

STEM + ARTS = STEAM



EXHIBITING ARTISTS

KRISTIN ANDERSON
LISA CRAFTS
SCOTT FITZGERALD
MATT FRIEBURGHaus
KATHY HIGH
CARTER HODGKIN
KATHERINE JACKSON
CLAUDIA JACQUES
CHRIS JORDAN
CHRIS KACZMAREK
REBECCA KAMEN
ADRIENNE KLEIN
DEBORAH KRIKUN
MARTIN KRUCK
JOYCE YU-JEAN LEE

NORA LIGORANO + MARSHAL REESE
CHRISTOPHER MANZIONE
SHERRY MAYO
WILLIAM MEYER
MARIA MICHAILS
REBECCA MUSHTARE
PATRICIA OLYNYK
DEBRA PEARLMAN
CURT BELSHE + LISE PROWN
EVAN READ
PHILIPPE SAFIRE
JEFFREY TAYLOR
CARL VAN BRUNT
APRIL VOLLMER

CURATED BY PATRICIA MIRANDA, MIRANDA ARTS PROJECT SPACE

“ [THE STEAM EXHIBITION] IS A TESTAMENT TO HOW BOTH ART AND SCIENCE CONTRIBUTE TO A WORLD IN WHICH CREATIVITY AND INNOVATION MOVE THE PARADIGM FORWARD. ”

FROM THE CEO

Scientists and artists share a common language. It is a language of “questioning.” Both look at the world and question how things work and envision how they can work better. Questioning is how we build our understanding of the world around us and the subtleties of shades of meaning. It is how we achieve progress. It is how we measure our humanity. Most important, questioning is how we learn. Arts and sciences are both essential to our education system, not simply because they provide content, but because they require questioning. This is the process that leads to innovation, which many thoughtful leaders in our country believe is the key to America’s competitive edge in the global marketplace.

It is fitting that we call our exhibition STEAM, as steam in its purist form is a powerful force of nature. As an exhibition, STEAM highlights and celebrates the common ground shared by scientists, technologists, engineers, mathematicians and artists. It is a testament to how both art and science contribute to a world in which creativity and innovation move the paradigm forward. As an acronym, STEAM is also being used by educators to describe an educational curriculum that includes a combination of STEM subjects (science,

technology, engineering and math) and the arts. As an arts council, we work hard to keep art in classrooms throughout Westchester because we believe it is a powerful learning tool and critical to a well-rounded education.

We live in an age of innovation. Every day new technologies, new theories, new breakthroughs, new designs and new devices enter our lives promising to improve our day-to-day and bring us even more closely connected. In this exhibition, we present 31 artists, each of whom brings a unique perspective to our constantly “upgrading” world. As curator, Patricia Miranda has assembled 45 works of art by artists who question, challenge, and re-envision the world in which we live – a world that is shrinking thanks to the ingenuity of artists and scientists. Together, their work celebrates creativity and enforces the notion that the arts are an undeniable part of future innovation. We are privileged to be working with both Regeneron Pharmaceuticals and the Westchester Community College Digital Arts Center on this journey, as well as our other many sponsors: Entergy, ConEdison, Pernod Ricard, Tompkins Financial Advisors and The Liman Foundation.

Janet Langsam, CEO of ArtsWestchester





REGENERON *science to medicine®*

Each in its own way, art and science stimulate creativity and innovation—both of which are at the core of Regeneron’s approach to discovering, developing, manufacturing and commercializing new medicines for serious unmet medical needs.

At Regeneron, we say “science drives our business and passion drives our science.” We believe we have a role to play in elevating science education in our communities. We sponsor science education programs for young people in the Hudson Valley to share our passion and create opportunities to engage with science in new ways. We hope our efforts will light a spark that will lead some students to pursue careers in the STEM fields and give students who won’t become scientists or engineers the strong academic foundation in math and science that is needed in our knowledge-based global economy.

Regeneron is pleased to be the presenting sponsor of this forward-thinking STEAM exhibit. The thought-provoking works of art in this exhibit vividly illustrate that innovation is

about new ways to see and understand, and that art and science each have their place in the innovation process.

Regeneron Pharmaceuticals is a fast-growing biopharmaceutical company based in Tarrytown. Regeneron markets medicines for eye diseases, colorectal cancer, and a rare inflammatory condition and has numerous product candidates in development. A small start-up for many years, today Regeneron has over 2,300 employees. Our medicines touch patients across the United States and around the world. We strive to unleash the creativity in our employees and to make Regeneron a great place to work. We are proud that in 2012 and 2013, Regeneron was voted the best company in the global pharmaceutical industry to work for by Science Magazine.

