sheds light on how climate change is anticipated to affect their way of life. The beginning sets the scene along the shores of Lynn Canal - back draped by the mighty Chilkat Range. The research of Heidi Pearson, marine biology professor at the University of Alaska Southeast, shows that some of the same whales return to this area year after year, forming long-term "friendships." In the music, the crashing waves on the shore work up to a crescendo that gives way to the Migration section.

Humpback whales typically migrate between high latitude foraging areas and warm tropical breeding grounds. The research of scientists tells us that humpback migration patterns may shift further poleward. This could be the result of climate-driven prey range shift, and if forecasted sea surface temperatures in humpback breeding grounds get above their tolerance limit.

In the piece, this idea of range shift is represented throughout the Migration movement as an ascending line that starts in the lowest instruments that reaches a peak and descends down to a trough- this moving

line repeats this cycle getting into higher registers and higher instruments as time goes on.

The material in the third movement is a musical representation of the bubble nets that humpbacks use to catch prey. The instruments imitate and harmonize around the pitch of the humpback bubble net call. The last movement focuses on how climate change is impacting the marine ecosystem as a whole and conveys the vitality and sheer diversity of sea life.

Summing up the sentiments surrounding climate change, the piece ends with the emotions of dread and of hope. While climate change is affecting humpback whales and will continue to do so, the work of scientists, such as Heidi Pearson, reveals that humpbacks and other whales may help to stimulate carbon sequestration in the ocean, possibly helping in our fight against climate change.

The audio recordings used are credited to Kathy Turco, the Monterey Bay Aquarium Research Institute, and Artemio Sandoval.

Atmosphere with Radio Occultation

A Study of Atmospheric Turbulence
Ben Holtz and Javier Fochesatto

In our struggle with climate change, it is imperative we develop an intimate and deeply analytical understanding of the atmosphere around us. *Atmosphere with Radio Occultation* is inspired by two avenues of research by Dr. Javier Fochesatto [UAF Department of Atmospheric Sciences].

Techniques developed to accurately detect mirages can improve our ability to monitor climate change. As the Arctic warms, the conditions for high latitude mirages shift and we see fewer mirages. Our ability to detect mirages through satellite GPS radio signals allows us to study changes in Arctic atmospheric temperatures. Another influence is Fochesatto's search for patterns in the way turbulence arises from air flowing over subarctic boreal forests.

The analysis of the surface energy balance in the subarctic Alaskan interior is critical for understanding current conditions, and for predicting future trends in surface biogeochemical and hydrological processes, water availability, and energy transfer. The boreal forest is coupled directly to its local environment through sensible and latent heat fluxes, and surface albedo; it is also coupled to global climate through the fluxes of carbon dioxide and methane.

Analyzing these patterns is critical for understanding surface-atmosphere interactions. These turbulent vortices generated by the boreal forest tell us much about changes in atmospheric temperature and about forest composition in a warming Arctic.

This piece of music is certainly a loose 'artist's interpretation' ... you can 'hear' the patterns that air flow features may make as the wind whisks through the subarctic boreal forests. Hear the signal from a high-up satellite distorted as it travels through the air. As you listen to Atmosphere with Radio Occultation, please take a moment of internal respect for the deeply complex, challenging, meticulous work performed by the scientific community.

Glacial Pathways

William Todd Hunt and Joanna Young

The title *Glacial Pathways* has three distinct meanings:

1. The pathways traced by glacial meltwater and the nutrient-rich sediment within it, from its source in the high mountains to its outflow at the sea.
2. A nod to the 'representative concentration pathways' (RCPs) which are the scenarios scientists use to forecast future change of glaciers.
3. The two distinct paths this nutrient-carrying system can take in the future - one

of continual degradation, and one of rebirth and renewal.

Glacial Pathways attempts to lend a musical representation to the glacial system that carries nutrients eroded from the mountains out to sea and positively influences life through the river, the estuary, and beyond. If this system fails, a large element of the ecosystem that enriches all life in the area will irreparably change.

All of the instruments have been assigned at least one specific aspect of this musical incarnation of scientific research. The glacial ice is represented at the beginning — its stillness and brittle blues captured with the high pitches of the strings and percussion, while the movement of the glacier is the extremely low grinding sounds of the contrabassoon, horn, and bass trombone. The first two short drum outbursts signify chunks of the glacier calving, and the undulating flutes and clarinet describe the meltwater cascading off of the ice.

The star of the drama are the nutrients contained within glacially-sourced meltwater, whose presence are needed for a healthy ecosystem. Represented by the high clarinet, string harmonics, and high percussion, a descending four-note tune gradually forms; this becomes the melodic backbone of the piece.

After a large calving event, ice, meltwater, and nutrients together rush downstream, carried by a drumbeat that describes the fast-moving river. The supply of nutrients stays plentiful at first but begins to slow to a full stop. Then we hear the beginning of the second possible pathway: the nutrient tune inverted, heading upwards, signaling the rebirth of the system. While the recovery takes some time, the piece ends with a healthy system in full swing with all trouble a distant memory.

Acknowledgements

We are honored to present this performance on the unceded Indigenous territory of the Áak'w Kwáan, who have lived and thrived in cultural richness reaching back thousands of years on Lingít Aaní. We respect and are grateful for the stewardship and musical traditions of the Lingít people who have danced, sung, and drummed on the ground beneath us. May your music be everlasting. Gunałchéesh.

Many thanks to our program partners and season sponsors and supporters: The Juneau Composers Consortium, University of Alaska, International Arctic Research Center, Amalga Distillery, 350 Juneau, The Juneau Arts and Humanities Council, the City and Borough of Juneau, and the Friends of the State Library, Archives, and Museum.

A wealth of gratitude to all the musicians for their incredible hard work and dedication to making this program happen. A very extra special thanks to Kaja Brix, Heather McFarland, Mike Bucy and Todd Hunt for their valuable support in pulling this project off. Additional thanks to Thrush Hill Music, TMHS Band and Brian Van Kirk for rehearsal space and instruments, and the stage management expertise of Sue Schrader and her assistants, Anne Sutton and Dick Hoffman. Finally, I want to thank you, our audience. You are an essential and beloved part of every performance.

About Con Brio Chamber Series

Con Brio Chamber Series was formed in 2016 by Juneau flutist, Sally Schlichting, to broaden the reach of chamber music in Juneau. Con Brio aims to provide musicians with a forum to collaborate, create, perform, and share both their love and the breadth of chamber music to enrich our community and capital city. Since 2016, Con Brio has been proud to present 14 unique programs featuring local and guest artists and a wide range of chamber repertoire.

Upcoming Events

December 10 and 11 at JDHS: The Juneau Symphony performs Holiday Cheer. Add Celebrate the season with the Juneau Symphony, Sitka Fine Arts Camp's Holiday Brass, and Vox Borealis! Tickets available at www.juneausymphony.org.

January 28 and 29 at JDHS: The Juneau Symphony performs Transformations. Experience the deep mystery of change and escape the cold with this radiant concert of Juneau premieres including Beethoven's glowing Sixth Symphony, Strauss' glorious Death and Transfiguration, and the delightful "Dance of Tumblers" from Rimsky-Korsakov's The Snow Maiden. www.juneausymphony.org

February 11, 2pm at the Atrium at the APK: Con Brio Chamber Series presents Music For Flute- works by Bach, Verdi, Takemitsu, and Mozart. A recital with flutist Sally Schlichting, joined by Sue Kazama on piano, and Elena Levi, violin, Meg Rosson, viola, and Ben Holtz, cello. Admission is pay-as-you-can. conbriochamberseries@gmail.com.