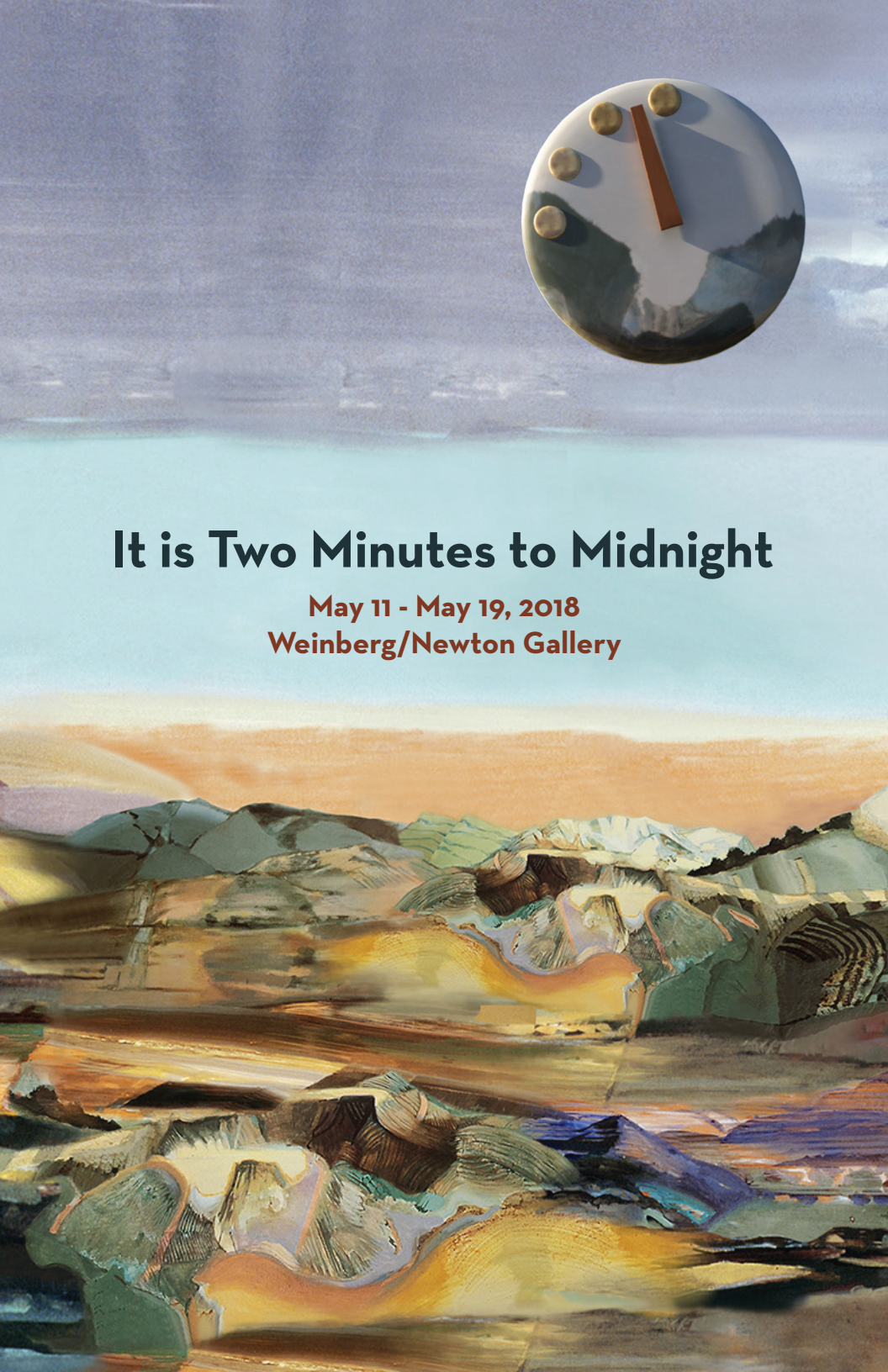

It is Two Minutes to Midnight

May 11 - May 19, 2018
Weinberg/Newton Gallery

Weinberg/Newton Gallery
Presents
An Exhibition of PHSCologram Sculptures and Virtual Reality Experiences

Opening Reception: May 11, 5 – 8 p.m.

In partnership with the *Bulletin of the Atomic Scientists*, Weinberg/Newton Gallery presents unique virtual reality experiences by **Ellen Sandor** and **(art)^n** artists **Diana Torres**, **Azadeh Gholizadeh**, inspired by **Martyl** in collaboration with **Carolina Cruz-Neira** and **The Emerging Analytic Center at University of Arkansas at Little Rock**. *It is Two Minutes to Midnight* highlights recent heightened threats of nuclear warfare, growing tensions between nations, and climate change alongside scientific discoveries, like CRISPR genomic editing, that could improve healthcare and have other applications.

Events

New Media Futures: The Rise of Women in the Digital Arts
Edited by Donna J. Cox, Ellen Sandor and Janine Fron, University of Illinois Press
Limited Book signing: May 11, 5 - 8 p.m., at Weinberg/Newton Gallery

Art and Design of the Doomsday Clock

A panel discussion with **Michael Golec**, Department Chair and Design History Coordinator at the School of the Art Institute of Chicago; **Maggie Taft**, art historian and author; and moderator **Rachel Bronson**, president and CEO of the *Bulletin*

Panel Discussion: Tuesday, May 15, 6-8 p.m. at Weinberg/Newton Gallery

*This program is supported by the *Bulletin of the Atomic Scientists*, Weinberg/Newton Gallery, and the Terra Foundation for American Art.

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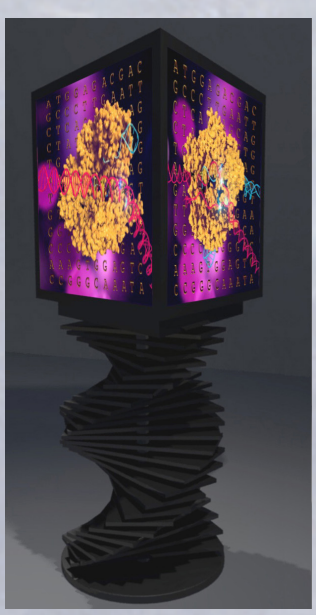
It is Two Minutes to Midnight

The exhibition includes a virtual reality piece featuring textures from Martyl's landscape paintings from *Mountain & Islands*, the *Doomsday Clock*, and archived concerns from the *Bulletin of the Atomic Scientists*. The piece will be displayed in the CAVE-in-a-BOX (cave automatic virtual environment) and in two Oculus Rift stations.

In addition, the exhibition features a 4-panel PHSCologram sculpture that includes the original *Have a Nice Day* panel from Martyl along with three additional panels, and a 3-panel PHSCologram sculpture showcasing the different stages of CRISPR-Cas9 genome editing to replace harmful mutation. Accompanying the PHSCologram sculpture, there is an 8 minute video about the story behind the art and the person that inspired it.

