ABOUT THE COVER ART

Get ready for the end of our world as we know it. How can we not despair at such a prospect? Roll up the sleeves on imagination, compassion, and science and let’s get ready for our new world. The poster for Gustavus Adolphus College’s Nobel Conference “Climate Changed” illustrates some of the solutions for living in a changed climate, as well as the attendant reality of mass migrations.

Sharon Stevenson, Designer
I love being in nature, whether it is time at our family cabin in northern Minnesota, a walk in the Linnaeus Arboretum at Gustavus, or the trip I took this summer with my husband to camp and hike in the western national parks.

Like many people, I find nature to be a source of renewal, a connection to the Earth and the Divine, and a reminder of the interconnectedness of creation. Also, like many people, I am concerned about our world.

As scientific evidence of human-caused climate change is mounting, members of the Gustavus community are working to understand this crisis and its local and global effects. On campus, several groups are working on this great challenge of our time. For example, the President’s Environmental Sustainability Council and the student-led Environmental Action Coalition are leading campus initiatives to reduce our campus energy use by 25 percent in the next five years and make improvements in recycling and waste management with the goal of becoming a zero-waste campus, with 90 percent of solid waste diverted from landfills and incineration and responsible disposal of the remainder. We are committed to working as individuals and as a college community to change our awareness, attitude, and actions.

It is a pleasure to welcome you to campus to listen, discuss, and learn more about our changing climate. May you leave better informed and inspired, because the time to act is now.

Sincerely,

Rebecca M. Bergman
President, Gustavus Adolphus College
The dramatic increase in anthropogenic (human-caused) greenhouse gases in our atmosphere has brought about the current global warming along with a host of other climate, hydrologic, ecologic, and geologic effects—a set of effects so varied and dramatic that some have called the package “global weirding.” The challenges of climate change are daunting; the progress we’ve made in addressing them infuriatingly modest. Climate change will define humanity for this century, if not far longer.

In one sense, climate change is a tractable problem. We know the cause: raised levels of atmospheric greenhouse gases. We know their sources: human use of fossil fuels (oil, coal, natural gas), modern agricultural practices, and deforestation. And we have a straightforward solution that will more or less solve the problem: stop using fossil fuels immediately.

Why, then, are global greenhouse gas emissions only increasing? Because greenhouse gases are intimately woven into our modern lives. Our current systems of economics and politics, our livelihoods and lifestyles, our wealth and affluence all rely on fossil fuels, modern agriculture, and land uses such as deforestation. We can’t simply stop fossil fuel use on a dime.

Thus, we must confront a host of questions and challenges that lie at the intersection of science, society, and ethics: What will our future climate be like and will it be hospitable to people and other life forms? What will a fossil-free economy look like and how do we transition to it? What kinds of social and political institutions must we create to curb anthropogenic greenhouse gases?

What role can and should new technologies play in managing a new global climate? How do we respond to climate change while also alleviating poverty? Whose voices get heard and whose are marginalized?

We are so pleased you are joining us on this journey of learning, questioning, and dialogue. We hope this Nobel Conference inspires us to care, to take action, and to contribute to building a better world.

Anna Versluis, Nobel Conference 55 Chair
Lisa Heldke, Nobel Conference Director
Throughout Earth’s 4.5 billion year history, there is ample evidence that our climate has experienced large fluctuations. Approximately 710 and again 640 million years ago, the planet experienced a pair of glaciations so severe that even tropical oceans were frozen over, periods known as “Snowball Earth,” where the global average temperature may have been 12°C (22°F) cooler than at present.

Meanwhile, during the “Early Eocene Climate Optimum” between 54 and 48 million years ago, the planet was anywhere from 9-14°C (16-25°F) warmer and completely ice free. As we’ve come to understand today’s threat of global climate change, it is natural to wonder what makes this event different, and how we know that humans are primarily responsible.

Natural Fluctuations

Our global climate is controlled by the balance of energy that enters and exits Earth’s atmosphere. When there is a reduction in incoming energy or an increase in outgoing energy, Earth’s average temperature decreases. Conversely, when incoming energy increases or outgoing energy decreases, Earth’s atmosphere will warm. Through decades of research, scientists have come to understand the processes that can drive global climate change. Natural fluctuations in the sun’s energy output will increase or decrease the amount of incoming energy. Such fluctuations occur over a range of time scales, from the 11-year solar cycle that has a modest (but measurable) influence on Earth’s temperature, to cycles that occur over tens of millions of years that have a substantial climate impact. The so-called Little Ice Age, a period between 1300-1850 AD marked by a 0.6°C (1.1°F) decrease in the Northern Hemisphere temperature was caused, in part, by one such fluctuation. Changes in the transparency of the Earth’s atmosphere due to volcanic eruptions or asteroid impacts are also responsible for significant and abrupt climate change events. An asteroid strike off the coast of what is now Mexico about 66 million years ago sent so much dust into the atmosphere that dusk-like conditions may have lasted for years, killing off nearly 80 percent of life on Earth, including the dinosaurs.

Another key driver of global climate change involves fluctuations in Earth’s orbit around the sun, known as Milankovitch Cycles after the Serbian mathematician who first calculated them. Changes in the shape of Earth’s orbit around the sun (eccentricity), the tilt of Earth’s axis (obliquity), and the time of year in which the Earth is closest to the sun (precession) all work in concert to cause significant climate variation, and are the primary drivers of the Ice Ages that occur roughly every 100,000 years, leaving much of Minnesota under thousands of feet of ice. The particular orientation of Earth’s continents and mountain ranges affects the magnitude of these climate fluctuations, which are further enhanced by various feedback processes such as variations in the proportion of solar radiation reflected back to space due to changes in global snow and ice coverage. Other climate fluctuations can be driven by changes in ocean and atmospheric circulation patterns, though these typically operate at time scales of years to decades and have a modest impact on the overall average temperature of the planet.

Greenhouse Effect

Changes in the amount of energy that leaves Earth’s atmosphere are largely driven by fluctuations in the atmospheric concentration of greenhouse gases, including carbon dioxide (CO₂) and methane (CH₄). To understand why this is so, it is necessary to understand the Greenhouse Effect. All objects emit radiation, but the wavelength of the radiation is controlled by the temperature of the object. Hotter objects (which have more energy), emit radiation at shorter wavelengths, while cooler objects emit radiation at longer wavelengths. Thus the sun (average temperature around 5,600°C/10,000°F) emits radiation at shorter wavelengths than does the Earth (average temperature 15°C/59°F). Greenhouse gases are able to effectively absorb radiation at certain wavelengths, but are transparent to radiation at other wavelengths. Crucially, such gases are generally transparent to incoming solar radiation (shortwave radiation) but are able to absorb a considerable amount of radiation at wavelengths emitted by Earth (longwave radiation). When these gases absorb this energy in our atmosphere, some of that energy is then emitted back to Earth, thus warming our lower atmosphere to a degree that otherwise would not be possible due to our distance from the sun. The Greenhouse Effect is good; without it the global mean temperature would be around -18°C (0°F) and the evolution of life on earth would have been much different. However, as the concentration of greenhouse gases change, the amount of longwave radiation absorbed by the atmosphere will change: lower concentrations result in a cooler climate, increased concentrations—an enhanced Greenhouse Effect—result in a warmer climate.