This year marks Regeneron’s 25th year in Westchester. We are excited to support the STEAM exhibit to commemorate this milestone and to recognize the importance of innovation to our company and our communities.

George D. Yancopoulos MD., PhD.,
*President, Regeneron Laboratories & Chief
Scientific Officer, Regeneron Pharmaceuticals, Inc.*



Westchester Community College is more than just the county's largest educational institution. It is a living, breathing part of Westchester that goes beyond the influence of a typical college and affects the lives of all who enter its doors.

The Center for the Digital Arts, Peekskill extension, is celebrating 20 years of innovation and service. As part of recognizing its anniversary, the Center has amplified its mission of fostering access to arts technology education and has extended to partners throughout Westchester Community College and the county to echo STEAM. STEAM is Science, Technology, Engineering, Art, and Mathematics and advocacy for ascribing value to the arts in and across education. Advocacy for arts technology and the STEAM movement is nationwide and reflects the very purpose of opening the Center for the

Digital Arts in the downtown artist-district of the City of Peekskill in 1994.

Artists today create work that is reflective of our mashed-up, remixed, digital-visual culture. These 21st Century workers offer an opportunity for the viewer to confront our times: culturally, technologically, and spiritually. The history of arts and technology experimentation is vast and the Center for the Digital Arts is trying to honor that history and spark critical reflection about where this experiment has taken us today. The Center is committed to democratic arts education in the 21st Century and making its resources accessible to the community. In this spirit, we have partnered with ArtsWestchester which is launching an exhibition, STEAM and hosting a critical discussion forum, E.A.T. (Education, Art, Technology).

Sherry Mayo
*Director, Center for the Digital Arts,
Peekskill Extension*

“ THE WORK IN STEAM [...] REVEALS NEW WAYS TO SEE OUR WORLD, CONTEMPLATING THE GREAT POSSIBILITY OF TECHNOLOGY, WHILE WARNING OF ITS DANGERS, AND BEARING WITNESS TO ITS OVERREACH. ”



FROM THE CURATOR

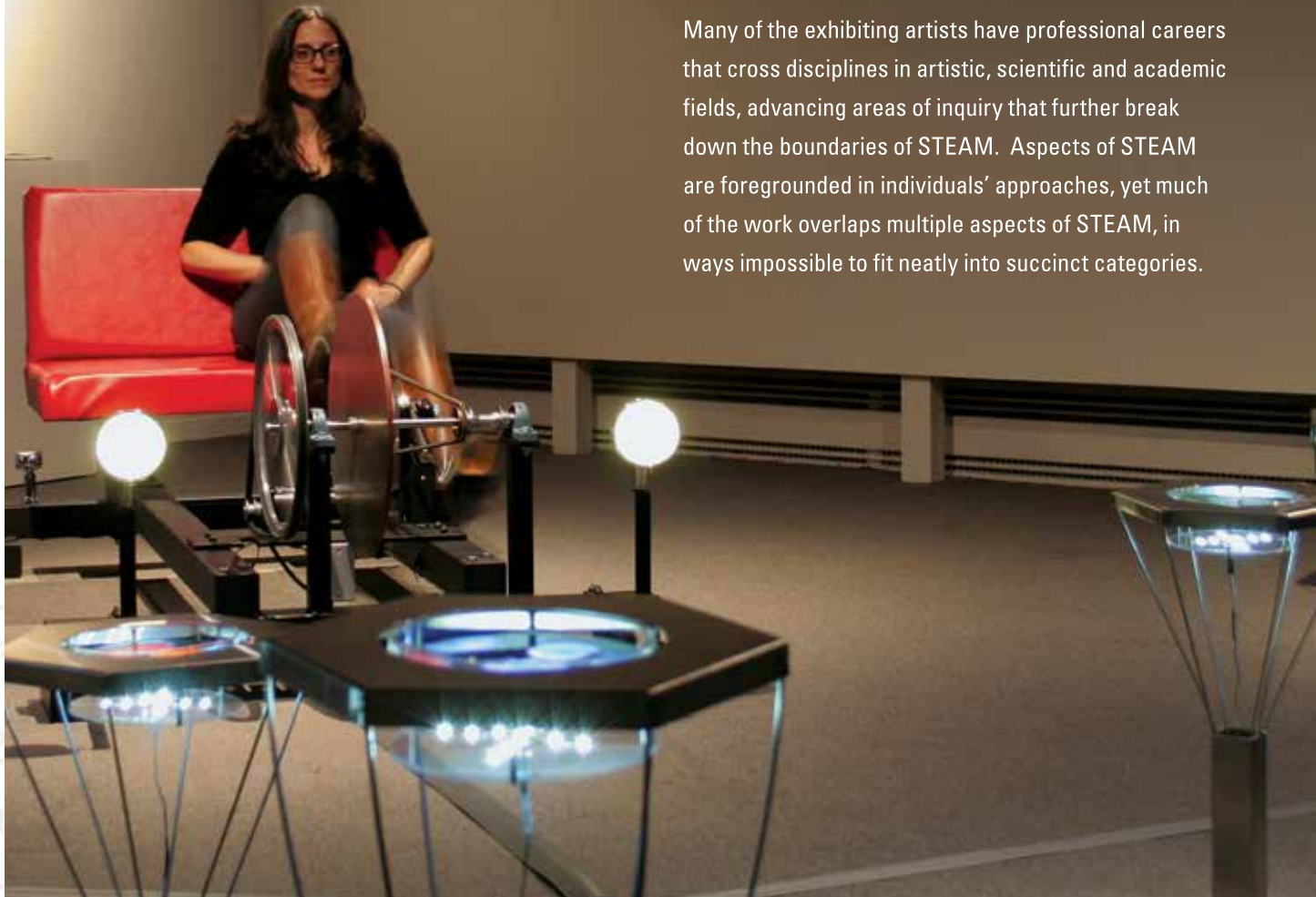
Inspired by the STEM to STEAM dialogue in education, this exhibition showcases artists using the interdisciplinary concepts of STEM to explore how science, technology and art overlap, interact, and innovate. Presenting imaginative possibilities that are poetic and pragmatic, aesthetic and forward-thinking, each artist brings a reflective and often transformational perspective to our complex world through the questioning language of art.

