

EASTERN CONNECTICUT STATE UNIVERSITY

THE
ART
GALLERY
Curatorial Programs



MARGOT GLASS, *Dandelion*, 14 karat gold on prepared paper, 12 x 9 inches, image courtesy of Garvey | Simon, New York, 2020.

PRECISION: ILLUSTRATIVE TECHNIQUE IN ART AND SCIENCE

March 15 — April 25, 2021

Opening Reception March 22, 2021 at Noon

Precision: *Illustrative Technique in Art and Science* brings together 27 artists who are inspired by one goal – to explain scientific facts through evocative visual language. They begin with abstract concepts and transform them into tangible marks of pencil, brush and photo emulsion¹ that yield artworks that seduce us intellectually and emotionally. We are empowered to comprehend and delight in the realm of scientific knowledge.

Precision is rooted in the polarities of cognitive and somatic, unique and mass produced, subjective and objective. These interactions are the core thematic for our artists, who are devoted to *careful* study of scientific facts, data and natural phenomena. Scrupulous visualizations of neurons, cells, plants, human anatomy, geology, astronomy and consumer patterns render the latest scientific discoveries. Discoveries that often only exist in the formulas of researchers until artists perform their magical visualizations.

“Science demands that phenomena be observed with the unemotional accuracy of a weighing machine,” instructs English painter Harold Speed. This “cognitive art” features graphs, charts, diagrams and maps. The biological renderings of Mark Lefkowitz, Patricia Cassady and Carol Schwartz convey the exactitude required by specialized textbooks dedicated to professional and academic audiences. But in the gallery setting, freed from their utilitarian agenda, their artistry can be fully appreciated.

The fine artists in this exhibition start from the same rigorous facts, but quickly detour into the world of emotional engagement and metaphor – and what bright and splendid visions result! They offer unexpected juxtapositions (Angela Su and Ellen K. Levy), shifting time frames (Anton Van Dalen and Aga Ousseinov) that stun the viewer with unexpected meanings. Historically the fine arts looked down on “illustration” considering it merely utilitarian. Today, that distinction has blurred with the growing appreciation and respect for graphic novels, comics and animation.

Over the centuries, the dialectic between the arts and sciences has moved like a pendulum between rivalry and close accord. If artists and scientists prior to Leonardo deployed science and art to support supernatural, religious beings, artists after Leonardo copied human anatomy as a means to empower man with self-knowledge that would guide him to a higher spiritual truth. These disciplines cannot exist without each other, although they continually battle for primacy. This struggle for primacy is richly evoked in the current exhibit.

The cultural world marks C. P. Snow’s 1959 lecture as a definitive account of the “two cultures” of arts and science. It became a metonym for the prosperous future of consumer society promised by scientists, as

opposed to the Utopian dreams of artists, poets and other like-minded intellectuals. The fight was well timed in the midst of a Cold War era that privileged the role of scientific and technological expertise.² This divide acquired greater urgency in the 1970s, when student anti-Vietnam war activists accused engineers and scientists of being amoral technocrats beholden to the destructive technology of the “military-industrial complex.”

None withstanding this disillusion, since the time of Snow’s essay artists have concerned themselves with building rapport between science and the humanities. The New York-based group Experiments in Art and Technology, co-founded in 1966 by engineer Billy Klüver and artist Robert Rauschenberg, was one of them. E.A.T. helped connect engineers and artists and carried out a series of high-profile art-and-technology programs. In 2017, several E.A.T. collaborations that were re-staged at New York’s Fridman Gallery, confirmed that the sciences have still not freed themselves from support our military establishment.³ NASA Artists in Residence (terminated 2005), CAST (Center for Art, Science and Technology) at MIT, and the Antarctic Project are a few of the remaining initiatives that mix artistic passion with scientific experimentation: *Precision* follows in their footsteps.

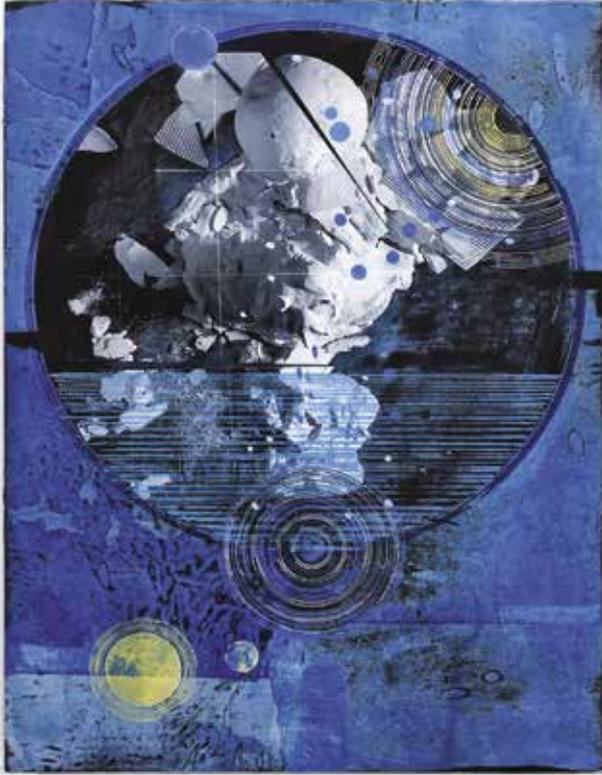
Connecticut has produced many excellent artists whose work bridges brain and heart. Orra White Hitchcock’s highly accomplished renderings of the natural scenery of the Connecticut river valley were essential to her husband’s many geology publications.⁴ Murray Tinkelman has built the graduate program in illustration at the University of Hartford. His quirky visions of futuristic machines have provided lifelong inspiration for its graduates, among them, Carol Schwartz and Laura Lee, professors of Illustration at Eastern, who explore the depth of emotions behind scientific rendering. These are just some examples that affirm scientific illustration as an art medium par excellence.

