



**American Museum  
of Natural History**

**Hayden Planetarium  
2023 Isaac Asimov Memorial Debate**

# **The Future of Energy**

**Tuesday, March 21  
7 pm**

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Samuel J. and Ethel LeFrak Theater

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# The Future of Energy

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## Tonight's Program:

Welcome and Introduction  
Opening Questions  
Directed Free Debate Among Panelists  
Questions from Audience  
Adjournment

## *What will fuel the future of civilization?*

Major advances in energy production, and the urgency of the climate change crisis, are re-shaping the conversation about what we use to power our world: fossil fuels, wind turbines, hydroelectric, solar panels, nuclear fission and nuclear fusion.

With the recent breakthrough at Lawrence Livermore National Laboratory (LLNL) National Ignition Facility, nuclear fusion has emerged as a leading candidate. Many see the ability to harness nuclear energy as a clear positive for reducing our impact on global climate, while some are skeptical of its practicality and safety for everyday use. How will science, engineering, and geopolitics shape how the future of energy unfolds?

Join **Neil deGrasse Tyson**, the Frederick P. Rose Director of the Hayden Planetarium, and our panel of experts from various sectors on this issue for a compelling discussion about today's energy landscape and what we can expect in the future.

## Panelists



### **Peter Keleman**

Peter Keleman is a professor at Columbia University's Department of Earth and Environmental Sciences, where he studies the chemical and physical processes of reaction between fluids and rocks. His primary focus now is on geologic capture and storage of CO<sup>2</sup> (CCS) and reaction-driven cracking processes in natural and engineered settings, with application to carbon capture and storage, the global carbon cycle on Earth and Mars, geothermal power generation, hydrocarbon extraction, and *in situ* mining.



### **Olivia Lazard**

Olivia Lazard is a fellow at Carnegie Europe, where her research focuses on the geopolitics of climate, the transition ushered in by climate change, and the risks of conflict and fragility associated with climate change and environmental collapse. She is also director of Peace in Design Consulting through which she remains active as an environmental peacemaking and mediation practitioner. She has over 15 years of experience in the peacemaking sector at field and policy levels, with an original specialization in the political economy and political ecology of conflicts. She has worked in fragile settings in the Middle East, Latin America, Africa, and Asia.



### **Tammy Ma**

Dr. Tammy Ma is a plasma physicist at Lawrence Livermore's National Ignition Facility, where she and a team of scientists run experiments aimed at achieving fusion ignition by using NIF's 192 laser beams to compress fuel capsules containing deuterium and tritium (isotopes of hydrogen) in a process called inertial confinement fusion (ICF). The goal is to achieve sustained thermonuclear fusion, where the fuel fuses into heavier elements, and many times more energy is released than it took to initiate the reaction. The scientific and engineering challenges are vast, but the potential to produce abundant clean energy, as well as to better understand the physics of a process that powers all the stars in the universe, is irresistible.



## **Anna Shpitsberg**

Anna Shpitsberg serves as the Deputy Assistant Secretary for Energy Transformation at the U.S. Department of State. Ms. Shpitsberg is responsible for supporting a shift to a decarbonized economy that enables secure and resilient energy systems. Shpitsberg leads efforts and advises on power market

reform, energy financing, and resilient supply chains to support transitioning power, transport, and end-use sectors. In her prior role, Shpitsberg served as Director for Global Power and Renewables at IHS Markit. She also established the U.S. Department of State's Power Sector Program and held positions at the U.S. Department of Energy and Morgan Stanley.



## **David Wallace-Wells**

David Wallace-Wells is a columnist and writer for *The New York Times* and *The New York Times Magazine*, and the author of *The Uninhabitable Earth: Life After Warming*, which explores the speed and scope of climate change and how it may transform politics, culture, economics, and technology. He is a former

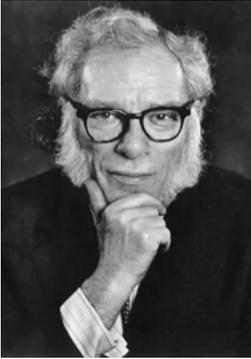
deputy editor of *New York* magazine and the *Paris Review*, and a National Fellow at the New America Foundation.



## **Host and Moderator Neil deGrasse Tyson**

Dr. Neil deGrasse Tyson is an astrophysicist and the Frederick P. Rose Director of the Hayden Planetarium at the American Museum of Natural History in New York City.

## About Isaac Asimov



The late Dr. Isaac Asimov, one of the most prolific and influential authors of our time, was a dear friend and supporter of the American Museum of Natural History.

In his memory, the Hayden Planetarium is honored to host the annual Isaac Asimov Memorial Debate—generously endowed by relatives, friends, and admirers of Isaac Asimov and his work—bringing the finest minds in the world to the Museum each year to debate pressing questions on the frontier of scientific discovery.

### Previous Asimov Debates

- |      |  |      |                                     |
|------|--|------|-------------------------------------|
| 2022 | Space Pollution  | 2006 | Universe: One or Many?              |
| 2020 | Alien Life   | 2005 | The Enigma of Alien Solar Systems   |
| 2018 | Artificial Intelligence  | 2004 | The Dark Side                       |
| 2017 | De-Extinction  | 2003 | The Big Bang                        |
| 2016 | Is the Universe a Simulation?                                    | 2002 | The Search For Life in the Universe |
| 2015 | Water, Water   | 2001 | The Theory of Everything            |
| 2014 | Selling Space  |      |                                     |
| 2013 | The Existence of Nothing   |      |                                     |
| 2012 | Faster than the Speed of Light                                   |      |                                     |
| 2011 | The Theory of Everything... Still Searching?                     |      |                                     |
| 2010 | Rose Center 10th Anniversary Asimov Debate: Is Earth Unique?     |      |                                     |
| 2010 | Moon, Mars, and Beyond: Where Next for the Manned Space Program? |      |                                     |
| 2009 | From Planets to Plutoids   |      |                                     |
| 2008 | Mining The Sky   |      |                                     |
| 2007 | The Pioneer Anomaly  |      |                                     |

Proceeds from ticket sales of the Isaac Asimov Memorial Debates benefit the scientific and educational programs of the Hayden Planetarium.

## Hayden Planetarium Programs

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## Department Of Astrophysics

Learn about current astrophysical research at [research.amnh.org/astrophysics](http://research.amnh.org/astrophysics).

## Rose Center For Earth And Space

Explore the cosmos, stars, galaxies, and planets at [amnh.org/rose](http://amnh.org/rose).

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