Natural fluctuations in greenhouse gas concentrations have occurred throughout much of Earth’s history. A long-term increase in global volcanic activity is one process that, over millions of years, can significantly increase greenhouse gas concentrations and drive global warming. Meanwhile, various tectonic processes such as mountain building result in an increase in the chemical weathering of rock, which draws carbon dioxide out of the atmosphere and leads to global cooling (again over millions of years). Natural fluctuations in greenhouse gas concentrations most often occur, however, as a feedback process linked to some other climate change forcing process, such as when seabed methane is emitted to the atmosphere as a result of an already warming ocean.

Rapid Pace of Warming

Over the past 150 years—and especially, over the past 40 years—our climate has begun warming at an exceptionally rapid pace compared to what has occurred during earlier climate change events. Decades of careful measurements show that there has been no significant increase in the amount of solar energy entering the Earth system, so the warming we have experienced must be due to a rapid decrease in the amount of energy exiting the atmosphere—an enhanced greenhouse effect. An accounting of greenhouse gas emissions clearly shows that human activities dramatically outweigh the emission of CO₂ and CH₄ from volcanic eruptions (currently, by a factor of 135), and while natural emissions of greenhouse gases are now increasing, such as through the release of CH₄ from melting Arctic permafrost, these emissions are feedback responses to the warming caused by human activities rather than the initial forcing that is trapping energy in our atmosphere. Given the long time scales at which other natural climate change processes occur, the general stability of solar energy output over the past decades, and the quantities of fossil fuels being burned by humanity, there is no remaining scientific doubt that present day climate change is being caused by us.
9 a.m.  INDIGENOUS OPENING CEREMONY

Isanti Da’ota Hok’api
Singers, Jeremiah Frazier and Joseph Moose

9:15 a.m.  PRELUDE

The Gustavus Wind Orchestra
James Patrick Miller, DMA, conductor

The Earth (after Holst)
Jun Nagao (b. 1964)

Symphonies of Gaia
Jayce Ogren (b. 1979)

9:30 a.m.  ACADEMIC PROCESSION & WELCOME

Processional  The Gustavus Wind Orchestra
John Williams (b. 1932)

Invocation  The Rev. Siri Erickson
Chaplain of the College

Welcome  Rebecca M. Bergman
President of the College

Conference Introduction
Lisa Heldke, PhD
Nobel Conference Director
Professor of Philosophy

Anna Versluis, PhD
2019 Nobel Conference Chair
Associate Professor of Geography, Environmental Studies, and Latin American, Latinx, and Caribbean Studies

10 a.m.  FIRST LECTURE

Amitav Ghosh, PhD
Novelist, historian, essayist, and author of The Great Derangement: Climate Change and the Unthinkable

A Crisis of Culture: Arts, Literature and the Humanities in the Anthropocene

Addressing climate change is a race against time, and enlisting the global citizenry to commit to sizeable action could be the most immediate problem we face in tackling climate change. How do we do that? Such a question goes far beyond the familiar realms of climate science and climate activism. Internationally renowned writer Amitav Ghosh’s latest book of nonfiction, The Great Derangement: Climate Change and the Unthinkable (2016), tackles the inaction and paralysis characterizing our response to climate change. He asks: How is climate change a global issue? How can addressing climate change be a priority for all humans? And, perhaps most surprisingly, why are humanistic thinkers, especially literary writers, reluctant to engage directly with climate change? Through his analyses of the history of scientific thought, liberal humanism, global capitalism and imperialism, Ghosh considers responses to these questions.

Consider Ghosh’s rumination on the dangerous practice of building residences close to the ocean: “It was as if...the bourgeois belief in the regularity of the world had been carried to the point of derangement”—to the point at which it is no longer risky to build your home in a place prone to flooding and gale-force winds. Ghosh connects the value of a waterfront property to a “colonial vision of the world, in which proximity to the water represents power and security, mastery and conquest...incorporated into the very foundations of middle-class patterns of living across the globe.” Having inherited the bourgeois belief system and the colonial mindset, Ghosh implies, we become indifferent to nature’s potential. Such “deranged” human behavior challenges us to explore how deranged interactions with nature have been normalized.

The place to look for root causes may be culture; “the climate crisis is also a crisis of culture, and thus of the imagination.” Other mechanisms that have helped to create a middle-class culture increasingly dependent on fossil fuels include a liberal humanist emphasis on the individual, which pervades the arts and humanities, and the global capitalist economy that equates products with security and happiness.

Ultimately, Ghosh writes, climate change is “the product of the totality of human actions over time...and in this sense every human being, past and present, has contributed to the present cycle of climate change.” Human beings have different roles to play; however, we all must respond to climate change. Ghosh is the author of two books of nonfiction, a collection of essays, and eight novels. His work has been translated into more than 30 languages and he holds four honorary doctorates. Among his many prizes, he is the 2018 recipient of the Inaapath Award, India’s highest literary honor—the first English-language writer to be so honored. In 2019 Foreign Policy magazine named him one of the most important global thinkers of the preceding decade. He holds a doctorate in social anthropology from the University of Oxford.

How might climate change transform our political and social institutions and shape our worldview? In his talk, Ghosh will explore these questions, drawing on Europe’s “Little Ice Age.”

Introduction
Sun Hee Lee, PhD
Associate Professor of English

This lecture will be livestreamed but not archived.
10:45 a.m.  PANEL DISCUSSION AND AUDIENCE QUESTIONS

The speakers will discuss questions about how studying climate events in history can equip us to undertake the needed changes to our social structures and our belief systems.

11:30 a.m.  LUNCH BREAK

Optional: Join a climate conversation
Head to the Lund Forum, where you can enjoy a climate-thoughtful buffet lunch and also join a discussion with other conference attendees led by Gustavus faculty and students. Tables will be labeled with discussion topics; pick a topic and pull up a chair. If you don't see a group about a topic you're interested in, make a sign and start a new group!