Have a Nice Day II
Ellen Sandor and (art)ⁿ, Martyl, Chris Kemp, Diana Torres, Azadeh Gholizadeh and Janine Fron
In Memory of Martyl
2017
Digital PHSCologram, Duratrans, Kodalith and Plexiglas.
42 x 32 x 72 inches



CRISPR-Cas9: A Ray of Light
Ellen Sandor and (art)ⁿ, Chris Kemp, Diana Torres, Azadeh Gholizadeh
2017
Digital PHSCologram, Duratrans, Kodalith and Plexiglas.
33 x 33 x 62 inches

Have a Nice Day

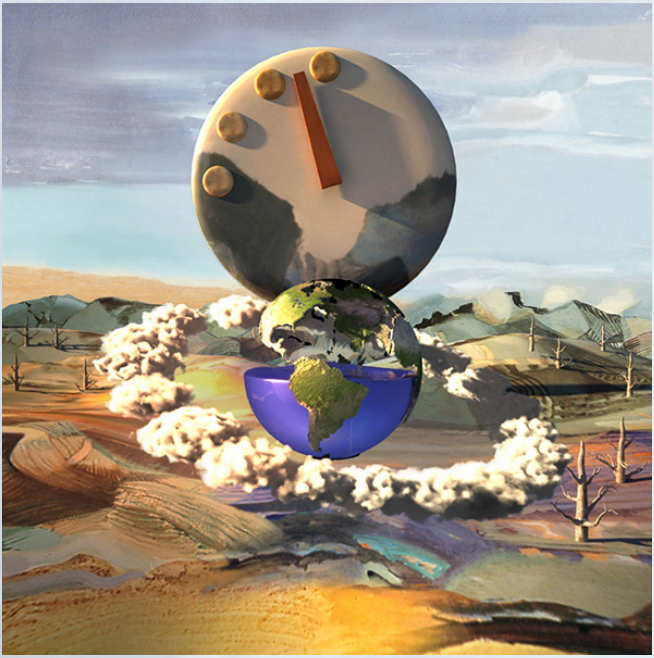
A painterly mountainscape inspired by Martyl's *Tent Rocks* looms in the background, ominously juxtaposed with Martyl's *Doomsday Clock*, initially designed in 1947 as the first magazine cover for the *Bulletin of the Atomic Scientists*. The Clock is instantly recognized as a symbol of the nuclear arms race and man-made existential challenges posted by scientific advancement. Its relevance is of even greater importance today, with other nations now admitting to the possession of nuclear weapons and fears of nuclear terrorism and recent increased terrorist activity. We can only hope this work is not symbol of what is to come, as we try to make light of the dark humor in the title —*Have a Nice Day*.

Have a Nice Day
Ellen Sandor and (art)^{n} , Martyl, Keith Miller, Pete Latrofa and Janine Fron
2002
Digital PHSCologram, Duratrans, Kodalith and Plexiglas
30 x 40 inches

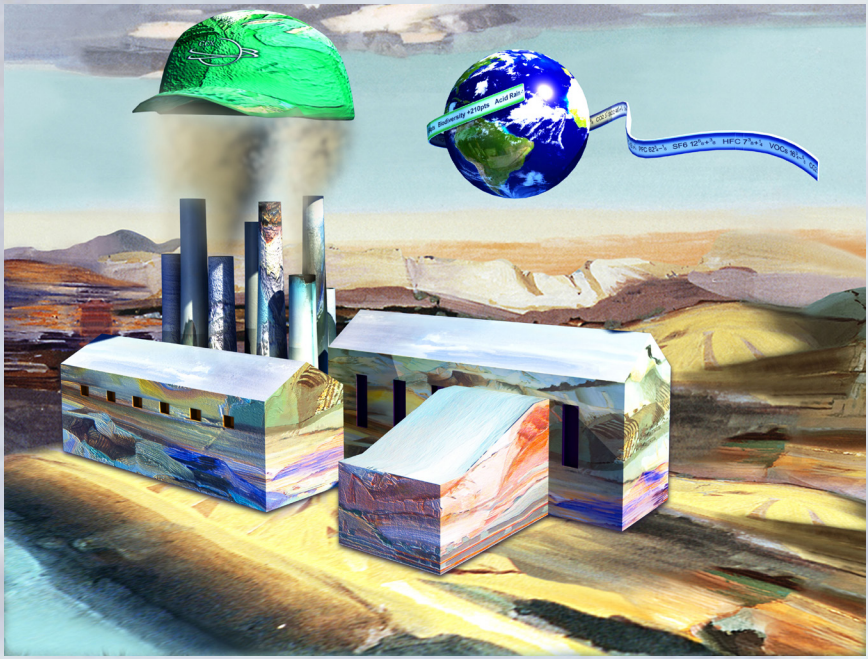
Have a Nice Day II PHSCologram Sculpture

In homage to the original *Have a Nice Day* PHSCologram collaboration with the late artist and Doomsday Clock designer, Martyl, Ellen Sandor and (art)^n created a PHSCologram sculpture with three additional panels to complement the original, addressing more in depth factors that have led and continue to push humanity towards midnight.

Have a Nice Day II, Panel 2
Ellen Sandor, (art)^n, Chris Kemp, Diana Torres, Azadeh Gholizadeh, and Janine Fron
In Memory of Martyl
2017
Virtual Photograph/Digital PHSCologram Sculpture, Duratrans, Kodalith and Plexiglas
42 x 32 x 72 inches