The educational core curriculum known as STEM- science, technology, engineering and math, is today being challenged to include the arts, to make STEAM. Art and technology have been intertwined throughout history through

the realization of idea into concrete form. Both scientists and artists imagine new possibilities in the world. Scientists develop technologies that artists quickly adapt; from hand tools to machines, Leonardo's pigments to the invention of the printing press, from the first camera to today's digital artists. Artists propose ideas that are yet to be realized, calculating probabilities, engineering solutions, freely imagining worlds yet to exist. Both scientists and artists bring impossible dreams to life. Today, artists and scientists, together and apart, are imagining, investigating, innovating, collaborating, experimenting, creating, and problem-solving, with the interdisciplinary attitude today's world demands.

THE ARTISTS

Many of the exhibiting artists have professional careers that cross disciplines in artistic, scientific and academic fields, advancing areas of inquiry that further break down the boundaries of STEAM. Aspects of STEAM are foregrounded in individuals' approaches, yet much of the work overlaps multiple aspects of STEAM, in ways impossible to fit neatly into succinct categories.



The Petri Series: Benzene by Maria Michails



Divining Nature: An Elemental Garden, Installation by Rebecca Kamen

SCIENTIFIC



Blood Wars by Kathy High

Using scientific language and materials in their work, several artists communicate complex scientific ideas in accessible, poetic and even humorous ways. Bringing biology, chemistry, and physics out of the sequestered lab, they invite us to look into how science forms our perceptions of the world.

Rebecca Kamen and **Evan Read** reinterpret knowledge garnered through life-long interests and advanced degrees in science. Inspired by the geometry and atomic number of eighty-three naturally occurring elements in the Periodic Table, **Kamen's** large sculptural installation, *Divining Nature: An Elemental Garden*, interprets patterns observed only at the atomic level. **Evan Read**, a Geneticist who works for the Metropolitan Museum of Art, translates images of the subatomic into digital abstractions.

To investigate and raise questions about the relationship of one's identity and one's biology, **Kristen Anderson** and **Kathy High** use actual human cells in their mixed media installations. In **Anderson's** *God*, she exhibits DNA for the part of the brain scientifically linked to spiritual experiences, and in *Vindication/Excuse*, genes for dyslexia, sexual orientation, anger, obesity, and alcoholism are represented in test tubes. **High's** *Blood Wars* is a playful and compelling project using actual cells that looks at the biological reaction of competing human white blood cells. **Adrienne Klein's** *Amber with Insect: Dissosteria Cardina* presents itself as a beautiful specimen of amber containing strands of organic material, referencing amber from distant geologic periods. The image is actually a true-sized, back-lit video of an insect captured with an ultra-high speed camera.