Climate Change Learning Lab and Sustainability Showcase
In the Lund Forum, you'll also find interactive exhibits that will give you a hands-on way to understand fundamental concepts of climate change, informational booths from non-profit organizations engaged in climate change work, and companies showcasing their sustainability efforts.

Visit “A Walk Through Minnesota’s Biomes” in the Linnaeus Arboretum
This tour, designed by students in the Spring 2019 Environmental Geography class, highlights current and future effects of climate change with a focus on Minnesota’s biomes (geographic regions featuring a particular climate and ecosystem).

12:35 p.m.  MUSICAL PRELUDE

The Gustavus Wind Symphony

City Trees
Heidi Johanna Miller, DMA, conductor

October
Michael Markowski (b. 1986)

Illumination
Eric Whitacre (b. 1970)

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HOW DO ABRUPT CHANGES IN THE CLIMATE AFFECT US?

1 p.m.  SECOND LECTURE

Richard Alley, PhD

Climate Has Always Changed, Sometimes Abruptly: More Evidence That Humans are Changing the Climate

“In many ways, ice cores are the ‘rosetta stones’ that allow development of a global network of accurately dated paleoclimatic records...” Thus does Richard Alley explain the significance of ice cores: samples drilled from an ice sheet or glacier and ranging from a few feet to two miles in length. Ice core samples store tiny bubbles of atmospheric gas—gas that tells the story of Earth’s atmosphere, and thus its climate. Two-mile-long cores can take us back as many as 800,000 years. Ice core research conducted by Alley and his colleagues in the early 1990s revealed that dramatic changes in Earth’s climate have sometimes happened in as little as a few years’ time—a phenomenon referred to as “abrupt climate change.” Alley explains those findings with clarity and enthusiasm in his book The Two-Mile Time Machine.

Alley, the Evan Pugh University Professor of Geosciences in the Department of Geosciences and the Earth and Environmental Systems Institute at Pennsylvania State University, studies climate reconstructions using polar ice cores, and also the dynamics of polar ice sheets—the motion within large sheets of ice such as those found in Antarctica. He is one of the world’s foremost experts on abrupt climate change. In the past decade, Alley has focused considerable energy on understanding the potential responses to climate change of the Antarctic and Greenlandic ice sheets, and the implications of those responses for sea level rise.

At the same time that Alley was leading us to new understandings about the dynamics of abrupt climate change in Earth’s past (paleoclimate science), present-day anthropogenic climate change was beginning to be more widely understood by the public. As a result, Alley’s work became increasingly visible outside the scientific community. This led to him being called upon to testify before Congressional committees as an expert witness on climate change on several occasions. Alley is among today’s most dynamic and recognizable voices on the science of global climate. In addition to his regular work for PBS, National Public Radio, and the New York Times, you might find him discussing the drivers behind the most recent “polar vortex” on CNN; explaining to members of the United States Congress how variations in Earth’s orbit drive ice ages; or co-hosting Earth: The Operators’ Manual, a PBS miniseries on sustainability. Beloved by students for his enthusiasm and approachability, Alley has received numerous awards from Penn State for his teaching excellence.

Alley earned his doctorate in geology from the University of Wisconsin before joining the faculty at Penn State in 1988. Alley is a fellow of the American Association for the Advancement of Science and the American Academy of Arts and Sciences, and has been elected to both the National Academy of Sciences (U.S.) and the Royal Society (U.K.). He has been a contributor to the Nobel Peace Prize-winning Intergovernmental Panel on Climate Change (IPCC) assessment process since 1992.

How do abrupt changes in the climate affect us? How does the study of the climates of past geological ages (paleoclimates) help us to understand present climate changes? Alley will explore these questions in his lecture.

Introduction

Jeff La Frenierre, PhD
Assistant Professor of Geography and Environmental Studies
Much of Liverman's work asks, how we can ameliorate poverty and develop sustainably while focusing on the impacts of Earth warming 1.5˚C, captured significant attention for its message that we have only until 2030 to implement major reductions in greenhouse gas emissions if we can't escape the heat. Coastal erosion and melting permafrost force relocation of coastal towns in northern Alaska. Disappearing glaciers in the Andes and Himalayas threaten the water source for millions living nearby. These events show not only the impacts of climate change, but also the unequal distribution of its effects. Those who are poor, elderly, of a minority race or ethnicity, or otherwise disadvantaged are more vulnerable to climate change than those of relative privilege. The wealthy in developed countries may be more responsible for climate change but suffer from those changes less than the poor in developing nations.

Assessing this unfairness—determining the disproportionate effects of climate change—is the study of climate vulnerability, “a condition of people and places that increases their chances of being harmed by the climate.” Its study places climate science in interaction with the study of geography, economics, politics, poverty, race, gender, and occupation. Diana Liverman studies climate vulnerability and adaptation. She brings the tools of a social scientist to her collaborations with specialists from multiple disciplines. Liverman has sought to understand who is most vulnerable to climate change, whether better climate information can reduce suffering and economic loss, and whether we can both adapt to climate change and meet sustainable development goals.

Liverman's study of Tucson, for instance, suggested that parts of the city with lower incomes were more vulnerable to summer heat, poorly insulated homes with little vegetation nearby made these homes hotter, forcing inhabitants to choose between air conditioning and necessities such as food. Occupation can also increase vulnerability when it requires working outdoors. Increasing temperatures thus result in an increased mortality risk for those without the option of living in cooler or shaded areas: poor people, the undocumented, farmworkers, Latinx, and women.

Much of Liverman's work asks, how we can ameliorate poverty and develop sustainably while adapting to and limiting climate change? Her contribution to the 2018 special report from the Intergovernmental Panel on Climate Change (IPCC) illustrates her approach. This report, which focused on the impacts of Earth warming 1.5˚C, captured significant attention for its message that we have only until 2030 to implement major reductions in greenhouse gas emissions if we are to avoid catastrophic warming. Liverman's major contribution to this report, Sustainable Development, Poverty Eradication, and Reducing Inequalities, found that a warming climate makes sustainable development more difficult, but that reducing poverty through sustainable development also reduces vulnerability to climate changes.

Liverman is a lead author on large-scale climate assessments for the National Research Council and the Nobel Peace Prize-winning IPCC. She has also produced numerous case studies, analyses, and theoretical papers on climate vulnerability, adaptation, food security, and sustainable development.

Liverman holds a doctorate in geography from the University of California, Los Angeles. She is Regents Professor of Geography and Development at the University of Arizona. Developing societies face a “megachallenge” – addressing the risks to their most vulnerable populations that are presented by climate change, and meeting the goals of developing sustainably. Liverman will use case studies to explore these sometimes-conflicting challenges.