Have a Nice Day II, Panel 3, 2017, 30 x 30 inches



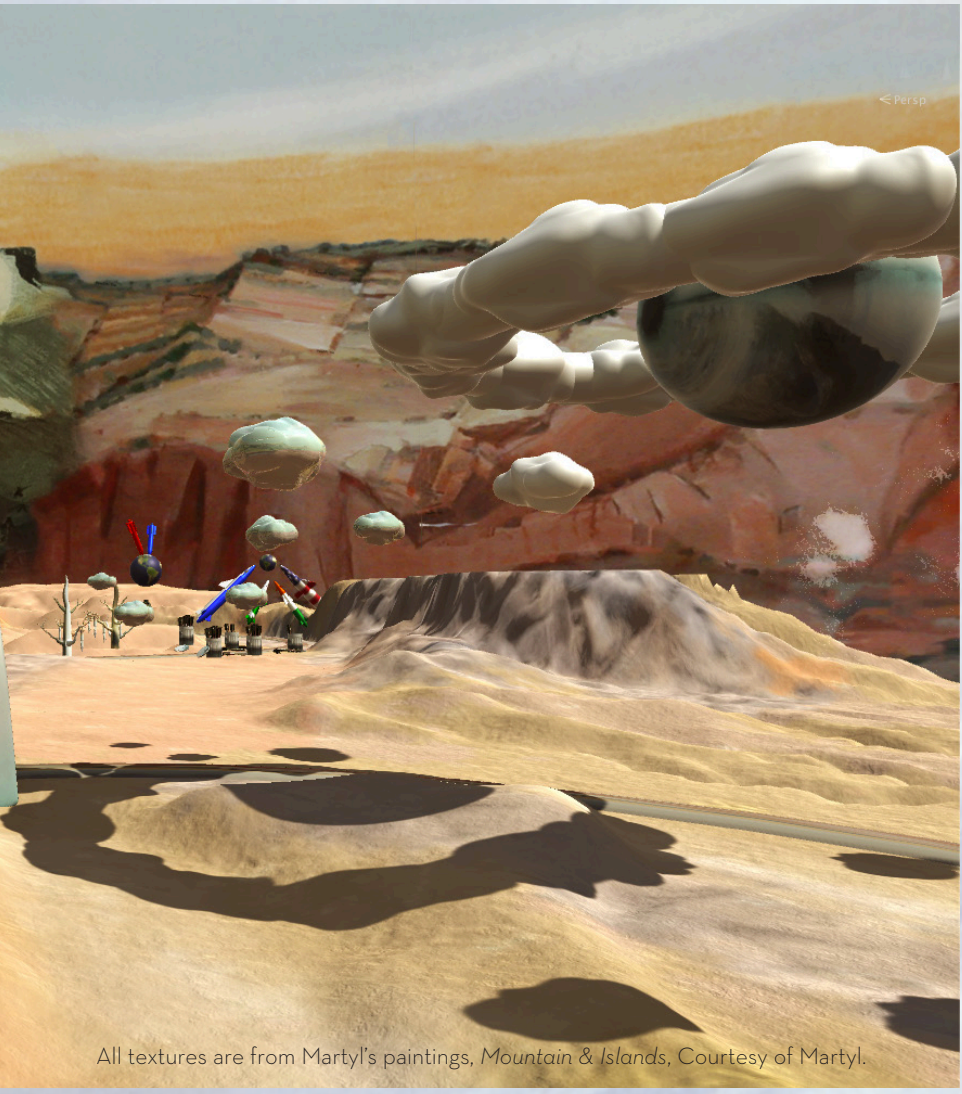
Have a Nice Day II, Panel 4, 2018, 30 x 40 inches

Have a Nice Day II: VR Tour Through the Doomsday Clock
1947 - 2018

Working collaboratively with Martyl's paintings, archived data from the *Bulletin*, Carolina Cruz-Neira, The Emerging Analytic Center, University of Arkansas at Little Rock, Ellen Sandor, (art)^{n} Diana Torres, and Azadeh Gholizadeh created a unique VR experience tour that spans the history of the Doomsday Clock's activities. Produced 15 years after the original ***Have a Nice Day***, this body of work reveals heightened threats of nuclear warfare, growing tensions between nations, and environmental factors of

VR Tour Through the Doomsday Clock, 2018
Ellen Sandor and (art)^{n}, Diana Torres, Azadeh Gholizadeh
Carolina Cruz-Neira, Jason Zak, Tanner Marshall and Jaimes Krutz from
University of Arkansas at Little Rock's George W. Donaghey Emerging Analytics Center
William Robertson, Co-Founder/CTO Digital Museum of Digital Art
Special thanks to Janine Fron
Voice over by Rachel Bronson President and CEO of the *Bulletin of the Atomic Scientists*
In Memory of Martyl

climate change, along with positive scientific discoveries that could improve medicine and have many more beneficial applications.
In this reimagined virtual landscape the player explores the Los Alamos, desert site of Project Y and navigates through the Doomsday Clock timeline, from 1947 to 2018. All the textures of the landscape are a montage of Martyl's landscape paintings of the same location. Each station contains visual cues that symbolize major events that occurred in specific year. The tour is narrated by Rachel Bronson, the president and CEO of the *Bulletin of the Atomic Scientists*.



All textures are from Martyl's paintings, *Mountain & Islands*, Courtesy of Martyl.

The *Doomsday Clock* is an internationally recognized design that conveys how close we are to destroying our civilization with dangerous technologies of our own making. First and foremost among these are nuclear weapons, but the dangers include climate-changing technologies, emerging biotechnologies, and cybertechnologies that could inflict irrevocable harm, whether by intention, miscalculation, or by accident, to our way of life and to the planet. *-Bulletin of the Atomic Scientists*

"Our world faces a crisis as yet unperceived by those possessing power to make great decisions for good or evil. The unleashed power of the atom has changed everything save our modes of thinking and we thus drift toward unparalleled catastrophe." – Albert Einstein, *New York Times*, May 25, 1946

A Timeline of Conflict, Culture, and Change

1949: 3 Minutes to Midnight, The Arms Race is On

In the fall, at a remote site in Central Asia, the Soviet Union explodes a nuclear device—the design of which is very similar to that of the bomb that the United States used on Japan four years earlier. The Soviets deny the test, but US President Harry Truman shares the news with the American public about it, and the arms race begins. The *Bulletin* explains, "We do not advise Americans that doomsday is near and that they can expect atomic bombs to start falling on their heads a month or year from now. But we think they have reason to be deeply alarmed and to be prepared for grave decisions." *-Bulletin of the Atomic Scientists*

Station 1949; VR Tour through the Doomsday Clock, 2017

1968: 7 Minutes to Midnight, The Eastern World Explodes
While the superpowers wage the Cold War, much hotter wars rage in Asia. United States involvement in Vietnam intensifies, India and Pakistan battle over Kashmir in 1965, and Israel and its Arab neighbors renew hostilities in 1967. Worse yet, France and China develop nuclear weapons in order to assert themselves as global players. This combination of conventional warfare and nuclear proliferation causes the *Bulletin*'s editors to move the Clock's minute hand toward midnight. The *Bulletin* recognizes the possibility that these regional conflicts could flare into wider wars with the potential use of nuclear weapons. -*Bulletin of the Atomic Scientists*

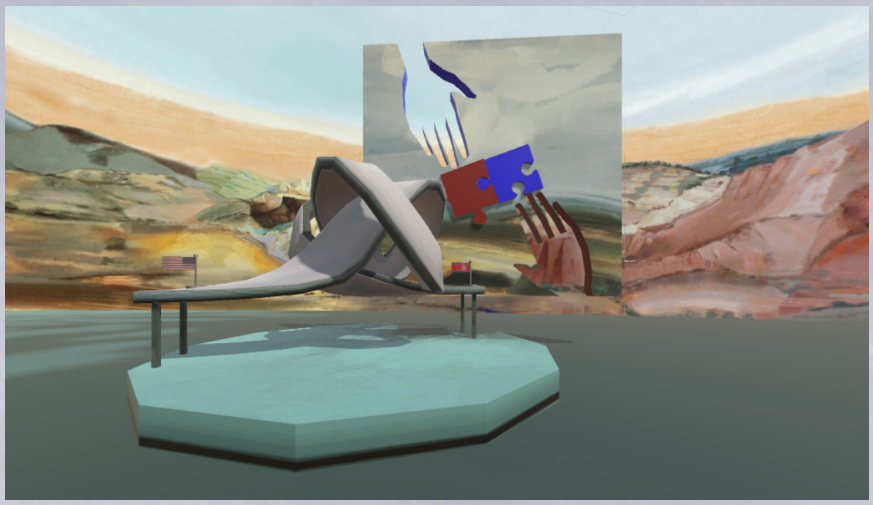
Station 1968; VR Tour through the Doomsday Clock, 2017