Interestingly, “Precisionism” was the first modern art movement in the United States. In 1927 Alfred H. Barr, founding director of the Museum of Modern Art, hailed Precisionists as artists deploying the geometric scrutiny of Cubism with the exactness of photography. Precisionists sought to simplify and distill, rendering a reality straight from the assembly line: rigid, unambiguous and – as the movement’s name indicates – precise.⁵ Similarly, in our exhibition, a detailed examination of scientific discoveries and natural phenomena is merely an invitation to revel in the artistic imagination. The artists teach us that in the world of illustrative technique there is only one culture: where artists deploy accuracy and illustrators convey passion. ■

Yulia Tikhonova

Coordinator of Gallery and Museum Services, 2021

I ASKED THE ARTISTS “WHAT DOES PRECISION MEAN TO YOU?” THEY ANSWERED AS FOLLOWS:



AGA OUSSEINOV, *Are There Rays of Cold?*, mixed media on wooden panel, 12 x 9 inches, 2019.

AGA OUSSEINOV “In regards to my own work, I see precision as the exact implementation of an idea, no matter how absurd this idea may seem to others. Underneath all the chaos that has formed both in the modern world as well as the current state of the art world there is a certain precision that lies beneath it. My work attempts to find a balance between precision, that is almost scientific, and willful chaos that is commonly found in creativity.” www.agaousseinov.com/bl/

A master of visual solutions and an esteemed educator and historian, **MURRAY TINKELMAN** (1933-2016) embarked on his life’s journey through art in the heart of Brooklyn, New York, where the world’s richness and diversity was always close at hand. As a boy, his bustling Brownsville apartment building housed 112 families on six crowded floors and offered early inspiration — incinerator rooms filled with cast-off newspaper comics and coveted Saturday Evening Post magazines that had been destined for recycling during World War II. Illustrations from publications deemed too conservative for his father were smuggled into his room under cover, treasures to be studied and savored, from the serial strips of Hal Foster and Alex Raymond to the cover illustrations of Norman Rockwell. Drawing, pursued with devotion and tenacity through the years, was an integral part of Tinkelman’s youth.

My name is **VIRGINIA LEE MONTGOMERY** and I use precision in my work as a video artist, stone sculptor and visual storyteller to create artworks that do three things: explore the philosophical relationship between physical and psychic structures, conjure agency for myself and my collaborators and inspire within others a surrealist wonder for the world. Across my diverse art practice, a necessary skill that I employ to address the Technical needs of video production (ie., creating storyboards, shooting footage, editing material, syncing sounds and producing a finished film) is precision. Without the use of precision my video artwork cannot come manifest. For contrast, abstract-expressionist Jackson Pollock may have had the privilege of randomly throwing paint on a canvas to make his artwork, but as a working woman video artist of today, I do not have this easy privilege. I cannot simply throw my DSLR video camera against the wall and expect the nuanced poetics of a finished “VLM” video artwork to come out of such nonsensical violence. No. Instead I employ my studio skills in craft, storytelling and precision. Like a witch, my work is marked by its intentionality, intellectualism and care, all of which are qualities I honed via a practice of studio magic and willed precision.” virginialeemontgomery.com/



MURRAY TINKELMAN, *Beasties*, 1970.
Image courtesy of the artist.

VIRGINIA LEE MONTGOMERY,
Cut Copy Sphinx, HD
video, 03:30, 2018.