In Memory of Truth by Ligorango and Reese



A New Dialect by Curt Belshe and Lise Prown

TECHNOLOGICAL

Bleeding edge technologies are front and center in many of the artists' works. Questioning perceptions of reality in the face of new technologies, these artists ask us to reflect on our everyday interactions with the world by confusing the real and the virtual.

[Scott Fitzgerald's *Isopleth*](#) and [Chris Kaczmarek's *Stairs*](#) are interactive works that blur the lines between artist and viewer, participant and audience, inventor, producer and consumer. [Claudia Jacques' *Mixing Realities*](#) is also an interactive installation, using "cyberperception" to create awareness of physical reality through overlapping real and virtual environments. In [A New Dialect](#), [Curt Belshe](#) and [Lise Prown](#) create an interactive installation that uses the language of signage to examine expectations of signification in an urban environment. To uncover new relationships

between sight and sound, [Matt Frieburghaus](#) uses software to interpret external information and transform it into sound, video, and digital prints. The multilayered work reveals a hidden aesthetic or generates new sensory experiences.

[Christopher Manzione](#) and [Jeff Taylor](#) confuse our notions of original and copy, sculpture and digital, old and new in their 3D-printed works. The artist team [Ligorano and Reese](#) combine old and new technology in their project [In Memory of Truth](#), a film compiled from old movies and precisely projected onto a pinhead. [Carl Van Brunt](#) uses a purely digital language to create brightly colored geometric light paintings projected onto wall sculptures. [Chris Jordan's *Tower Epoch*](#) is a mixed-media projection utilizing one hour of footage from the Queens Plaza clock tower, referencing a camera obscura and confusing our sense of time and space.



Still Life with Gummi Bears by Lisa Crafts

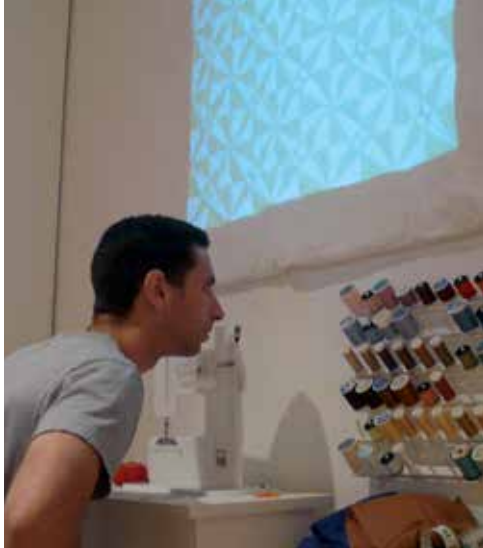
ENVIRONMENTAL

The relationship of the natural to the technological is explored in both hopeful and critical ways. Several artists consider the fate of the environment using inventive critique as technology becomes both a form of expression and a cautionary tale.

[Lisa Crafts](#) and [Martin Kruck](#) explore environmental concerns in elegiac and poetic ways. [Crafts'](#) surreal still life animations, such as *Still Life with Gummi Bears*, seduce with lush strangeness while [Kruck's](#) imaginative *Habitorium* landscapes merge natural and industrial spaces. [Debra Krikun](#) creates an immersive digital/natural environment, with organic materials and an interactive digital screen. Using engineering in interactive technology to speak to the pressing environmental issues of our day, [Maria Michails' Petri Series: Benzene](#) and [William Meyer's Portable Air Scrubber](#) are optimistic inventions that critique current models of production of energy, food and natural resources.



Habitorium Suite by Martin Kruck



Story Quilt by Rebecca Mushtare



Observatory, detail by Katherine Jackson

POETIC

In the hands of artists, technology is a poetic means to reference the human-scaled, handmade, and the physical body. Artists employ a range of contemporary tools to claim a space for the primacy of the human, and remind us of the visceral and fragile physicality of the body in an increasingly virtual world. **Joyce Yu-Jean Lee's *First Light*** explores ideas of illumination and spiritual rebirth in a life-size floor projection that challenges the figure in space, both of the depicted character and the viewer standing and watching her from above.