1991: 17 Minutes to Midnight, A Fresh Start
With the Cold War officially over, the United States and Russia begin making deep cuts to their nuclear arsenals. US President George H.W. Bush and Soviet President Mikhail Gorbachev sign the Strategic Arms Reduction Treaty. Known as START, the agreement greatly reduces the number of strategic nuclear weapons deployed by the two countries. Better still, a series of unilateral initiatives take most of the missiles and bombers in both countries off hair-trigger alert. The *Bulletin* declares: "The illusion that tens of thousands of nuclear weapons are a guarantor of national security has been stripped away." -*Bulletin of the Atomic Scientists*

Station 1991; VR Tour through the Doomsday Clock, 2017

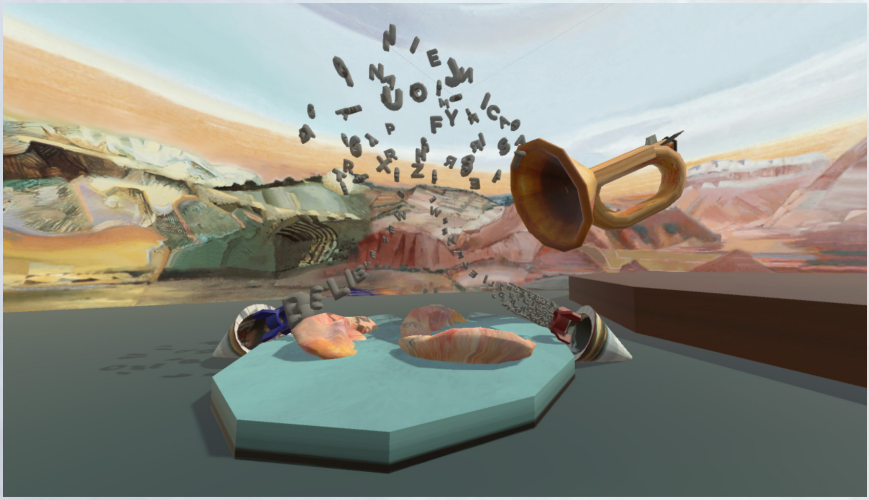
2018: 2 Minutes to Midnight

World leaders have failed to respond effectively to the looming threats of nuclear war and climate change, making the world security situation as dangerous as it has been since 1953 in the early days of the Cold War. The greatest risks arise in the nuclear realm. North Korea's nuclear weapons program has made remarkable progress, increasing risks to North Korea itself, other countries in the region, and the United States.



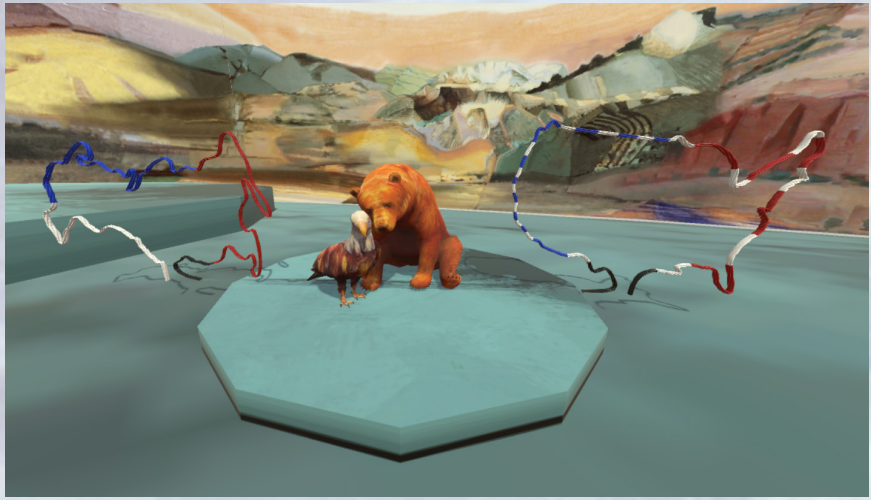
Station 2018; VR Tour through the Doomsday Clock, 2018

Hyperbolic rhetoric and provocative actions by both North Korea and the United States have increased the possibility of nuclear war by accident or miscalculation.



Station 2018; Reigning in Reckless Rhetoric, 2018

But the problems brewing on the Korean Peninsula are not the only nuclear risks evident: The United States and Russia remain at odds, military exercises along the borders of NATO continue, both sides are upgrading their nuclear arsenals, and the future of arms control negotiations is uncertain. In South Asia and the Middle East, the nuclear landscape seems equally perilous.

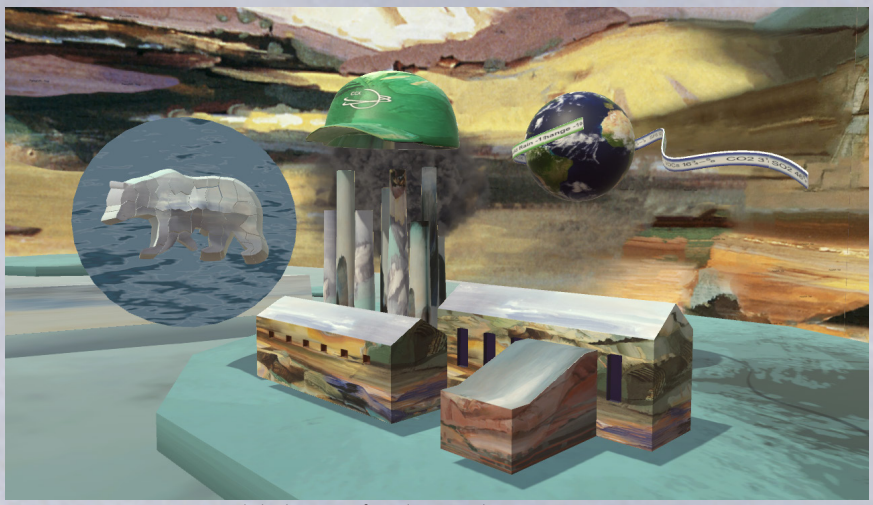


Station 2018; Negotiate with North Korea, 2018

The US questions the utility of the Joint Comprehensive Plan of Action, an internationally negotiated agreement to limit the military applications of Iran's nuclear program. International partners scramble to preserve it, arguing strongly that the world is made safer by the deal, and improving upon it, rather than walking away from it.

Station 2018; Stick with the Iran deal, 2018

On the climate change front, the dangers seem less immediate, but avoiding catastrophic temperature increases in the long run requires urgent attention.