**Introduction**

**Jon Grinnell, PhD**
Associate Professor of Biology and Francis Uhler Chair

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**2:30 p.m.  PANEL DISCUSSION AND AUDIENCE QUESTIONS**

The speakers will discuss abrupt changes in the climate system and the “megachallenge” of confronting climate risks while achieving sustainable development goals.

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**3:30 p.m.  CLIMATE CHANGE WORKSHOPS**

No ticket required. These events will not be livestreamed.

1. **Climate Change Research – Behind the Curtain**
   **Facilitator:** Jeff La Frenierre, Assistant Professor of Geography and Environmental Studies
   **Location:** Beck Hall Room 303
   The rapid retreat of mountain glaciers is one of the most immediate and visible impacts of climate change. Based on ongoing research in Ecuador, learn why mountain glaciers are especially sensitive indicators of climate change, how glaciers in Ecuador are being impacted, and the consequences of glacier loss for nearby communities. Then, try your hand at performing climate change research by analyzing newly collected glacier data using advanced geospatial software. No previous experience necessary.

2. **How Should We Meet the Challenges of a Warming Planet?**
   **Facilitators:** Pamela Conners, Associate Professor of Communication Studies, and students from the Public Deliberation and Dialogue program
   **Location:** St. Peter Banquet Room
   Join small group conversations about how to meet the challenges of a warming planet. Participants will discuss the benefits and drawbacks of three different policy approaches for addressing a changing climate.
7. Using Artistic Techniques to Engage with Climate Change Data  
**Facilitator:** Bailey Hilgren '17, Graduate Student in musicology and environmental studies  
**Location:** Beck Hall Room 113  
Traditional methods of disseminating information about climate change are important for continued scientific progress but can be inaccessible and rarely communicate the important emotional and cultural dimensions of environmental issues. The arts, on the other hand, excel at addressing emotions and culture but can benefit from grounding in scientific findings. In this workshop, participants will explore ways to combine communication methods traditionally used separately in the arts or sciences through the use of data sonification, visualization, and storytelling techniques, and will have the opportunity to create their own data-driven artistic works about climate change.

8. Methane Emissions from Permafrost Thaw in the Arctic  
**Facilitator:** Dr. Walter Anthony, biogeochemist, ecologist, and climate change scientist, University of Alaska  
**Location:** Beck Hall Room 111  
Dr. Walter Anthony is a celebrated research scientist who conducts groundbreaking research into how Arctic lakes may be releasing more methane due to global warming. She is a National Geographic Explorer whose research has been prominently featured in the media. When not at her Nicollet County home, she loves field work in remote places such as Siberia and Alaska.

9. How to Speak and Listen So Politicians Will Act on Climate  
**Facilitators:** Members of the Citizens’ Climate Lobby  
**Location:** Heritage Banquet Room  
Citizens’ Climate Lobby leaders will lead a hands-on session about the importance of bipartisan citizen engagement on climate solutions and how to communicate with political leaders. The workshop will be action-based and attendees will practice making effective phone calls, writing letters to the editor, and planning for your next visit with your elected officials.

10. How to Have Difficult Conversations About Climate Change  
**Facilitator:** Nicole Ektnitphong '15, Deep Canvas Expert at Minnesota 350  
**Location:** Beck Hall Room 115  
It is difficult to have conversations about climate change with people in our lives who don’t care about or don’t believe in it. In this workshop, participants will learn skills for evoking values-based conversations and finding common ground by practicing asking open-ended questions and actively listening to responses.

11. How to Reduce Emissions from Agriculture  
**Facilitator:** Dr. Katey Walter Anthony, biogeochemist, ecologist, and climate change scientist, University of Alaska  
**Location:** Beck Hall Room 111  
Dr. Walter Anthony is a celebrated research scientist who conducts groundbreaking research into how Arctic lakes may be releasing more methane due to global warming. She is a National Geographic Explorer whose research has been prominently featured in the media. When not at her Nicollet County home, she loves field work in remote places such as Siberia and Alaska.

12. How to Have Difficult Conversations About Climate Change  
**Facilitator:** Nicole Ektnitphong '15, Deep Canvas Expert at Minnesota 350  
**Location:** Beck Hall Room 115  
It is difficult to have conversations about climate change with people in our lives who don’t care about or don’t believe in it. In this workshop, participants will learn skills for evoking values-based conversations and finding common ground by practicing asking open-ended questions and actively listening to responses.

13. How to Have Difficult Conversations About Climate Change  
**Facilitator:** Nicole Ektnitphong '15, Deep Canvas Expert at Minnesota 350  
**Location:** Beck Hall Room 115  
It is difficult to have conversations about climate change with people in our lives who don’t care about or don’t believe in it. In this workshop, participants will learn skills for evoking values-based conversations and finding common ground by practicing asking open-ended questions and actively listening to responses.

14. How to Have Difficult Conversations About Climate Change  
**Facilitator:** Nicole Ektnitphong '15, Deep Canvas Expert at Minnesota 350  
**Location:** Beck Hall Room 115  
It is difficult to have conversations about climate change with people in our lives who don’t care about or don’t believe in it. In this workshop, participants will learn skills for evoking values-based conversations and finding common ground by practicing asking open-ended questions and actively listening to responses.

15. How to Have Difficult Conversations About Climate Change  
**Facilitator:** Nicole Ektnitphong '15, Deep Canvas Expert at Minnesota 350  
**Location:** Beck Hall Room 115  
It is difficult to have conversations about climate change with people in our lives who don’t care about or don’t believe in it. In this workshop, participants will learn skills for evoking values-based conversations and finding common ground by practicing asking open-ended questions and actively listening to responses.
9:10 a.m.  
MUSICAL PRELUDE  
The Gustavus Symphony Orchestra  
Ruth Lin, DMA, conductor  
Polonaise from Eugene Onegin  
P.I. Tchaikovsky (1840–1893)  
 Prelude from Queen of Spades  
Waltz from Eugene Onegin