In her installation, **Sherry Mayo's *Safe Haven*** asks us to reflect on a surveillance and selfie society, one where we watch ourselves as we are simultaneously being watched. Images sandblasted onto glass and lit by LEDs meditate on language, and the multiple ways we read, hear, and interpret multiple communication systems in **Bridges to Somewhere** by **Katherine**

Jackson. Philippe Safire's *Endless Stories* consists of a large projection installation containing text, images or videos that allude to the act of writing by integrating Latin, Cyrillic, Chinese, Japanese, Arabic and Sanskrit characters.

Rebecca Mushtare sews sound to image in her interactive ***Story Quilt***, where your voice transforms into a digital quilt projection. **Patricia Olynyk's *The Cold Open*** re-contextualizes images from a vast inventory of medical devices collected for their unique historical value. These light box sculptures draw together both the historical and modern desire to augment, control and manipulate our corporeal selves.

Debra Pearlman's *Milk Quilt* thoughtfully addresses the mechanization of child-bearing, using images of breasts digitally printed onto silk and paper in a large installation.



Passages by Joyce Yu-Jean Lee

[April Vollmer's](#) digital and hand-printed works overlay x-ray images onto photographic depictions of her body along with a delicate abstract pattern, making note of the medical technologies present in our most intimate spaces.

The work in STEAM ranges from pure art object to interactive participatory installations of sound, art and science. These artists utilize technology in a myriad of combinations- from the formal and poetic to the explicitly scientific. All invite viewers to see themselves not only as passive customers, but as creators and innovators. They reveal new ways to see our world, contemplating the great possibility of technology, while warning of its dangers, and bearing witness to its overreach.

-Patricia Miranda, *Curator*

STEAM PROGRAMS

Education, Arts, Technology (E.A.T.) Forum

Tuesday, May 20th from 4:00 to 6:30pm, at ArtsWestchester 5th floor.

Reception to follow.

RSVP to gallery@artswestchester.org

A discussion for educators across disciplines to engage in envisioning the future. Panelists will converse about their integration of arts technology into their curricula and its impact on digitally native students.

Introduction: Sherry Mayo, M.F.A., Ed. D.C.T., *Director, Center for Digital Arts, Peekskill Extension*

Keynote Speaker: Claudia Jacques, Doctoral Candidate, Planetary Collegium, Plymouth, U.K.

Panelists: Professor Chris Kaczmarek, Fine Arts, Purchase College; Professor Deborah Krikun, Digital Arts, Westchester Community College; Dr. Richard S. Hyland, Global Business, Westchester Community College; Professor Eric Luther, New Media Journalism, Westchester Community College

Organized by Westchester Community College's Digital Art Center as part of their 20th anniversary celebration.

Workshops

Join us during the exhibition for art making and digital tool workshops on Saturdays in June and July. For a schedule of workshops and to sign up, please visit our website: www.artsw.org/steam

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ArtsWestchester

31 Mamaroneck Avenue
Downtown White Plains

Gallery Hours

Tue-Sat 12-5pm

ArtsWestchester is your complete guide to the arts. Founded in 1965, it is the largest, private, not-for-profit arts council in New York State. Its mission is to provide leadership, vision, and support, and to ensure the availability, accessibility, and diversity of the arts. ArtsWestchester provides programs and services that enrich Westchester: our grants help fund concerts, exhibitions and plays; brings artists into schools and community centers; advocates for the arts; and builds audiences through marketing initiatives. ArtsWestchester owns a nine-story neo-classical bank building at 31 Mamaroneck Avenue, as a multi-use resource for artists, cultural organizations, and the community.

ACKNOWLEDGMENTS

Janet Langsam, Chief Executive Officer

Kathleen Reckling, Gallery Director

Tom Van Buren, Folk Arts Director

Lea Banks, Gallery Coordinator

Thank you to the Arts Committee of the ArtsWestchester Board of Trustees, Gallery Interns, the ArtsWestchester Communications Department, George Mason University, Chashama and the Rockland Center for the Arts.