Station 2018; Insist on global action for climate change, 2018

CRISPR-Cas9: A Ray of Light, Video, 8 mins

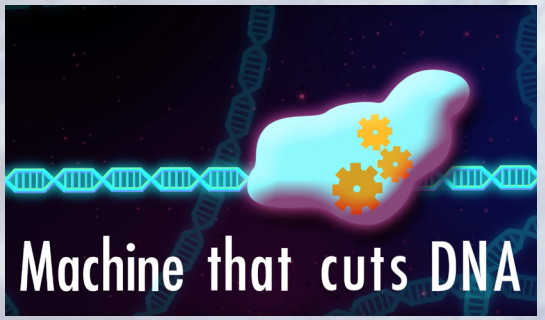
A Ray of Light brings the microscopic machinery of CRISPR-Cas9 to life and the person that inspired it.

Caleb using the RPM Letter Board

A Ray of Light still shot, 2017, Ellen Sandor and (art)[n]

In the background: *(Brain + Love) left and (Brain + Love)* right, produced in collaboration with Raun K. Kaufman, Autism Treatment Center of America: The Son-Rise Program and Cynthia K. Thompson and Sladjana Lukic, Northwestern University

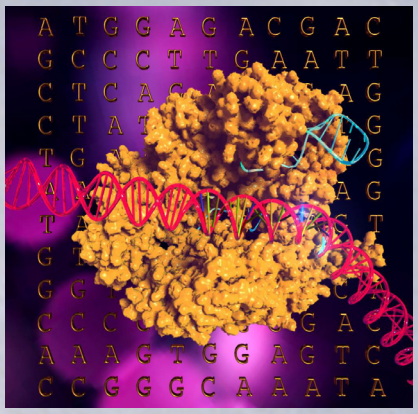
A Ray of Light still shot, 2017
Jennifer Doudna
Co-inventor of CRISPR-Cas9 Technology
Chair in Biomedical and Health Sciences at UC Berkeley



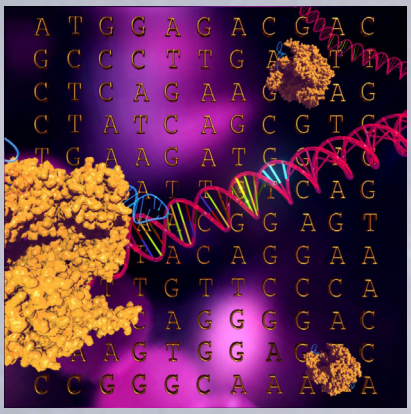
A Ray of Light still shot, 2017
Ellen Sandor and (art)[n]
Special Thanks to
Melissa Sage Fadim
and Terry Hesser

CRISPR-Cas9: A Ray of Light

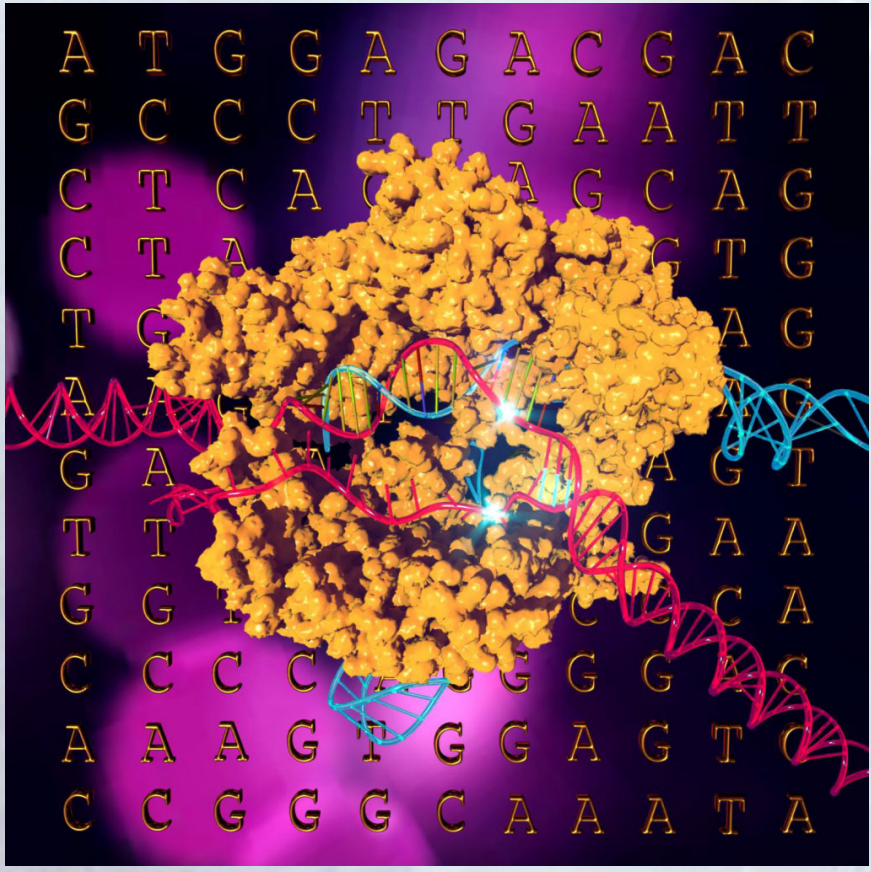
Each panel depicts a different stage of CRISPR-Cas9 genome editing to replace a harmful mutation. First, the RNA-guided Cas9 protein searches for its matching DNA target. Next, the guide RNA pairs with one strand of the target DNA, and then Cas9 cuts both strands. Finally, the cell's repair machinery seals up the break by patching in a stretch of healthy DNA.



CRISPR-Cas9: A Ray of Light, Panel 1



CRISPR-Cas9: A Ray of Light, Panel 2



CRISPR-Cas9: A Ray of Light, Panel 3

CRISPR-Cas9: A Ray of Light, 2017
Ellen Sandor and (art)^n, Chris Kemp, Diana Torres, Azadeh Gholizadeh
Special Thanks to Caleb Sandor Taub
33 x 33 x 62 inches
Virtual Photograph/Digital PHSCologram Sculpture, Duratrans, Kodalth, Plexiglas

Collaborative Artists:
Jennifer Doudna, The Doudna Lab: RNA Biology, UC Berkeley
Megan Hochstrasser, Innovative Genomics Institute, UC Berkeley

Ellen Sandor
Founding Artist and Director, (art)^n

Ellen Sandor is a New Media artist and Founder/Director of the collaborative artists' group, (art)^n. In 1975, she received an MFA in Sculpture from the School of the Art Institute of Chicago. Her time at SAIC led her to be inspired by photography, sculpture, and video, and intrigued by the spiritual nature of Outsider Art. In the early 1980s, Sandor had the vision to integrate these things with other art forms, including computer graphics that resulted in a new medium she called PHSCologrames, which are 3D barrier-screen computer-generated photographs and sculptures.