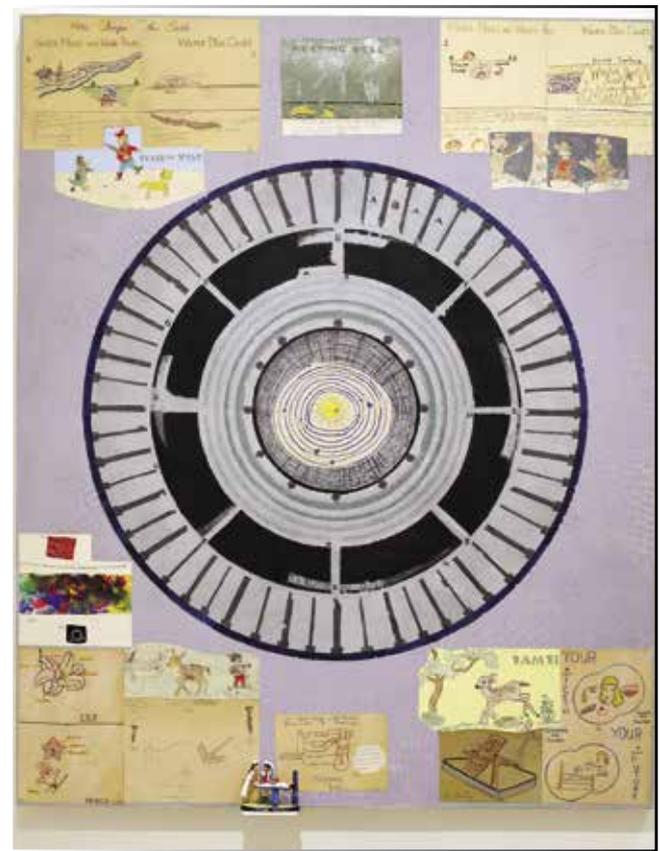


JOYCE KOZLOFF “*Precision: Illustrative Techniques in Art and Science*: I’m smiling at this question. My work is detailed, without being terribly precise! Right now, I’m copying Civil War battle maps, and their intricacy is mind boggling. I try to do justice to them, because they are full of information that fascinates me. The tiny, almost invisible place names are almost entirely Anglo-Saxon, for instance, the United States. before so many waves of immigration. The painting in this show, “Science and Sentimentality,” includes drawings I made for science projects between the ages of 9 to 11, saved by my pack rat mom. They aspired to precision but failed woefully — still, a valiant try! The drawings surround a diagram of a panopticon prison, an 18th-century architectural construct then considered progressive, which proved to be cruel and inhumane.” www.joycekozloff.net/

PATRICIA CASSADY “Precision means a couple of things to me as it relates to my working method. Precision is important when I am depicting the subject matter I am observing accurately on paper and with the medium I am using since I typically create scientific illustrations. I feel it is very important to have the correct materials in order to convey this accuracy, thus being able to inform and educate the public about the subject matter I have chosen. Scientific illustration is based on precision and accuracy, therefore the materials I prefer to use are pen & ink on smooth surface Bristol paper and controlled watercolor on hot press watercolor paper.”

GARY RAHAM “Scientific illustration presents unique challenges. An artist must create work that results in an “Oh, my!” moment for the observer, but also an “Oh, I see!” moment of clarity and realization. In my case, scientific illustration presents the satisfying challenge of using my left brain to get all the scientific details correct and my right brain to come up with a new and satisfying way to have the observer say, “Oh, my. Now I see what is happening clearly. And it’s beautiful!” Illustrating science fiction in ways that do not violate science fact — as we understand it at the time the work is created — presents an additional challenge: ignite a sense of wonder in the viewer that hints at possible futures within their power to deny, fully realize or contemplate for the very first time.”

Gary Raham is an author and illustrator, loves to bring science alive — especially paleontology — through his writing and illustrating work. He has written (and in some cases illustrated) 17 titles of science fact and/or science fiction. He serves as assistant editor for Trilobite Tales, the newsletter of the Western Interior Paleontological Society. www.rgarryraham.com



JOYCE KOZLOFF, *Science and Sentimentality*, acrylic and found objects on canvas, 60 x 48 inches, 2017. Image courtesy of the artist and DC More Gallery, New York City.



GARY RAHAM, *Mother Tree Forest*, acrylic on canvas board, 24 x 18 inches.



PATRICIA CASSADY, *Snowy Owl*, watercolor and pen & ink, framed, 22 x 18 inches, 2018.

MARGOT GLASS “Close examination through the act of drawing has always been a method of committing what I see to memory in a way that regular observation alone cannot. Precision allows me to slow down and spend time with the subject matter; my sense of time shifts while drawing in order to capture the detail accurately. I find that my breathing and movement quiet down to adjust to this effort in a way that allows me to focus and tune out the outside world while working. Including detail and precision in my drawings invites the viewer to step close to share in the experience of seeing the subject at hand. I am interested in the history of using plants as ornament in the decorative arts, thinking about delicate filigree designs in traditional decorative and fine arts and the play on the tension between the idealization of natural patterns with the beauty of their actual irregularity, highlighting the detail in all of its imperfection and beauty.”
www.margotglass.com

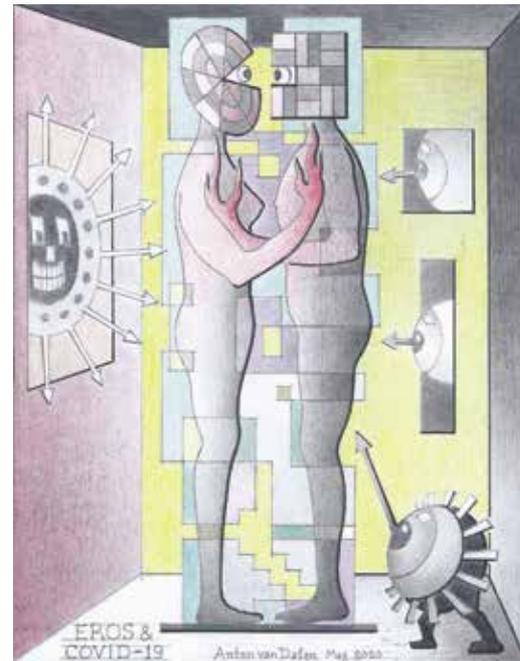
ANTON VAN DALEN “I am pleased to be included in your timely *Precision* exhibition on a fascinating theme. As I write to you below, my work is within a tradition of Dutch culture, a tradition that still sustains me with a sense of understanding towards all forms of life.