Presenting Sponsor

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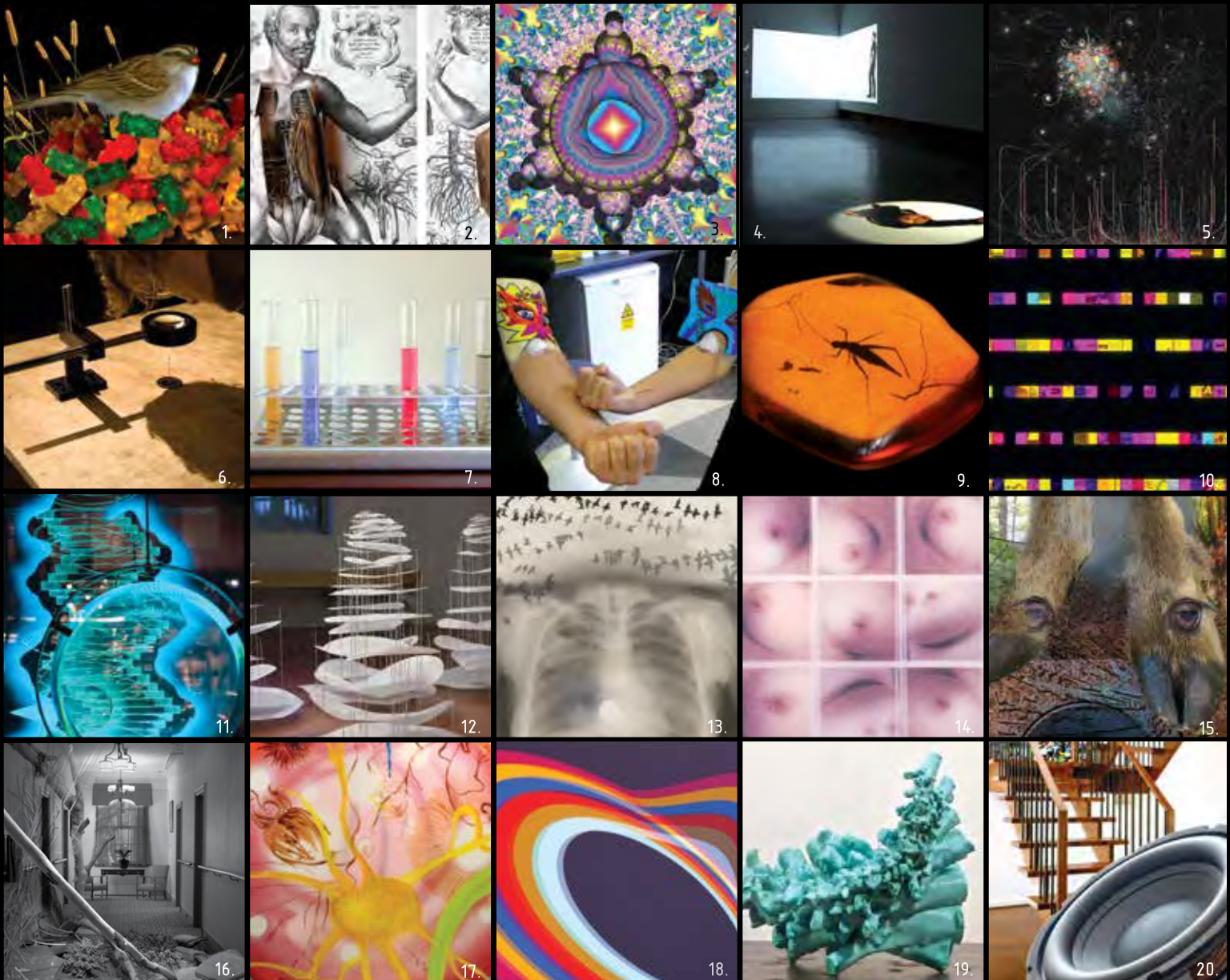
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The Liman Foundation

Details of works on back cover by:

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|----------------------|---------------------|-----------------------|--------------------------|-----------------------|
| 1. Lisa Crafts | 6. Ligorano/Reese | 11. Katherine Jackson | 16. Martin Kruck | 21. Matt Frieburghaus |
| 2. Patricia Olynyk | 7. Kristin Anderson | 12. Rebecca Kamen | 17. Sherry Mayo | 22. Rebecca Mushtare |
| 3. Carl Van Brunt | 8. Kathy High | 13. April Vollmer | 18. Evan Read | 23. Claudia Jacques |
| 4. Joyce Yu-Jean Lee | 9. Adrienne Klein | 14. Debra Pearlman | 19. Christopher Manzione | 24. Scott Fitzgerald |
| 5. Carter Hodglein | 10. Philippe Safire | 15. Deborah Krikun | 20. Chris Kaczmarek | 25. Maria Michails |



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