Because PHSCologrames are a collaborative endeavor, Sandor has had the good fortune to work with an incredible group of gifted artists, scientists, technologists, and thinkers. These collaborators hail from distinguished institutions and universities including: The Scripps Research Institute, NASA Ames, Langley and Lewis Research Centers, JPL, and the University of Illinois. Some acclaimed artists Ellen and (art)^n have worked with include: Ed Paschke, Karl Wirsum, Christopher Landreth, Martyl and Claudia Hart. All these collaborators have shared her enthusiasm for utilizing technology to push conceptual and technical boundaries within the arts.

The works of (art)^n are in the permanent collection of the Art Institute of Chicago, Santa Barbara Museum of Art, International Center of Photography, University of Oklahoma, Smithsonian Institution, Victoria & Albert Museum, and others. Commissions include City of Chicago Public Art Program, State of Illinois Art-in-Architecture Program, and SmithBucklin Corporation. Sandor co-authored U.S. and international patents awarded to her for the PHSCologram process.

She also co-authored papers that have been published in Computers & Graphics, IEEE, and SPIE. She is an eDream Affiliate and Visiting Scholar of Culture & Society, National Center for Supercomputing Applications, University of Illinois, Urbana-Champaign; Affiliate Graduate Faculty, University of Arkansas at Little Rock; Secretary, Board of Eyebeam; and Advisory Board Chair, Gene Siskel Film Center, School of the Art Institute of Chicago.

She serves on the Board of Governors, School of the Art Institute of Chicago and is a Life Trustee of the Art Institute of Chicago. In 2012, she received the Thomas R. Leavens Award for Distinguished Service to

the Arts through Lawyers for the Creative Arts, and in 2013, received the Gene Siskel Film Center Outstanding Leadership Award. Sandor is also co-founder of the Richard and Ellen Sandor Family Collection, and in 2014, was awarded an Honorary Doctorate of Fine Arts from the School of the Art Institute of Chicago. She was awarded Fermilab's Artist in Residence for 2016. In 2017, she was honored by the *Bulletin of the Atomic Scientists* for her longstanding commitment to integrating art and science. She is a co-editor and contributor to *New Media Futures: The Rise of Women in the Digital Arts* (2018) published by the University of Illinois Press.

Carolina Cruz-Neira

co-inventor of the CAVE and the original developer of the CAVELibs

Carolina Cruz-Neira is known as the co-inventor of the CAVE and the original developer of the CAVELibs. She spearheaded the open-source virtual reality (VR) application program interface (API) movement with the development of VR Juggler and has been an advocate of best practices on how to build and run VR facilities and applications. She is also known for conceiving, developing, and operating large-scale virtual reality research centers, such as the Virtual Reality Applications Center (VRAC) at Iowa State University and the Emerging Analytics Center at the University of Arkansas–Little Rock, as well as for implementing innovative graduate degree programs aligned with the centers' activities. She has chaired several international conferences, given over one hundred keynote addresses, served on a number of review boards for national and international funding agencies, and participated in technology advisory task forces in countries around the world, defining the research directions of her field. Many of her former students are now doing leading work in VR at places such as Unity Labs, Intel, Microsoft Research, Google, DreamWorks, EA, Deere & Company, Boeing, Sony Pictures Imageworks, and Argonne National Laboratory.

Beyond her academic career, Dr. Cruz is a business entrepreneur. She cofounded Glass House Studio and Infiscape Corporation. She serves on several industry advisory boards and has performed corporate consulting for companies around the world due to her expertise and visionary take on virtual reality. She has also designed and produced stage performances and public exhibits in New York, Chicago, Los Angeles, Orlando, Madrid, Barcelona, Florence, Paris, and other places, combining

technology, dance, theater, and art. Among her many achievements, *Business Week* magazine named Dr. Cruz a "rising research star" in the new generation of computer science pioneers. She received the Boeing A. D. Welliver Award in 2001, the Virtual Reality Technical Achievement Award from the IEEE Society in 2007, the Career Achievement Award from the International Digital Media and the Arts Association in 2009, and the Arkansas Research Alliance Scholar Award in 2014. She was inducted as Eminent Engineer by the Tau Beta Pi Engineering Honors Society in 2002 and inducted as a Computer Graphics Pioneer by the ACM SIGGRAPH society in 2003.

Dr. Cruz has a PhD in electrical engineering and computer science (EECS) from the University of Illinois at Chicago (UIC) (1995) and a master's degree in EECS at UIC (1991). She graduated cum laude in systems engineering at the Universidad Metropolitana at Caracas, Venezuela, in 1987. She is a featured contributor in *New Media Futures: The Rise of Women in the Digital Arts*.

Martyl

Artist and Designer of the Iconic *Doomsday Clock*

Martyl (1917-2013) was both a celebrated landscape artist and the renowned designer of the *Doomsday Clock* (1947), commissioned by the *Bulletin of the Atomic Scientists* at the University of Chicago. Being an artist member of a scientific culture, Martyl is without predecessors for bridging a gap between the two creative spheres. In the 1960s, she created early experimental "synaptic" artworks she produced with Mylar that merged artistic processes with scientific themes. Martyl's works are in the permanent collection of the Art Institute of Chicago, Whitney Museum of American Art, Brooklyn Museum, Illinois State Museum, Los Angeles County Museum of Art, Smithsonian National Museum of American Art, Oriental Institute of the University of Chicago, and St. Louis Art Museum, with more than 100 solo exhibitions at Printworks Gallery in Chicago and others throughout the United States. Martyl was married to nuclear physicist Alexander Langsdorf Jr. and had two daughters, Suzanne and Alexandra, four grandchildren, and two great-grandchildren. A native of Missouri and longtime resident of Illinois, Martyl preserved the landmark home and studio of modernist architect Paul Schweikher in Schaumburg, Illinois, where she continued to reside and work until her death on March 26, 2013. She is a featured contributor in *New Media Futures: The Rise of Women in the Digital Arts*.

(art)^n Collaborators

Diana Torres started working with (art)^n as a 3D artist in 2011; she currently is the studio director of the collective. Torres is an interdisciplinary artist from Colombia whose work includes animations, illustrations, paintings, drawings, and sound. She has exhibited and screened her work in Europe, Australia, USA, and South America. A graduate of Interlochen Arts Academy in visual arts and classical piano, Diana received an MFA from the School of the Art Institute of Chicago in 2012.

Azadeh Gholizadeh started working with (art)^n as a 3D artist in 2017. Born in Tehran, Azadeh received her MA in architecture from Iran University of Science and Technology (IUST) in 2009, and her MFA from the School of the Art Institute of Chicago in 2012. She has participated in group shows at Hyde Park Art Center, Heaven Gallery and Goldfinch's Flat File among others. In her current practice she explores tensions and challenges of diaspora as a way to reach towards places and identities that can't be articulated by words. Gholizadeh was a resident at the BOLT Residency and ACRE.