I have always been fascinated by the intersection of nature and science, which I learned about as I grew up in my native Holland and my education in Amsterdam. Holland’s cultural history is saturated with bringing these two understandings together. Its man-made landscape, developed over many centuries, is the epitome of that tradition. Both bookends of that history were brought together as a mathematical equation. Evidence of that can be found in every form of their architecture and community planning. That measured collaboration with the natural world is also reflected in their fine arts. With great precision they overlaid their modest reality with a grand universe. Examples of that intellect are the artists Johannes Vermeer and Piet Mondrian.” www.antonvandalen.com/

ELLEN K. LEVY “I am entirely in agreement with architect Nat Chard who defined precision as “the fabrication of a seduction.” For me, precision is capturing something unfolding, unnameable, yet weirdly realistic and tangible — a provocation by a form that could be misidentified as fully known. Precise alignment, positioning and scaling of indeterminacy can allow for improvisation, seemingly its opposite. For example, by incorporating patented drawings I intend to shift attention from a given innovation’s commercial viability and novelty to its deployment and possible repercussions.”
www.complexityart.com/



MARGOT GLASS,
Grasses, 2019
 Graphite on paper,
 12 x 9 inches. Image
 courtesy of Garvey I
 Simon, New York, 2021.



ANTON VAN DALEN,
Eros & Covid-19,
 Prismacolor pencil,
 graphite pencil
 and india ink on
 Strathmore paper,
 11 x 8.5 inches, 2020.



ELLEN K. LEVY,
Safe in Space,
 print and mixed
 media on paper,
 40 x 60 inches, 2020.

ANGELA SU “The pseudo-scientific images I created oscillate between the real and the fantastical. They combine the precision of scientific sketches with a mythical aesthetic, challenging the audience’s visual sensation of the pleasure of pain, and one’s fascination with the grotesque. Precision in this case is not to convey an authentic representation of the image, rather, it is used to provide a safe space where horror and beauty meet, where taboo can be displayed openly in the name of science.” blindspotgallery.com/artist/angela-su/

ALEXIS DUQUE “I am obsessed with imaginary cities; sometimes I like to depict futuristic architectural metropolises, and other times I am inspired by slums and shanty towns from developing countries, overflowing with crowded objects, exotic nature and furniture in an uncontrollable growth of accumulation and waste. I like to draw. I prime and stretch the canvas directly on the wall so I have the support of a solid and hard surface. Then I start by sketching with a 0.5 ink pen. I draw with sharp lines to define the entire structure of the work. Then I proceed to paint many smooth layers of acrylic paint using mostly very small brushes. Through the drawing of precise lines and intricate compositions, I aim at depicting elements that inhabit clustered spaces where nature repossesses and reclaims human places, sometimes as post-apocalyptic visions or Utopian narratives.” www.alexisduque.net/

SUSAN GAMBLE AND MICHAEL WENYON “There are three pills to be seen in each image. The glass photographic-emulsion coated plate has to rest on these pills for the duration of the exposure. Three points of contact with three pills offers stability. Without stability there is no interference pattern to be bounced off the objects and recorded, any movement would prevent this. The container is carefully rested on top of the plate. All of this is precise. We tap the plate gently in the dark, and listen to make sure it is stable with no vibration.

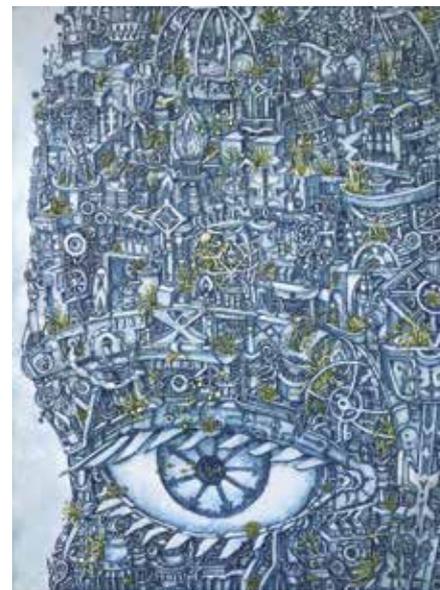
Looking at the image is in itself precise, the details are sharp, as is any dust on the floor or grout between the tiles; all in 3-D. The shadow of the containers in the laser is sharp edged. Moving glints of light on the pills or floor are recorded. The process has a high resolution, a steely quality like a daguerreotype. It is a precision process that developed out of a Cold War electrical engineering laboratory. It is not a soft-edged form of photography. Typically, practitioners of the medium aspire to physics laboratory standards with a ‘vibration isolated table’ for ambitious and ‘clean’ results; but here we have subverted the process. In the COVID era lockdown we were forced to experiment with limited means.