9:30 a.m.  
FOURTH LECTURE  
Sheila Watt-Cloutier  
Everything is Connected: Environment, Economy, Foreign Policy, Sustainability, Human Rights and Leadership in the 21st Century  
“The future of Inuit is the future of the rest of the world—our home is a barometer for what is happening to our entire planet.” So writes Sheila Watt-Cloutier in her memoir, *The Right to Be Cold*. A member of the Inuit of Arctic Canada, Watt-Cloutier argues that the survival of Inuit people and culture is inexorably linked to the survival of their Arctic environment. Furthermore, the fate of humanity rests on the fate of the Arctic, “the air conditioner,” if you will, for the entire planet.” But in the Arctic, every aspect of Inuit life has been changed by “the catastrophic event on our doorstep.” Disappearing sea ice makes hunting more dangerous and less bountiful. Coastal erosion endangers settlements by the sea. Softer, looser snow makes it impossible to build igloos, forcing hunters to bring tents that provide less protection against the elements. Animals long hunted for food are thinning out, and the loss of permafrost makes traditional food storing methods unreliable. Watt-Cloutier’s career as a global climate and human rights activist began locally as an advocate for Inuit communities. Her leadership led to her election as chair of the Canadian branch and, subsequently, the international chair of the Inuit Circumpolar Council (ICC), a non-governmental organization founded to promote Inuit rights internationally and to develop and encourage long-term policies that safeguard the Arctic environment. Today it represents 160,000 Inuit of Alaska, Canada, Greenland, and Chukotka (Russia).  
continued on page 18  
SHEILA WATT-CLOUTIER  
Canadian Inuit advocate and political representative

6 p.m.  
ART AT NOBEL CONFERENCE  
Hillstrom Museum of Art Nobel Conference Reception  
C. Charles Jackson Campus Center  |  Open until 8 p.m.  
No ticket required.  

8 p.m.  
MUSIC AND POETRY: RECITATIONS AND MEDITATIONS ON THE EARTH  
Björing Recital Hall  
Open to the public without charge; no ticket required. This event will be live streamed.  
More than a concert, more than a poetry reading, this event is a conversation that contemplates climate change through creative expression. Poets and musicians from the Gustavus community will recite and perform their own works, creating a space to meditate and reflect upon our varied responses to climate change.
In 2004, the ICC turned its full attention to informing the world about the devastating impact of climate change on the Arctic region. Watt-Cloutier gathered accounts of how climate change has changed Inuit life, and used them as evidence in a legal petition. In 2005, she presented her landmark petition to the Inter-American Commission on Human Rights (IACHR). The petition argued that global warming impedes human rights by threatening an entire culture, and thus the commission had an obligation to take corrective action on climate change. While the commission did not act on the petition, it did investigate the connection between climate change and human rights in a “thematic hearing” in 2006.

Watt-Cloutier’s petition was widely recognized as pivotal to reframing the climate change debate as a human rights issue. For her work, she was awarded the Sophie Prize, an international environmental sustainability award. In 2015, she was honored with the Right Livelihood Award, widely known as the “Alternative Nobel Prize.”

At the heart of Watt-Cloutier’s advocacy is her fundamental belief in the interconnectedness of all people. “Let us take opportunities like this to remind ourselves of our shared humanity. The ice has its own warmth, has its own purpose, in this huge world of ours, and let’s try to keep the Arctic as cold as possible. We will not only guard it for ourselves, but for the rest of the world.”

Watt-Cloutier will ask: How do changes in the climate of the Arctic shape all features of life in the Arctic? Why do these changes matter to all of us?

**Introduction**

Ursula Lindqvist, PhD

Associate Professor of Scandinavian Studies and Peace, Justice, and Conflict Studies

**FIFTH LECTURE**

Gabriele Hegerl, PhD

Models and Observations in Climate Change: Understanding the Past, Predicting the Future

In 1896, Swedish scientist Svante Arrhenius published a paper presenting his theory of the cause of past ice ages: fluctuating atmospheric CO2 levels. Arrhenius even calculated that increases in CO2 produced by human use of fossil fuels could raise Earth’s surface temperatures. Arrhenius’s theory gained relatively little traction when he published it. In the mid-20th century, scientists began to realize that many influences shape Earth’s climate, and that each of them left small telltale signs, or “fingerprints,” about their origins—fingerprints that are revealed through an analysis of the data. Indeed, the most striking fingerprints are those left by human use of fossil fuels. Identifying these fingerprints is vital to the work of detecting and attributing the causes of climate change, which is the work of climate modelers like Gabriele Hegerl.

Hegerl did not begin her career as a climate modeler; she’d done a doctorate in applied mathematics studying fluid mechanics (human swallowing, to be specific), but while she was in grad school, she also spent a lot of time hiking and skiing in the Alps. If you had gone hiking in the Alps in the 1990s, using maps produced by the Alpine Club some decades earlier, you could not have failed to notice a dramatic change in the topography: the glaciers were not where they were supposed to be. They’d receded.

Hegerl found herself very concerned about glacier retreat—concerned enough that, when she’d completed her dissertation, she applied for a postdoc to do climate simulation work at the Max Planck Institute. Once there, she “stumbled into one of their best topics, which was the fingerprint of climate change”—work that was just beginning, as it turns out. In fact, Hegerl published some of the first studies showing that humans’ influence on surface temperatures is detectable and can be separated from natural influences. In short, human influences have distinct, identifiable fingerprints.

In the early 2000s, Hegerl went on to write one of the first papers showing that late 20th century warming trends were highly unusual in pattern and magnitude compared to long-term trends. Her work pioneered a method for distinguishing among possible causes of climate change such as greenhouse gas increases or changes in the sun. Her method is still the primary method used.

Hegerl is a professor of climate system science at the University of Edinburgh and a fellow of the Royal Society. She has been a contributor to the last three assessment reports of the Nobel Peace Prize-winning Intergovernmental Panel on Climate Change (IPCC), most recently serving as a lead author. Since joining the faculty at Edinburgh, Hegerl has made important contributions to estimating the sensitivity of global temperature changes to greenhouse gas levels. She was involved in the first study that demonstrated that human influences have changed global precipitation patterns, sharpening the contrast between wet and dry regions.

Since 2013, Hegerl has led the European Advanced Grant “Transition into the Anthropocene,” which works with state-of-the-art climate models to understand the nature and drivers of climate variability.

Hegerl has advocated for the role of women in science, and has raised consciousness about the importance of balancing family and work. She holds a doctorate in applied mathematics from Ludwig-Maximilians Universität, München.

Climate scientists rely on models to project climate futures. Hegerl will explain how climate change models are developed and discuss how climate models can be used to understand the relationships between extreme weather events and climate change.

**Introduction**

Darsa Donelan, PhD

Continuing Assistant Professor of Physics

**PANEL DISCUSSION AND AUDIENCE QUESTIONS**

The speakers will discuss the worldwide significance of climate change in the Arctic, and the relationships between extreme weather events and climate change.
**LUNCH**

**Climate-thoughtful Lunch**, conversations with Gustavus faculty and students, and the Climate Change Learning Lab and Sustainability Showcase are repeated. Head to Lund Forum to explore them. Details on page 10.

