ONE LAB 2020
SCHOOL FOR DESIGN AND SCIENCE
ECOLOGICAL DESIGN RESEARCH + PORTFOLIO DEVELOPMENT

TERRFORM 1
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### ONE LAB 2020

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Program Overview

Terreform ONE presents ONE Lab 2020, studio-based workshops combining environmental sciences, design, and advanced fabrication techniques in our Brooklyn maker space. Design research will be focused on creating interventions to combat ecological challenges facing the planet. Students will be introduced to state-of-the-art fabrication equipment to produce mockups and explore design thinking approaches to problem-solving. A scientific background is not necessary. Portfolio development will encompass presentation information, general feedback, and the opportunity to generate new images which can be applied to graduate school applications, job placement. ONE Lab is designed for students or emerging professionals who wish to engage with the crossover of design and science.
TERREFORM ONE
We are a non-profit architecture and urban design think tank and that promotes smart design in cities. Through our comprehensive projects and outreach efforts, we aim to illuminate the environmental possibilities of cities across the globe. We operate as a unique laboratory of specialists with diverse disciplinary backgrounds that explore and advance the larger framework of socio-ecological design. The group develops innovative concepts and technologies for local sustainability in energy, transportation, infrastructure, buildings, waste treatment, food, and water. These novel research endeavors are derived from the interface of technology, design and synthetic biology.

NEW LAB
Our studio is located inside the maker-village of New Lab. New Lab is a platform for scaling frontier technologies. Launched in 2016, New Lab supports over 150 startups in 84k ft² in the Brooklyn Navy Yard. We sit at the center of innovation for entrepreneurs, corporations, cities, and investors. An array of 3D printers, CNC mills, laser cutters, textiles lab, electronics lab, and casting room allow for prototyping with a variety of materials and methods.
Project Description

ONE Lab’s study programs are intensive architecture and urban design studios focused on sustainable design and digital fabrication. The programs explore paradigm-shifting theories and technologies in an effort to find ecological solutions for the built environment not covered by existing undergraduate or graduate level institutions.

ONE Lab is a non-accredited, industry-affiliated teaching and research collective based in the Brooklyn Navy Yard. This hands-on, project-based school for ecological design lets students expand their knowledge, network with high-tech entrepreneurs and improve their portfolios through individual studio instruction, group tours of advanced manufacturing facilities, digital photography workshops, computer programming classes, office visits and design theory lectures.

ONE Lab educational programs are designed for students and young professionals who wish to engage with the crossover of design, science, and sustainability. Architects, Engineers, Planners, Sculptors, Artists, Industrial and Landscape Designers and anyone interested in furthering their knowledge are welcome to apply.

The theme for the 2020 summer workshop is to explore design strategies to counter ocean acidification. Oceans cover 71% of the Earth's surface and contain 97% of the Earth’s water. Ocean acidification derives from the entry of human-produced carbon dioxide (CO2) into the sea. When CO2 enters seawater, it increases dissolved CO2 concentrations and also combines with water to form carbonic acid (H2CO3). The acidity of the world’s oceans has increased by 30 percent and is expected to double over pre-industrial levels by the end of this century. While ocean acidification is just one dimension of the global climate emergency, its consequences are far-reaching for marine and human life.

The primary design goal for the project is to propose steps to mitigate acidification, to adapt to unavoidable change, and to build resiliency in marine ecosystems. Our design proposals will focus on the cultivation of kelp and kelp forests as a form of bio-remediation, as a source for food, and as a benign mode of intervention and possible habitation of the oceans. Kelp combats acidification by sequestering submerged carbon. It provides a rich habitat for other species, and is a potentially important source for human nutrition. We will investigate the possibilities for sustainable underwater farms for fish and algae, as well as surface or land based designs, with emphasis on materials, techniques, and social impact.
Program Components

Portfolio Review

Included with the tuition is a group portfolio review session and presentation on best practices for portfolio design. This presentation is the participant’s opportunity to learn about compiling their work in a way that clearly documents progress and growth through their studies or professional experience.

For an additional cost, we offer individual feedback sessions. Through a 1-on-1 session we will critique its strengths and weaknesses, graphic clarity, conceptual vision, and overall communication. If you do not already have a portfolio, we can help you choose projects, images, drawings, or give more general advice on how to make one. We can help you develop a unique strategy and thematic approach that speaks to your personal narrative and affinities. Please contact us at terreformone@gmail.com for more details.