We chose the bathroom for being the smallest, most box-like and therefore stable place — where one might likely survive an earthquake.

But even we were surprised that these holograms functioned at all, and were completely taken aback (even after working with this medium for more than 20 years) by the image of the containers — as seen from the rear.” www.wengam.com



ANGELA SU, *Xylaria polymorpha*, ink on drafting film, unframed, 28.75 x 17.75 inches, 2020. Courtesy of Blindspot Gallery, Hong Kong and the artist.



ALEXIS DUQUE, *The Eye*, acrylic on canvas, 24 x 18 inches, 2020.



SUSAN GAMBLE AND MICHAEL WENYON, *Floored in the Covid Era, 2020: Pills & Bottles*.



CAROL SCHWARTZ, *Gifts from the Sea Table*, gouache, 14.5 x 14 inches, 2019.



CAROL SCHWARTZ, *Pollinator Partnership*, detail, gouache, 2018. Image courtesy of the artist.

CAROL SCHWARTZ “For me, precision means finding a strategy for creating a concept that brings the correct information and a little more, wonder and delight, to the illustration. Of course, composition, tonal values and color are important, too. Adding details that are precise and focused on the educational value establish the quality of a scientific illustration.” www.csillustration.com/

A keen sense of observation unites art and science as the first step in a process of discovery. Scientific and artistic methods have much in common; questioning what is seen, researching to increase one’s knowledge, experimenting to find answers or obtain results. The communication of scientific information can often be enhanced and more easily understood in a visual form that complements written hypotheses, theories or facts. Artists that are trained to be precise and focused on details can visualize and interpret science.

Scientific illustration and scientific art are broad terms. They include an array of fields in the physical and life sciences, as well as social sciences. Examples in this exhibition include art that faithfully documents informational, medical, botanical, zoological or historical topics. There are also artworks displayed that push the boundaries and expanding our thoughts about science. There are a range of styles and mediums displayed. Some styles are simple, others extremely Technical and detailed. Traditional media like watercolor and pen & ink are represented, as well as digital art.

Art associated with science can range, like a sliding scale, from a high focus on science at one end to a high focus on art at the other, with a multitude of variations in between. Scientific illustration’s primary purpose is to convey information, as can be seen in infographics or simple black line drawings in textbooks. The most successful of these give our eyes a little more to linger on. Other scientific illustrations are designed to entice feelings and emotions, as well as to convey information. An example of this is artwork focused on enlightening minds or a call to action, as with extinction or climate change topics. Then there is beautiful scientific art, like a botanical painting, that conveys information but the information maybe somewhat secondary to its beauty.

My entry into the world of scientific illustration came gradually, without a clear path other than science and nature inspiring my art. As an illustrator, projects focused on the natural world for organizations like the National Geographic Society were the most satisfying. I gravitated to illustrating picture books and bringing my love of science to children in award-winning picture books. Working in nonfiction, I have learned how important research is to creating better informed art, as well as art that includes emotion. If I am passionate about a subject, my art is more appealing.

My association with Shoals Marine Laboratory as an Artist in Residence for several years has allowed me to work with marine biologists and their students. Operated by Cornell University and the University of New Hampshire, the Appledore Island learning environment has expanded my understanding of how compatible art and science really are.

Teaching brings my scientific illustration experiences to a whole new group of artists. I carry on sharing best practices and techniques with my students, just as was done for me by educators like Murray Tinkelman, the director of my graduate program. He, too, is represented in this exhibition.

The artists that take on the challenge of creating work that depends on accuracy and precision help us better understand complicated concepts and identify our world. They create a kind of magic where the mind and the heart meet. The two disciplines of art and science, which as first glance seem far apart, actually have a lot in common, and where they meet is so very satisfying.

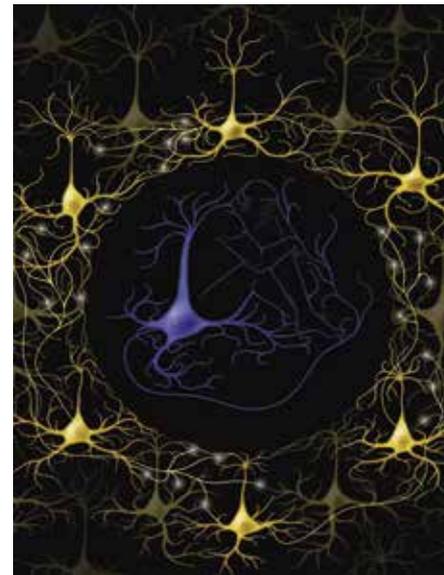
*Carol Schwartz, adjunct faculty
Art and Art History Department, Eastern Connecticut State University*