**1:10 p.m.  MUSICAL PRELUDE**

**Gustavus Jazz Ensemble**

*Dave Stamps, DMA, director*

*Coral Reef*

Neal Hefti (1922–2008)

*Transit*

Darcy James Argue (b. 1975)

*What A Wonderful World*

George David Weiss (1921–2010)

Bob Thiele (1922–1996)

Arr. Alan Baylock

**1:30 p.m.  SIXTH LECTURE**

**David Keith, PhD**

**How Might Solar Geoengineering Fit into Sound Climate Policy?**

Climate engineering—or climate intervention—is a response to climate change that works to mitigate climate change in one of two principle ways, either by removing greenhouse gases from the atmosphere, or by managing solar radiation, e.g. by deflecting some of it away from the Earth. One way to do so is to capture carbon dioxide directly from the atmosphere and either store it in such a way that it cannot contribute to global warming or repurpose it for fuel or other products. Applied physicist David Keith has been developing a technology that not only captures CO₂ from ambient air, using a technique called “direct air capture,” but also uses it to make carbon-neutral hydrocarbon fuels. Keith is the founder of Carbon Engineering, a Canadian company working to develop that technology. The company asserts that individual direct air capture facilities can be built to capture one million tons of CO₂ per year each, which is equivalent to the annual emissions of 250,000 average cars.

David Keith is also the Gordon McKay Professor of Applied Physics at the Harvard School of Engineering and Applied Sciences and a professor of public policy at the Harvard Kennedy School. Throughout his career, Hulme’s research and writing have taken a proactive interest in the relationships between shifting and evolving weather patterns, and local and regional human social arrangements, structures, and identities. Hulme’s interest in the interface between living human societies and their climate ecosystems separates his work from that of other climate scientists. Keith has long served on the Nobel Peace Prize-winning Intergovernmental Panel on Climate Change (IPCC), most recently as lead author and a chair. For his work on the science, technology, and public policy of solar geoengineering Keith was named one of TIME magazine’s “Heroes of the Environment” in 2009.

Keith has published peer-reviewed papers on topics ranging from observational astrophysics to atomic physics and atom optics to atmospheric chemistry and solar geoengineering. With colleagues in The Keith Group, he has also written for publications such as *The Earthler, Foreign Affairs,* and *The Wall Street Journal.* His book, *A Case for Climate Engineering,* argues that, after decades during which very little progress has been made in reducing carbon emissions, we must put climate engineering on the table and consider it responsibly.

Keith teaches courses on science and technology policy and on energy and environmental systems, through which he has reached students worldwide with an online edX course, Energy Within Environmental Constraints.

Keith earned his doctorate from MIT.

He will discuss the science, ethics, and politics of solar geoengineering to cool the Earth through the injection of sulfur particles into the atmosphere.

**Introduction**

**Chuck Niederriter, PhD**

Professor, Physics and Environmental Studies

**SEVENTH LECTURE**

**Mike Hulme, PhD**

**Beyond Climate Solutionism**

“To speak of climate was to speak of human life and culture; to speak of human cultural flourishing was to speak of climate.” Mike Hulme calls upon examples ranging from ancient Greece to the contemporary Arctic to show that “human beings live culturally with their weather.” We err when we isolate discussions of climate—and of climate change—to the realm of science alone. We misunderstand the deep connections that humans naturally bring to our experience of our world.

Throughout his career, Hulme’s research and writing have taken a proactive interest in the relationships between shifting and evolving weather patterns, and local and regional human social arrangements, structures, and identities. Hulme’s interest in the interface between living human societies and their climate ecosystems separates his work from that of other climate scientists.

Hulme’s early work used statistical modeling to make precipitation pattern predictions. He studied rainfall patterns in the UK and Sudan, where he examined the scientific data alongside the ways human populations adapted to shifting weather systems. For two decades, his research focused on modeling climate change scenarios and impacts. He also managed the Data Distribution Center for the Nobel Peace Prize-winning Intergovernmental Panel on Climate Change (IPCC).

continued on page 22
In the early 2000s, Hulme’s thinking about climate changed. In 2007, he wrote a review for *The Guardian* in which he voiced concern that mustering scientific data about climate change wasn’t going to affect the broader climate debate, which was about culture and values, not statistics. “If scientists want to remain listened to, to bear influence on policy, they must recognize the social limits of their truth seeking and reveal fully the values and beliefs they bring to their scientific activity,” he wrote.

In the years since, Hulme’s thinking about climate science and climate policy has turned more fully toward the philosophical and anthropological. In his books *Why We Disagree About Climate Change* and *Weathered: Cultures of Climate*, Hulme has shifted away from data sets and toward what climate change means for human societies. By focusing only on the data of change and the discourse of catastrophe, we miss the social element of human adaptation, accommodation, and creativity. If we take it as a given that weather patterns shift, we can start to look more for climate adaptations (callling on anthropology and the humanities) than for climate solutions.

This latest phase in Hulme’s career has given him considerable public prominence, as a clarion voice from the scientific world attesting to the enduring importance of religion, literature, and art in creating a future for humanity in a world of radical environmental shift. As he writes, “rather than framing climate as an interconnected global physical system or as a statistical artifact of weather measurements, climate needs to be understood equally as an idea that takes shape in cultures and can therefore be changed by cultures.”

Hulme holds a doctorate from the University of Wales, Swansea. He is Professor of Human Geography and Fellow of Pembroke College, University of Cambridge.

Hulme will explore how we reframe the adjustments that climate change demands of all of us, by drawing upon the work of researchers beyond the sciences.

**Introduction**  
Samuel Kessler, PhD  
Assistant Professor of Religion and Bonnier Chair of Jewish Studies

**3 p.m.**  
**Panel Discussion and Audience Questions**  
The speakers will discuss the roles climate geoengineering can or should play in response to climate change and will explore what is involved in imagining our climate futures.

**4 p.m.**  
**Break**

**5:30 p.m.**  
**Nobel Banquet**

Cec Eckhoff Alumni Hall, Johnson Student Union  
Separate ticket required. This event will not be live streamed.  
Doors will open at 5 p.m.  
Reflections from the conference speakers on what we can do next and where we can find hope.

You might notice that none of the speakers at the conference are focusing only on mitigation. That might seem like an odd omission—leave out one of two major responses—but the decision emerged as a result of other organizational choices the 2019 Nobel Conference committee made. However, given the centrality of the topic—and the fact that it will be referred to by many of the speakers here—we offer you a very short introduction to mitigation.