Office Visits

During the two-week session in New York, there will be two architecture office visits to show how design research translates into realized built projects. Students will meet with a representative of the firm and be able to engage them in a conversation about contemporary architecture.

Guest Lectures

Talks given by world renown architects, biologists, ecologists, industrial designers and artists offering radically new responses to the real needs and aspirations of future cities. There will be weekly guest lectures accompanied by Q+A sessions to give the participants the opportunity to ask questions and engage in conversation with professionals.
Schedule

The two-week summer program in July 2020 will be set up for college to graduate students who are interested in the research topic, the graphic presentation of information, and design proposals to be included in their portfolios.

June 23-June 30 (Before Arriving to NYC):

- Participants will be given a research primer on the design themes, relevant information, and schedule.
- Students are welcome to produce initial concept drawings and sketches which can be shown to faculty during the program.
- Students are expected to read the primer and be familiar with the content.

July 6 – 17 (NYC):

- Week 01 (July 6-10)
  - Studio sessions will occur each day
  - July 6 Program Orientation
    - Introductions
    - Project site visit
  - July 7
    - Faculty presentation
    - Design Studio
  - July 8
    - Design Studio
  - July 9
    - Design Studio
    - Guest Lecture
  - July 10
    - Office or Studio Visit
- Week 02 (July 13-17)
  - Studio sessions will occur each day except the last day
  - July 13 Portfolio Lecture
    - Presentation on structuring/designing portfolio
  - July 15
    - Guest lecture
  - July 17 Final Presentation to Invited Jury
    - NYC-based architects, designers, and artists

OPTIONAL (additional fees)

- Students can elect to stay 5 days for portfolio intensives and individual feedback and photography sessions.
Faculty

Christian Hubert, Co-Director
He is an educator, architect and writer based in lower Manhattan, whose work walks the border between art and architecture in the exploration of space, light, and material. He is currently an Associate Professor at Parsons the New School of Design. He is the founder of Christian Hubert Studio, which specializes in the design of gallery spaces, artist residences, and art and culture institutions. During the early 1980’s he taught at the Institute for Architecture and Urban Studies in New York and was elected to the fellowship of the Institute in 1982. During the same period, he designed lofts for artists including David Salle and Francesco Clemente, as well as several exhibitions at the Whitney Museum. From 1986 to 1995, Mr. Hubert worked and taught in Los Angeles, where he was president of the Los Angeles Forum for Architecture and Urban Design. He has taught extensively on the East and West Coasts of the U.S., as well as in Canada, and his lower Manhattan office serves as an outpost of the PhD Architecture program at the University of Delft. Mr. Hubert received a B.A from Columbia and a M.Arch. from the Harvard Graduate School of Design.

Nicholas Gervasi, AIA, LEED AP BD+C, Co-Director
He is a licensed architect, writer, preservationist, and educator. He is a Project Architect/Head Researcher at Terreform ONE and Adjunct Assistant Professor at New York City College of Technology. In 2014, through a grant from the Columbia University Department of Ecology, Evolution and Environmental Biology, he investigated microalgae as a source for wastewater treatment and biofuel production as a Visiting Climate Researcher at the Climate Impacts Group under Dr. Cynthia Rosenzweig at the NASA Goddard Institute for Space Studies. His writings have been published in the Charrette, Clog, de-arq: Revista de Arquitectura, Int|AR, Infection, Journal des Rêves, and TRANS-Media. He earned an M.S. in Historic Preservation at the Columbia University Graduate School of Architecture, Planning & Preservation; M.Arch and B.Arch at Tulane University. He is licensed in the State of Ohio, LEED AP BD+C, and WELL AP.