WENDY CHADBOURNE “Precision — the quality, condition or fact of being exact and accurate. I consider myself an artistic scientific educator. My chosen field of medical illustration calls for a high level of precision in the execution of an illustration. Precision can be measured in many different ways — ranging from anatomical accuracy to the selective use of color to draw attention to a focal point, to the choice of media to be utilized and the skill in which it is applied. Precision can also play a part in less granular measurements such as how clear the information being presented is to the viewer, and if the illustration meets the educational purpose it is intended for.” inkymousestudios.com/

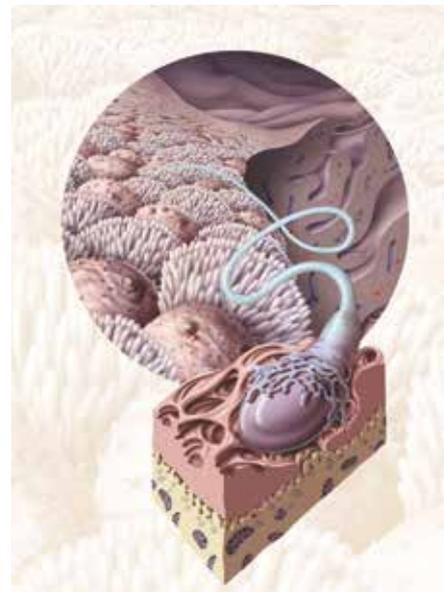
MARK LEFKOWITZ “As a certified medical illustrator, I approach the development and creation of each illustration or animation project with substantial forethought and Techniqueal planning. Precision is essential from the preliminary planning stages through execution and completion of a project. At each step, precision is essential: be it extensive discussion with clients about the focus of their project; subject matter research; creation of preliminary drafts and refined concept images; and, ultimately, final execution of the images, models or animation.” www.biomedicalvisuals.com/

FRANCIS TOPPING “Precision in my work varies according to need. Being accurate, observing details, knowing what is essential are all aspects of precision. My work tends to be more interpretive than for documentation. For a scientific work it would be attention to every last detail since an error can make it a different species and expert scientific collaboration is needed as well as specimens to understand the morphology. Googling images can lead one astray and common names can be attributed to many different species! For an informational kiosk it might not need every last hair but needs to be the correct species and accurately drawn in correct habitat so that it is identifiable, as in the Oak Pine Forest Flora. All of these species may not be seen so close together but all are in this habitat. An illustration can select details, expand them, combine them, show more than a photo where often shadows obscure detail. Precision depends on the goal and degree varies by project. Art and science are intertwined, one helping the other.” www.francestoppingvisuals.com

HYEMI KIM “*City Collage* is a short-looped video collage series. I juxtaposed various city scenes to make utopic landscapes. Each work uses more than 15-20 videos as its sources. Video is a time-based medium and contains movement. Therefore, when I combine videos to create a united landscape, it requires a precise connection of all moving elements. In *City Collage 2*, for instance, I could make a boat float on the lake for a long time by joining several videos seamlessly. The precision of connecting moving images is the key to my magical utopia. Using editing technique as a tool, I accomplish my imagination realizing into the digital world.”



WENDY CHADBOURNE,
Effects of Social Isolation, Illustrating Dorsal Raphe Dopamine Neurons, digital illustration created in Adobe Illustrator CS6, 27 x 33 inches, 2015. Image courtesy of the artist.



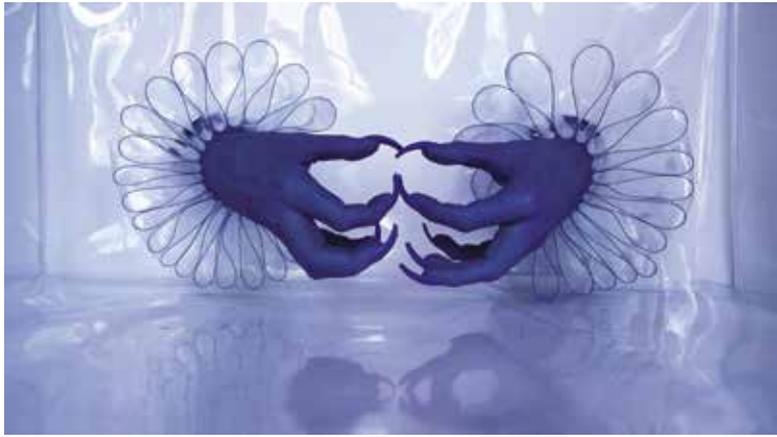
MARK LEFKOWITZ,
Fertilization, 8.5 x 6.5 inches, Photoshop digital painting.



HYEMI KIM, *City Collage*, single channel video, 02:15, 2019. Image courtesy of the artist.



FRANCES TOPPING, *Oak-Pine Forest Flora*, watercolor, 2013.



ROSE NESTLER, *The Weird Sisters*, single channel video, TRT: 02:48, Edition of 5 with 1 AP, 2020. Image courtesy of the artist.