Due to lags in the Earth’s climate system, even if we were to reduce the amount of greenhouse gas (GHG) emissions to zero today, the world’s climate would continue to warm for some time. Given this lag—and given the warming that has already occurred—we must find ways to adapt to (that is, to live with) climate change and the impacts that are already unfolding—impacts such as rising sea level and more frequent large hurricanes and other “extreme weather events.”

While adaptation is essential, we must also do more to reduce the amount of GHG in the atmosphere—that is, to mitigate the impact of those gases, which are called “greenhouse gases” because they absorb and hold heat in the atmosphere. Mitigation takes two forms: 1) put fewer GHGs into the atmosphere, and 2) take GHGs out of the atmosphere. Additionally, geoengineering proposals aim to reduce how much sunlight enters the Earth system in the first place.

**Reducing emissions:** The biggest source of anthropogenic greenhouse gases is our use of fossil fuels, including oil, coal and natural gas: carbon dioxide gas is a byproduct of burning any fossil fuel. Agriculture, deforestation, cement production, and landfills are also major sources of anthropogenic greenhouse gases (which include methane CH₄ and nitrous oxide N₂O—as well as other gases).

Thus a major focus of climate change mitigation is reducing the world’s use of energy and swapping fossil fuels for renewable energy like wind power. At global, national, and local levels, policy decisions that encourage energy conservation, energy efficiency, and less reliance on fossil fuels will mitigate climate change. At a personal and household level, actions like biking instead of driving and reducing (or eliminating) air conditioning use also serve a mitigating function.

**Removing GHGs from the atmosphere:** Forestation reduces the amount of GHGs in the atmosphere, because growing trees require carbon dioxide from the atmosphere. The trees sequester, or store, this CO₂ in their trunks, roots, limbs, and leaves. If you attended last year’s Nobel Conference, you will remember that several presenters also discussed the potential to sequester carbon in the soil by increasing the amount of organic matter it contains.

The more we mitigate, the better we will be able to adapt to future climates. Mitigation essentially softens the impacts of climate change by reducing the amount of warming and climate change that will occur.

Mitigation is notable in that many of the options at our disposal have positive side-effects. For example, walking and biking are also good for our health. Less reliance on fossil fuels also means more political independence. More public transportation also means less traffic congestion. More trees increase our disposal have positive side-effects. For example, walking and biking are also good for our health. Less reliance on fossil fuels also means more political independence. More public transportation also means less traffic congestion. More trees increase the beauty of our natural environment, and can be sources of sustainable food.

The United States produces more anthropogenic greenhouse gases than any other country except China. Worldwide—and nationwide—our greenhouse gas emissions continue to rise. Mitigation, while essential, is not being carried out at the rates required to slow climate change. Mitigating climate change is thus the great moral challenge that we must acknowledge and rise to meet.
Climate Change THINKERS

Experience a Glacier Melting
Gustavus art professor Betsy Ruth Byers and Emily Dzieweczyński ’19

Artists Betsy Ruth Byers and Emily Dzieweczyński ’19 pair glaciological and psychological research to create interactive and immersive art spaces that promote empathy between humans and the environment. Their current work employs virtual reality and sensory stimuli such as felt, lights, heat lamps, dirt, and water to place viewers in the distressed environments of receding glaciers. At the Nobel Conference Learning Lab during lunch breaks, attendees will be able to experience their recent projects focused on the Rhone Glacier in Switzerland as well as a new virtual reality animation exploring the impact of climate change on the hydrological system at Volcán Cayambe in Ecuador. This animation uses 360° footage of the glacier paired with overlaid virtual animations of watercolor paintings. It is a full immersion experience for the viewer and brings to life the perspective of water droplets traversing the entire hydrologic system of Volcán Cayambe’s tropical glacial watershed. The animation is inspired by the collaborative and interdisciplinary research of Gustavus geographer Jeff La Frenierre and his colleagues, and was created with the support of a National Science Foundation grant. In June, the pair traveled to Ecuador where La Frenierre’s team was at work. There, they were able to observe scientific data collection firsthand, and to partner directly with colleagues working in the field.

Drones Over the Ecuadorean Highlands
Jeff La Frenierre

Gustavus geography professor Jeff La Frenierre is using drones to track and document glacial melt on Ecuador’s Mount Chimborazo, and then analyzing the downstream effects of that melt on water availability for the communities that depend upon it. “We ask: right now, how are people being affected by glacial melt?” La Frenierre explains. “It’s meaningful work at the cutting edge of climate change research.” His project is being supported by a three-year, $192,000 research grant from the National Science Foundation.

La Frenierre’s revolutionary glacier research has been featured in a new BBC program called Earth From Space. The science and nature show uses “cameras in space [to] tell the story of life on Earth from a brand new perspective.”

The Juliana v. United States Lawsuit
Nathan Baring ’22

Juliana v. United States is a groundbreaking “constitutional crisis lawsuit” in which 21 young people are suing the federal government. The plaintiffs’ argument is simple: government actions that have exacerbated climate change have failed to protect public trust resources and have violated youths’ constitutional rights to life, liberty, and property.

Sophomore biology and political science major Nathan Baring is one of those 21 plaintiffs.

Baring grew up in Fairbanks, Alaska. Like most Alaskans, he spent a lot of time outdoors. But woodsmoke in the air aggravated his asthma while playing soccer, leading his mother to encourage him to write a letter to the editor about air quality. He began studying the growing evidence of climate change in Fairbanks: evidence that included more wildfires and less snow.

One day in 2015, Baring was forwarded an email from a non-profit environmental advocacy group called Our Children’s Trust. The email contained information about what could become a revolutionary lawsuit. It asked for volunteers. After convincing his parents of his commitment, Baring joined Juliana v. United States.

“I did everything I could to fight for change within the system,” Baring explains. “This lawsuit became a last resort for us to make our voices heard.”
**VISUALIZING CLIMATE CHANGE**

**START SEEING THEATRE AND DANCE!**

Be on the lookout for "popup" theatre and dance during breaks in the conference!

**TUESDAY, SEPTEMBER 24**

**Appreciation** by Katie Pearl and *Homo Sapient* by Chantal Bilodeau; Directed by Associate Professor of Theatre and Dance Henry MacCarthy, Chase Adelsman '17, and Thomas Buan '16

These two pieces are from Climate Change Theatre Action, a worldwide series of readings and performances of short climate change plays presented in 2017 in 140 events across 23 countries to coincide with the United Nations Conference of the Parties meetings.