Mitchell Joachim, Ph.D., Assoc. AIA
He is the Co-Founder of Terreform ONE and an Associate Professor of Practice at NYU. Formerly, he was an architect at the offices of Frank Gehry and I.M. Pei. He has been awarded a Fulbright Scholarship and fellowships with TED, Moshe Safdie, and Martin Society for Sustainability, MIT. He was chosen by Wired magazine for “The Smart List” and selected by Rolling Stone for “The 100 People Who Are Changing America”. Mitchell won many honors including; ARCHITECT R+D Award, AIA New York Urban Design Merit Award, 1st Place International Architecture Award, Victor Papanek Social Design Award, Zumtobel Group Award for Sustainability, History Channel Infiniti Award for City of the Future, and Time magazine’s Best Invention with MIT Smart Cities Car. He's featured as “The NOW 99” in Dwell magazine and “50 Under 50 Innovators of
the 21st Century" by Images Publishers. He co-authored three books, "XXL-XS: New Directions in Ecological Design," "Super Cells: Building with Biology," and "Global Design: Elsewhere Envisioned". His design work has been exhibited at MoMA and the Venice Biennale. He earned: PhD at Massachusetts Institute of Technology, MAUD Harvard University, MArch Columbia University.

**Vivian Kuan, Assoc. AIA**

She is Executive Director at Terreform ONE. As an architect with an interdisciplinary background in art, architecture, entrepreneurial marketing, and startups, she is dedicated to improving the future of our environment through impactful design and education. Vivian is currently faculty at Parsons in the Strategic Design and Management graduate program. She was a Launch Director at the incubator, idealab! and later directed the online strategy and ecommerce business units for the Estee Lauder Companies, Inc. and for The L’Oreal Group Inc. Before business school, Vivian worked as an architect and project manager in Hong Kong for Sun Hung Kai Properties, Ltd., as well as in New York City for Kohn Pedersen Fox Associates. She earned an MBA/MA at the Wharton School/Lauder program, University of Pennsylvania, and B.Arch. from Cornell University.

**Nina Edwards Anker, Assoc. AIA, Arkitekt MNAL, PhD**

Nina Edwards Anker is an architect, designer and writer whose interests revolve around sustainable design. Edwards Anker’s contemporary architecture and design works have been widely published and exhibited. Trained as an architect, her main focus lies in creating sustainable architecture for her clients. She has also designed solar lighting and furniture for exhibitions at the 3D print show and ICFF in Manhattan, Copenhagen, Cologne, Miami and Milan Furniture Fairs. The designer’s Landscape Sofa won the 2015 Good Design Award Chicago Athenuem Museum of Architecture and Design, her 3D printed Latitude Lights won the A’Design Award in 2017 and Beanie Sofa won The Architect’s Newspaper Best Product Award in 2019. Edwards Anker was awarded her doctorate in architecture in 2016 from the Oslo School of Architecture and Design. Her doctoral thesis bridges phenomenological theory and solar architecture and design. She has held teaching positions in architecture at Pratt, the Oslo School of Architecture and Design, New York University Gallatin and is currently at Sotheby's Institute. Edwards Anker is Design Director at Terreform ONE and a founding member of New Lab at the Brooklyn Navy Yard.

**Oliver Medvedik, Ph.D.**

Oliver is Director of Science at Terreform ONE and Genspace. He is also the Sandholm Visiting Professor of Biology and Bioengineering and Assistant Director of the Maurice Kanbar Center for Biomedical Engineering at The Cooper Union. In addition, Oliver is faculty at the School of Visual Arts (SVA). Oliver earned his Ph.D. from Harvard Medical School in the Biomedical and Biological Sciences program. As part of his doctoral work he has used single-celled budding yeast as a genetic system to map pathways that
underlie the processes of aging in more complex organisms, such as humans. Prior to arriving in Boston in 1999 for his doctoral studies, he has lived most of his life in New York City. Since graduating in 2006 from Harvard, he has worked as a consultant for Sirtris Pharmaceuticals, a biotechnology company specializing in the research and development of small-molecule therapeutics to treat age-onset diseases, such as diabetes. He has mentored two of Harvard's teams for the international genetically engineered machines competition (IGEM) held annually at M.I.T. Currently, he is the principal investigator at the Bioworks Institute laboratory for art and biology, and Genspace community biotechnology laboratory in Brooklyn, New York. Oliver has been awarded the TED fellowship for 2012.
Experts

We will engage a number of experts in the fields of regenerative architecture, marine biology, oceanography, urban design, synthetic biology, and more in order to frame the projects around the ecological themes for design-thinking interventions. A sample list below:

- David Benjamin, Columbia University, thelivingnewyork.com
- Carlos Barrios, PhD cabetodesigns.blogspot.com
- Anna Dyson, Yale CEA
- Decker Yeadon, deckeryeadon.com
- Dickson D. Despommier, PhD Columbia University, verticalfarm.com
- Alexander Felson, PhD environment.yale.edu
- Marc Fornes theverymany.com
- Ellen Jorgensen, PhD genspace.org
- Marni Horwitz alivestructures.com
- Natalie Jeremijenko environmentalhealthclinic.net
- Kaja Kuehl youarethecity.com
- Mary Mattingly marymattingly.com
- Walter Meyer localofficelandscape.com
- Oliver Medvedik, PhD, Cooper Union, genspace.org
- Amada Parkes, PhD bodegaalgae.com
Application

Registration for ONE LAB 2020 is on a rolling basis until capacity is reached. A 50% nonrefundable enrollment deposit of $1000 is required to secure a place in the program. The remaining 50% is due July 6, the first day of the program in New York.

All applicants must submit:

1. Name, address, email, phone number
2. Letter of intention (no longer than two paragraphs)
3. One-page CV
4. Three samples of works

The application formatted as a single digital file, in PDF format, should not exceed 3 MB. Applicants will be contacted via email upon receipt of their application.

Please email any questions and applications to terreformone@gmail.com

Tuition

The tuition of $2000 is a flat fee and includes studio space, lab fees and materials and Field Trips.

For those who are interested in individualized and more extensive Portfolio Review, beyond the lecture, please inquire for details.

Conduct and Preparation

Students or professionals enrolling in ONE Lab must have a laptop loaded with working versions of a 3D modeling (Rhino, 3Ds Max, or Maya) and post-processing (Adobe Creative Suite, V-ray, image editing softwares) programs.

After finishing the session, participants will be granted a certificate of completion and will have full ownership of the work they produce. No grades will be issued.

During the program, participants will be required to visit and document a specific site in New York City. For safety reasons this should be done in groups. On these visits, participants are asked to respect their peers and conduct themselves in a polite and professional manner. Engaging in the following activities will result in suspension from the studio without a tuition refund: smoking in the building, possession of illegal substances, the use of toxic materials in non-designated areas, horseplay in the Navy Yard, sexual harassment of colleagues, and violation of shop safety regulations. Also, participants must remove all of their belongings from the studio at the end of the program.
New Lab

The 2020 summer program will be held in New Lab, a newly renovated facility in the Brooklyn Navy Yard. The (84,000sf) space supports a vibrant community of technology start-ups from a wide-range of disciplines including, robotics, rocketry, software engineering, architecture, urban planning and biotechnology. ONE Lab’s cutting-edge design curriculum is held in a unique educational setting which includes a café, seminar rooms and an open atrium for informal gatherings. The advanced fabrication facilities, including high-resolution 3D printing and CNC machining tools, and the spirit of entrepreneurial innovation in this facility are rich in opportunities for collaboration and cross-fertilization.

Studio Access

The studio is open 24/7 and it is acceptable to leave items (laptops, cameras, books, etc) there overnight. The building is under heavy surveillance and there is an understanding amongst the member companies about respecting others’ property. Although if you leave anything of value in the studio over the weekend, we advise you to put it in a more discrete location. The overhead lights are on a timer, which is programmed to go off at 6pm. To turn the lights back on, go to the center of the room (other side of the bookshelves) and the switch is right behind the door.

Studio Cleanliness

We encourage the studio to be viewed as a workshop rather than a gallery; however, things should not pile up on the desks and be returned to their respective locations at the end of the day. Contain the mess throughout the day and dispose of any trash before you leave. All tools and materials on the shelves are available for your use unless otherwise noted. If you are unfamiliar with a tool please ask first before using it.
NYC Living

Participants will be responsible for finding and securing their own housing, whether it be renting, subletting, hotel, or staying with a relative.

Guides

Websites to Search for an Apartment
AirBnB
https://www.airbnb.com/
Street Easy
https://streeteasy.com/rentals
Naked Apartments
https://www.nakedapartments.com/
Localize
https://www.localize.city/
Zumper
https://www.zumper.com/apartments-for-rent/new-york-ny