ROSE NESTLER “My work may not be entirely accurate but it’s often precise, meaning every piece I make involves an ecosystem of measurements where all parts rely and relate to each other but may not work outside of the individual sculpture or video. This can be literal — in making *The Weird Sisters* video I had to precisely measure glue and borax to make the right slime consistency, but it can be metaphorical too. I like my work to feel tightly constructed; I achieve that through a high attention to detail and craftsmanship along with a conceptual push to always instill a tension in my work — a tension between holding everything together and letting it all go.” www.rosenestler.com/

JOHN MEGAHAN “To a scientist, precision means repeatedly measuring something and getting similar values. But this does not necessarily mean the measurements are accurate, i.e. close to the real-world value. It is a subtle but important concept. However, in scientific illustration I feel I can take the liberty of saying that precision is equated with accuracy. And often science illustrators must be very precise, but sometimes too much precision can hinder communication, rather than help.” johnmegahan.com/

PATRICIA OLYNYK’s photographs, videos and installations investigate science and technology-related themes and the ways in which social systems and institutional structures shape our understanding of science, human life and non-human life, and the natural world. Working across disciplines to develop “third culture” projects, she often collaborates with scientists, humanists and technology specialists.

Olynyk’s research-based art practice informs her teaching and academic leadership. Prior to joining Washington University in 2007 as Director, Graduate School of Art and Florence and Frank Bush Professor of Art, Olynyk was appointed in the School of Art & Design at the University of Michigan, where she also directed the Penny W. Stamps Distinguished Visitors Program and the Roman J. Witt Visiting Faculty Program. In 2005, she became the first non-scientist appointed to the university’s renowned Life Sciences Institute.

Olynyk is former Chair of the Leonardo Education and Art Forum, a branch of the International Society for the Arts, Science and technology (Leonardo/ISAST). She co-directs the Leonardo/ISAST NY LASER program in New York, which promotes cross-disciplinary exchange between artists, scientists, humanists, and scholars. www.patriciaolynyk.com



JOHN MEGAHAN, *Avian Disease*, digital illustration.



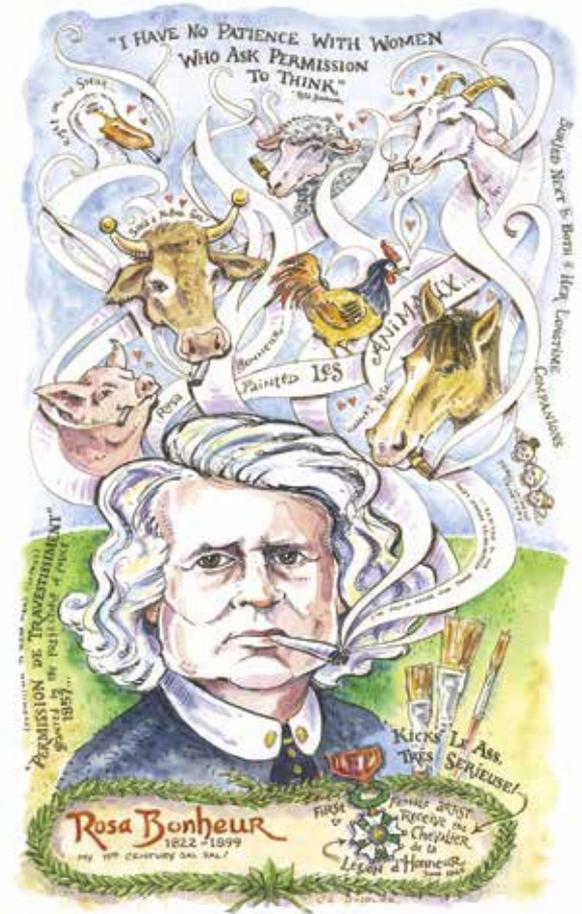
PATRICIA OLYNYK, *Extension II* digital C print on archival paper, 22.25 x 61.25 inches, 2016. Image courtesy of the artist.

CORA LYNN DEIBLER is a Professor and Area Coordinator, Illustration/Animation, Department of Art + Art History, University of Connecticut. Deibler specializes in editorial and children's illustration. She performed as Spider magazine's resident serial artist from January 2004 until 2009. Her work appeared in "Women in Illustration: Contemporary Visions and Voices" and in "Picturing Health," both at the Norman Rockwell Museum in Stockbridge, MA. cldeibler.com/

ERIC DYER is an artist who brings animation into the physical world with his sequential images, sculptures, installations and performances. Dyer continues to reinvent Victorian Era optical devices, exploring topics related to media history, our relationship with technology, kinetics as a form of artistic expression, and the relevance of physical presence in an increasingly digital world. His work has been widely exhibited at events and venues such as the Smithsonian National Gallery of Art, Ars Electronica, international animation festivals in numerous countries, the screens of Times Square, and the Cairo and Venice Biennales. Dyer teaches visual arts and animation at UMBC in Baltimore and is represented by the Ronald Feldman Gallery in New York. www.ericdyer.com/

ANNA LINDEMANN is an Assistant Professor, Digital Media & Design, School of Fine Arts, University of Connecticut. Lindemann is co-director of the three-year UConn Academic Plan Proposal "AntU: How army ants and their guests can inspire synergy across science, fine arts, and the humanities." Lindemann's work combines animation, music, video and performance to explore the emerging field of Evo Devo (Evolutionary Developmental Biology).