**Performed throughout the day.**

5 p.m. | **When Science Ends, We Begin**
Choreographed by Marissa Williamson ’20; original audio compilation by Lizzie Williamson; performed by Amanda Hoffman ’22, Kelly Montgomery ’21, Hannah Saunders ’22, Megan Setterlund ’21, Megan Witte ’20, and Kristen Ziegler ’21

**WEDNESDAY, SEPTEMBER 25**

8:50 a.m. | **To Weep, to Fall and to Fade (part two)**
Choreographed and performed by Anna Buskala ’20, Amanda Hoffman ’22, and Amber Lange ’20; music by Sigur Rós

12 p.m. | **A Glacier’s Lament**
Choreographed by Marissa Williamson ’20; music by Sigur Rós; performed by Anna Buskala ’20, Kathryn Hicks ’21, Amanda Hoffman ’22, and Amber Lange ’20

**VISUALIZING CLIMATE CHANGE**

**GUSTAVUS READING IN COMMON PROGRAM**

**While Glaciers Slept**, the Gustavus Adolphus College First Year Reading in Common book, weaves together the stories of what happens when the climates of planet and family change. Glaciologist and geographer Dr. M Jackson tells the story of her parents’ struggles with cancer while describing in detail the planetary changes she’s witnessed. Jackson’s book conveys her view that hope and resiliency can and should be embraced, even as we face a climate changed. The Reading in Common program introduces new students to academic life at Gustavus while also giving them early engagement with the Nobel Conference. This year, students were invited to submit an image that illustrates the climate change occurring around them, or represents their feelings about climate change. Those images are being displayed in the Climate Change Lab, open during lunch.

**“What makes up a glacier, I remember, is millions and millions of little snowflakes, reaching out to one another, grasping hands.”**

**WELCOME HIGH SCHOOL STUDENTS!**

We’re glad you’ve joined us to participate in this conversation about science and its social and ethical implications. Climate change is one of the greatest challenges of our time—one that will shape many aspects of your adult lives. The presenters we’ve invited were chosen because of the importance of their work, as well as their ability to present their ideas in compelling ways. We hope your experience here leaves you inspired to work to address climate change on your own home turf.

Is Gustavus in your future?

Learn more at gustavus.edu/admission.
CANCER IN THE AGE OF BIOTECHNOLOGY

NOBEL CONFERENCE 56
Cancer in the Age of Biotechnology  |  October 6 & 7, 2020

Improved knowledge of how cancer progresses and of how patients’ immune systems respond has allowed for the development of novel therapies that are more effective and targeted specifically to kill cancer cells with fewer side effects than traditional chemotherapy approaches. Many of these innovative treatments are based on antibodies and other complex biologically-derived molecules rather than chemically synthesized drugs. The complexity of these biological drugs allows for their specificity and greater effectiveness, but also makes them particularly expensive to develop, produce, and administer. Nobel Conference 56 will explore the science behind these new cancer treatments and examine the structural and societal factors that influence patient access to them. Imagining a future of medicine that is more focused on the individual, we will consider the ethical implications of the development of, and access to, these next-generation therapies.

Tickets on sale now at gustavus.edu/nobelconference.
INFORMATION

INFORMATION & MESSAGE CENTER
Located in the lobby outside the southeast doors of Lund Center Arena, the Nobel Conference Information Desk may be reached during conference sessions by calling 507-933-7981. At other times, questions may be directed to the College operator at 507-933-8000.

AUDIENCE QUESTIONS
Panel discussions including your questions are always a highlight of the conference.

Questions may be submitted in the following forms:
text Nobel55 to 22333 or use one of the cards distributed by the ushers.

We are only able to use a few of your excellent questions, so we encourage you to take advantage of other opportunities to explore them while you are here. Join a lunchtime discussion in the forum, go for a walk in the Arb with the person you’ve just met at the conference, and continue the conversation in your car or bus on the way home.

DISABILITY ASSISTANCE
Assisted listening devices are available at the conference Information Desk. Wheelchair seating is available in the arena.

OPEN-CAPTIONING
Open-captioning services are offered during the live stream of each lecture.

RESTROOMS
Restrooms are on both levels of Lund Center and in the Jackson Campus Center. Convenient gender neutral restrooms are on the upper level of Jackson Campus Center and on the main floor of the library.

FOOD AND BEVERAGES
Beverages and snacks may be purchased at the concession stand in the Johns Family Courtyard and at the Courtyard Café, in the lower level of the Jackson Campus Center. Complimentary cookies will be served at 3:15 p.m. on Tuesday.

PREORDERED LUNCHES
Those who ordered buffet lunches with their advance registration may claim them in the Lund Center Forum (north of the arena). A limited number of buffet lunches may be available for purchase at the Forum entrance.

WEB ARCHIVES
Nobel Conference 55 mainstage lectures will be archived on the Gustavus website (gustavus.edu/nobelconference). Amitav Ghosh’s lecture will not be archived.

CONFERENCE BOOKSTORE
Books written or edited by this year’s Nobel lecturers (as well as other titles relating to the topic) are for sale in the Book Mark, located in the lower level of the Jackson Campus Center, open 8 a.m.–6 p.m. Inquire about discounts on selected Nobel-related titles and other Book Mark specials during the conference.

CERTIFICATION OF ATTENDANCE
Certificates of attendance for continuing education credits are available at the Nobel Conference Information Desk.

WEDNESDAY BANQUET TICKETS
Wednesday evening’s closing banquet is sold out.

SOCIAL MEDIA
If you are posting photos or talking about The Nobel Conference on social media (Twitter: @nobelconference, facebook.com/nobelconference, Instagram, etc.), we invite you to use the hashtag #Nobel55.

HOSPITALITY ROOM
NCAA Room, Lund 2nd Floor
The Nobel Conference Hospitality Room is open for Gustavus alumni, parents, and friends to come together during the conference. Gustavus staff will be available for College updates and questions throughout the day.

MULTIFAITH SPACE
The Bonnier Multifaith Center is available for personal prayer and reflection during the Nobel Conference. It is located at the south end of Anderson Hall, on the main floor.

Gustavus Academy for Faith, Science, and Ethics prepares leaders to build creative alliances between religion and science in order to address the world’s most pressing challenges.

The Gustavus Academy summer program provides opportunities for high school students to explore their beliefs and to discover how scientists and people of faith are working together to address some of the world’s most pressing problems. As an Academy Fellow, they will join with other outstanding high school students to grow in knowledge, develop leadership skills, and clarify their sense of purpose.

2020 Gustavus Academy

WHY? THE ETHICS OF CANCER AND ITS TREATMENT

June 20-26, 2020 | Gustavus Adolphus College | Saint Peter, Minnesota
To nominate a student or for more information, please visit gustavus.edu/chaplain/academy.