Emerging Analytics Center, University of Arkansas at Little Rock Team
Jason Zak, Senior 3D Artist
Tanner Marshall, Undergraduate Research Assistant
Jaimes Kruzt, Undergraduate Research Assistant
Carsten Neumann, Senior Graphics Developer
Thomas Coffin, Senior Operations Manager
Dr. Carolina Cruz-Neira, Director of the Emerging Analytics Center

Panorama view, (art)^n Labratory

Bulletin of the Atomic Scientists
Background and Mission: 1945 - 2018

The *Bulletin of the Atomic Scientists* engages science leaders, policy makers, and the interested public on the topics of nuclear risk, climate change, and disruptive technologies. They do this through an award winning journal, iconic *Doomsday Clock*, public-access website, and a regular set of convenings. With smart, vigorous prose, multimedia presentations, and information graphics, the *Bulletin* puts issues and events into context and provides fact-based debates and assessments. For more than 70 years, the *Bulletin* has bridged the technology divide between scientific research, foreign policy, and public engagement.

The *Bulletin* was founded in 1945 by Manhattan Project scientists who "could not remain aloof to the consequences of their work." The organization's early years chronicled the dawn of the nuclear age and the birth of the scientists' movement, as told by the men and women who built the atomic bomb and then lobbied with both technical and humanist arguments for its abolition.

Today, the *Bulletin* is an independent, nonprofit 501 (c) (3) organization. With their international network of board members and experts, the *Bulletin* assess scientific advancements that involve both benefits and risks to humanity, with the goal of influencing public policy to protect our planet and all its inhabitants.

The *Bulletin*'s website is a robust public and research-oriented source of detailed reports and cogent analysis from the scientists and experts who are directly involved. It receives an average of more than 230,000 visits per month. The bimonthly magazine, which can be found in more than 15,000 leading universities and institutions worldwide, attracts a large number of influential readers. About half of the *Bulletin*'s website and journal readers reside outside the United States. Half of the visitors to its website are under the age of 35.

The *Bulletin*'s signature strength is its capacity to synthesize and inform by linking critical issues, treaty negotiations, and scientific assessments to threats represented by the iconic *Doomsday Clock*. The Clock attracts more daily visitors to its site than any other feature, and commands worldwide attention when the *Bulletin* issues periodic assessments of global threats and solutions.

In 2007 the *Bulletin* won the National Magazine Award for General Excellence, the magazine industry equivalent of an Oscar for Best Picture. The *Bulletin* also was named one of four 2009 finalists for the Lumity Technology Leadership Award, an award presented by Accenture to a nonprofit organization that is effectively applying innovative technologies. Today, the *Bulletin* supplements its cutting-edge journalism with interactive infographics and videos, and amplifies its message through social media platforms.

CAVE-in-a-BOX

The CAVE-in-a-Box, developed at the University of Arkansas at Little Rock, is a consumer social VR system. It consists of a self-standing screen structure that creates an immersive room that up to five people can occupy comfortably. The structure is lightweight and easy to set up, dismantle, and transport, making it ideal for projects that need to be experienced by small groups and for installations that need to travel to multiple locations, such as art shows, temporary museum installations, customers sites, and trade shows. Current VR technologies require goggles and helmets that hinder the face-to-face sharing of the virtual space and therefore limit the social interaction of users during the experience. The CAVE-in-a-Box is specifically designed to enable group virtual reality experiences and to be easily moved to different locations so the experience can reach a larger audience.

The CAVE-in-a-box is a single system, ready to be used "off-the-box" as it comes with a high-end computer workstation and a developer's SDK to create engaging social VR applications. The SDK is compatible with existing VR SDKs, so applications already running on other VR systems, like popular goggles and helmets, will easily port to the CAVE-in-a-box. This new generation of immersive room brings the power of the original CAVE systems to the consumer Pro market, making social VR an affordable, simple, and truly usable technology.

(art)^n PHSCologrames

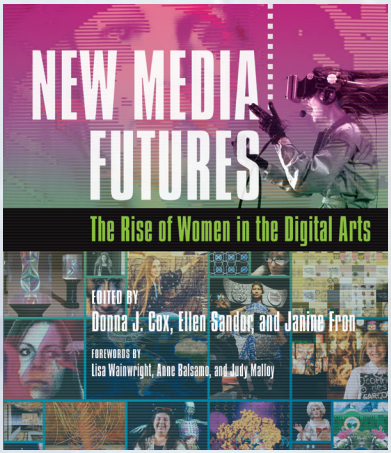
PHSCologram (pronounced skol-o-gram) is a new media acronym for photography, holography, sculpture and computer graphics. A number of rendered views of a virtual scene are digitally interleaved, in which the first line of every image is combined with the corresponding first line, and so forth until a recombined single image is made. This blurring of images into a single piece is attached to a line screen–a black piece of film with corresponding clear lines that is afixed to a piece of plexiglas, and allows a viewer to interpret the digital photograph as a three-dimensional sculptural object when backlit. The PHSCologram process is patented and was licensed by Picker International and 3M.

Commissioned projects include works in Smithsonian Insitution, Museum of Contemporary Art Chicago, Santa Barbara Museum of Art, Museum of Jewish Heritage, International Center for Photography, City of Chicago Department of Cultural Affairs Public Art Program and State of Illinois Art-in-Architecture Program. Museum collections include Art Institute of Chicago; Roger Brown Study Collection, School of the Art Institute of Chicago; Fred Jones Jr. Museum of Art, University of Oklahoma; Brauer Museum of Art, Valparaiso University; Chazen Museum of Art, University of Wisconsin-Madison; Union League Club of Chicago; Museum of World Culture; Buckminster Fuller Institute; National Academy of Sciences; and Musée Carnavalet Paris.

(art)^n Virtual Reality

(art)^n's virtual environments are created with Autodesk Maya ®: a three-dimensional computer graphics software that has been used by the collaborative for 20 years. It is a powerful engine where complex modeling and rendering tools help create creative three-dimensional images and animations. The development of the virtual environments and programming are created with Unity 5: a development platform primarily known for creating games. This software provides a rich ecosystem that allows the artist to weave together nearly every form of digital asset–images, three-dimensional models, audio, and more – with a powerful object-oriented scripting language allowing for boundless creativity. The virtual worlds created with these two engines allow players to interact with and navigate them by using the Oculus Rift. These immersive simulations of three-dimensional environments are controlled by the movement of the body.

New Media Futures
The Rise of Women in the Digital Arts
Blazing artistic trails through the digital age
Book signing, May 11, 6 - 8 p.m.



Trailblazing women working in digital arts media and education established the Midwest as an international center for the artistic and digital revolution in the 1980s and beyond. Foundational events at the University of Illinois and the School of the Art Institute of Chicago created an authentic, community-driven atmosphere of creative expression, innovation, and interdisciplinary collaboration that crossed gender lines and introduced artistically-informed approaches to advanced research.