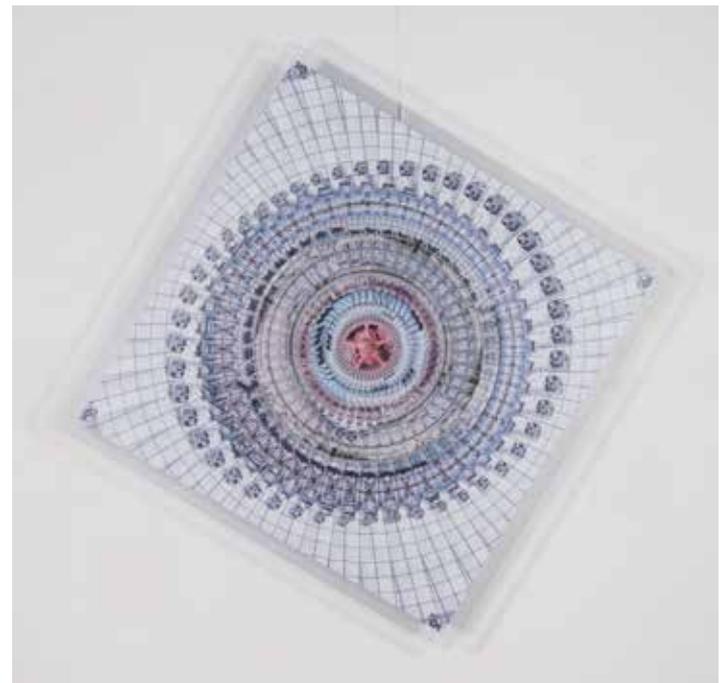
In my work, I simultaneously embrace and resist precision. Most of my work begins with a close examination of scientific literature, which is featured in the credits and program notes of my animations and performances, including the animated short *Ant Sisters*. While I employ abstraction, I strive for precision in my depiction of evolutionary and developmental biological processes. At the same time, I am interested in using biological processes as a departure point for reflecting on human experience and emotion, and it is this desire that takes me to imprecise territory where I embrace ambiguity and speculative fiction. www.annalindemann.com



CORA LYNN DEIBLER, *Rosa Bonheur, My 19th Century Gal Pal*, 2014.



ANNA LINDEMANN, *Ants Can Fix It*, animation still triptych (a scientific diagram of army ant pheromone paths morphs into written text), 2019. Courtesy of the artist.



ERIC DYER, *Williamsburg Bridge*, Animation still, 2018. A temporal portrait of the iconic East River span that collages shifting perspectives a pedestrian or cyclist experiences when traversing the elevated paths, along with repeated forms played back like strips of motion picture film and MTA trains that move like an engine's pistons.

LIST OF THE PARTICIPATING ARTISTS

Bobby Anspach
Patricia Cassady
Wendy Chadbourne
Cora Lynn Deibler
Alexis Duque
Eric Dyer
Susan Gamble & Michael Wenyon
Margot Glass
Hyemi Kim

Joyce Kozloff
Mark Lefkowitz
Ellen K. Levy
Anna Lindemann
John Megahan
Virginia Lee Montgomery
Rose Nestler
Patricia Olynyk
Aga Ousseinov

Dorie Petrotcko
Gary Raham
Carol Schwartz
Angela Su
Murray Tinkelman
Frances Topping
Anton Van Dalen
Rob Wood

ACKNOWLEDGEMENTS *Precision* involved the advice and assistance of several artists and my colleagues from Eastern. I am especially grateful to Ellen K. Levy, Patricia Olynyk, Lora Lee, Carol Schwartz, Mark McKee and Jim Wintner for their ideas and inspirations. I'd like to thank Eastern administrators President Elsa Núñez and William Salka for their generous support for this exploration of illustrative concepts.

- 1 The origin of the word "illustration" is late Middle English (in the sense 'illumination; spiritual or intellectual enlightenment')
- 2 Snow's talk, titled "The Two Cultures and the Scientific Revolution," broadly diagnosed a problem he believed challenged the future of all western democracies. <https://blogs.sciencemag.org/books/2019/04/30/the-two-cultures-and-the-scientific-revolution/>
- 3 The original 9 Evenings stand for a particular attitude towards technology – to expand its use beyond products and functionality predetermined by corporate interests. In our days of rampant government surveillance, grotesquely deceptive political propaganda and ubiquitous reliance on prepackaged devices and applications to mediate our daily experience, the legacy of E.T.A is vital. <https://www.fridmangallery.com/9-evenings-50-archive>
- 4 Orra White Hitchcock has also produced Less well known are colorful paintings on cotton—some more than twelve feet long—that were used to illustrate her husband's many college lectures on geology, botany, zoology, and anatomy. In these, communicated complex scientific principles in abstract visual terms that now appear gorgeously fresh and modern. Archival letters, manuscripts, diaries, and albums place Edward and Orra White Hitchcock in the very heart of international scientific inquiry. University of Amherst holds a comprehensive collection of Hitchcock's archives. <https://www.amherst.edu/library/archives/holdings/hitchcock>
- 5 <https://mymodernmet.com/precisionism/>

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