Interweaving historical research with interviews and full-color illustrations, *New Media Futures* captures the spirit and contributions of twenty-two women working within emergent media as diverse as digital games, virtual reality, medicine, supercomputing visualization, and browser-based art. The editors and contributors give voice as creators integral to the development of these new media and place their works at the forefront of social change and artistic inquiry. What emerges is the dramatic story of how these midwestern explorations in the digital arts produced a web of fascinating relationships. These fruitful collaborations helped usher in the digital age that propelled social media.

Contributors: Ellen Sandor, Donna Cox, Carolina Cruz-Neira, Collen Bushell, Nan Goggin, Mary Rasmussen, Dana Plepys, Maxine Brown, Martyl Langsdorf, Joan Truckenbrod, Barbara Sykes, Abina Manning, Annette Barbier, Margaret Dolinsky, Tiffany Holmes, Claudia Hart, Brenda Laurel, Copper Giloth, Jane Veeder, Sally Rosenthal, Lucy Petrovic and Janine Fron.

Contributing Artists 1983 - 2018

Ben Carney
Michael Cone
Chris Day
Miguel Delgado
Janine Fron
Nick Gaul
Azadeh Gholizadeh
Randy Johnson
Gary Justis
Chris Kemp
Pete Latrofa
Jack Ludden
Todd Margolist
Nichole Maury
TJ McLeish
Thomas Meeker
Stephan Meyers
Keith Miller
Fernando Orellana
Sabrina Raaf
Mark Resch
William Robertson
Mike Siegel
Dan Sandin
Diana Torres
Dien Truong
Gina Uhlmann
Jim Zanzi

Major Individual Collaborators

Stephanie Barish
Geoffrey Baum
BINO & COOL
Steve Boyer
Benjamin Chang
Donna Cox
Carolina Cruz-Neira
Charles Csuri
Tom DeFanti
Margaret Dolinsky
Michael Dunbar
Andre Ferella
Barry Flanary
George Francis
Phillipe Paul Froesch
Carla Gannis
David Goodsell
Gero Gries
Anton Hand
Claudia Hart
Mr. Imagination
Chris Landreth
Robert Lostutter
Gerhard Mantz
Feng Mengbo
Ron Nielsen
TJ O'Donnell
Arthur Olson
Ed Paschke
Bob Patterson
Dana Plepys
Maggie Rawlings
Miroslaw Rogala
Cynthia Beth Rubin
Dan Sandin
Larry Smarr
Lisa Stone
Margaret Watson
Karl Wirsum
Zhou Brothers

Gallery Affiliations

Maya Polsky Gallery
Chicago, IL
1997 - 2015

Galería Arteconsult
Panama City, Panama
2010-12

Kasia Kay Art Projects
Chicago, IL
2007 - 2009

Jean Albano Gallery
Chicago, IL
2000 - 2006

Oskar Friedl Gallery
Chicago, IL
1995 - 2006

Rhona Hoffman Gallery
Chicago, IL
1993 - 1994

Feature Inc.
New York, NY
1985 - 1993

Major Institutional and Corporate Collaborators

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Johnson & Johnson Pharmaceutical Research & Development, L.L.C.
Lawrence Berkeley Lab
Monsanto Corporation
NASA Ames, Langley, and Lewis Research Centers
San Diego Supercomputing Center
The Scripps Research Institute
UCLA School of Medicine
USAE Waterways Experiment Station
University of Illinois
Yale University
Fermi National Accelerator Laboratory
The Doudna Lab, UC Berkeley
Innovative Genomics Institute, UC Berkeley
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Collections

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Museum of Contemporary Art, Chicago

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Museum of Jewish Heritage - A Living Memorial to the Holocaus

Northwestern University

University of Chicago
Ed Paschke Art Center

Keck Center Gallery, National Academies

LUMA- Loyola University Museum of Art

Victoria and Albert Museum

Santa Barbara Museum of Art

Union League Club of Chicago

Chazen Museum of Art, University of Wisconsin-Madison

Brauer Museum of Art, Valparaiso University

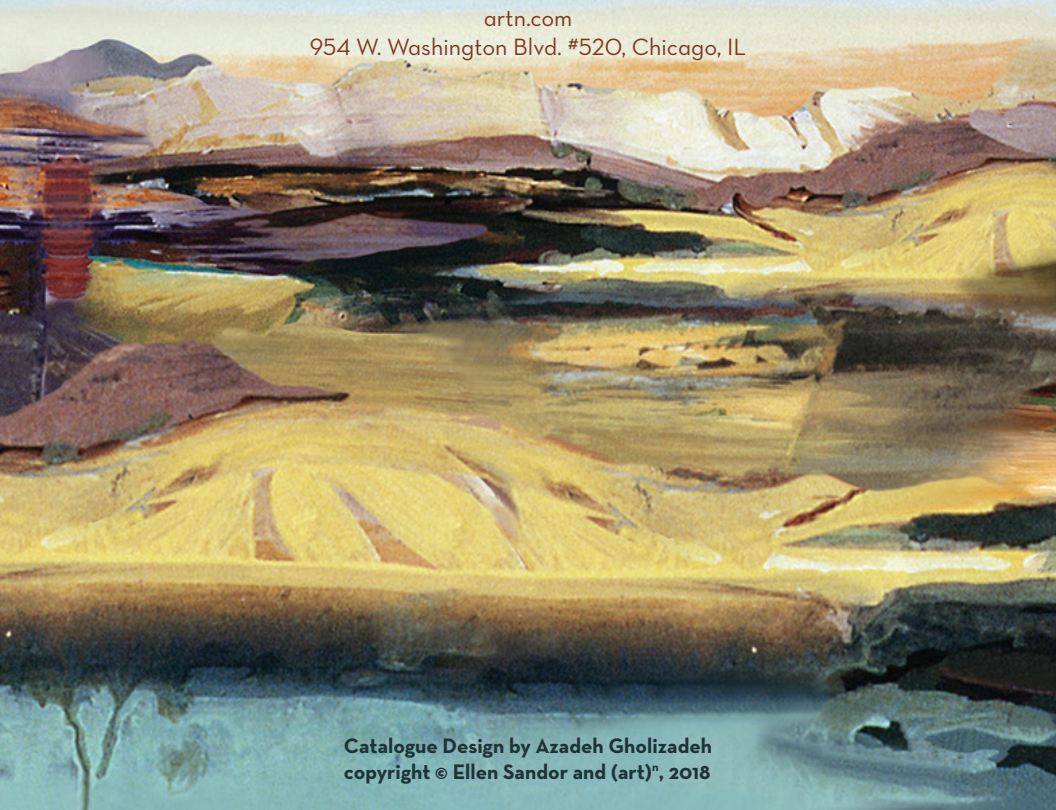
Centre of Contemporary Art, Warsaw

Roger Brown Study Collection, School of the Art Institute of Chicago

Weinberg/Newton Gallery
weinbergnewtongallery.com
300 W. Superior St, #203, Chicago, IL

Bulletin of the Atomic Scientists
thebulletin.org
1510 E. 55th Street, Chicago, IL

(art)^n
artn.com
954 W. Washington Blvd. #520, Chicago, IL



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