



**ECO
LEADERS**

**APRIL 1-2, 2020
ONLINE**

2020 ECO CAREERS CONFERENCE

PREPARING FOR EMPLOYMENT IN A SUSTAINABLE WORLD

**Conference
Program**

2020

NATIONAL WILDLIFE FEDERATION 2020 EcoCAREERS CONFERENCE

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NATIONAL WILDLIFE FEDERATION 2020 EcoCAREERS CONFERENCE

Introduction

Thank you for participating in our fourth annual [National Wildlife Federation EcoCareers Conference](#).

The EcoCareers conference is a vital part of advancing the National Wildlife Federation's strategic goals of supporting and providing educational resources to help millions of young people build conservation and sustainability career and job skills into their higher education and professional lives.

The annual EcoCareers Conference helps prepare students and young professionals for wildlife and sustainability careers by providing information on green economy trends, examples of careers and career paths across varying sectors and employment types, overviews of career-enhancing experiences and credentials, and ideas for academic pathways and student-led projects on campus.

Thus, the goals of the conference are as follows:

1. Discover careers and career paths available in the clean economy, career preparation strategies, and career development opportunities across various economic sectors.
2. Enhance understanding of effective career plans including degree programs and project-based learning credentials, while becoming familiar with programming offered through the NWF EcoLeaders and EcoCareers.
3. Explore online sustainability career skill resources that can help high school and college instructors and counselors enhance academic offerings and career support for sustainability for students across all disciplines and departments.
4. Meet other students and professionals across fields interested in leading for a green economy including, students, faculty and employers to build professional networks and learn about ways to support one another.

We hope you enjoy your experience and learn a great deal on how to prepare yourself and/or your students to participate in the green workforce of the future!

The NWF Leadership, Careers, and Campuses Team,
Courtney Cochran, David Corsar, and Kristy Jones



Figure 1: Syracuse University



Figure 2: North Seattle College,
courtesy of EcoLeader Mackenzie Leach



NATIONAL WILDLIFE FEDERATION 2020 EcoCAREERS CONFERENCE

Agenda

DAY I - Wednesday April 1 - 11:00 AM EDT – 4:30 PM EDT

Time	Session Type	Session Description	Speakers
11:00 - 11:15	Presentation	Brief introduction and platform overview	David Corsar (NWF)
11:15 - 11:25	Presentation	Welcoming remarks	Mamie A. Parker (NWF Board Member)
11:25 - 12:05	Keynote	Building an Equitable Green Economy	Mustafa Santiago Ali (NWF)
12:05 - 12:15	Poll	Interactive polls	David Corsar (NWF)
12:15 - 1:00	Panel 1	FOOD JUSTICE CAREERS: Trends and opportunities for jobs and careers in building sustainable and equitable food systems	MODERATOR: Sam Lockhart (NWF) SPEAKERS: Amy Bachman (DC Central Kitchen); Lauren Zappone Maples (Partners for Education, Agriculture, and Sustainability); Ava Richardson (City of Baltimore)
1:00 - 1:20	Break		
1:20 - 1:55	Workshop	Interactive workshop on the NWF EcoLeader Project Planning Template	Courtney Cochran (NWF)
1:55 - 2:40	Panel 2	ARTS AND CREATIVE INDUSTRY CAREERS: Careers in the visual and performing arts and other creative industries	MODERATOR: John Gallagher (NWF) SPEAKERS: Linda Cheung (Before It's Too Late); Jennifer Evans (Austin Creative Reuse); Adam Roberti (Cortada Projects)
2:40 - 3:00	Break		
3:00 - 3:30	Presentation	Author Discussion: "The Great Pivot: Creating Meaningful Work to Build a Sustainable Future"	Justine Burt (Appracel)
3:30 - 4:00	Workshop	Culinary Climate Action: Seeding and Feeding the Green Economy	Arasia "Alkemia" Earth and Ietef "DJ Cavem Vita
4:00 - 4:30	Presentation	Survey, overview of what to expect on Day II	David Corsar (NWF)



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DAY II - Thursday April 2 - 11:00 AM EDT – 5:00 PM EDT

Time	Session Type	Session Description	Speakers
11:00 - 11:10	Presentation	Brief introduction and platform overview	David Corsar (NWF)
11:10 - 11:55	Keynote	Keynote address	Jennifer Allen (League of Conservation Voters)
11:55 - 12:40	Panel 3	CIRCULAR ECONOMY CAREERS: Careers that help move society toward and sustain a circular economy	MODERATOR: Barbara Bramble (NWF) SPEAKERS: Max Gruenig (Ecologic Institute); Sophie Liu (Loop); Emily Yates (City of Philadelphia)
12:40 - 1:05	Interview	Interview with a certified EcoLeader	INTERVIEWER: Courtney Cochran (NWF) INTERVIEWEE: Cody Kamrowski (NWF EcoLeader and Board Member)
1:05 - 1:20	Break		
1:20 - 2:05	Panel 4	CLIMATE CRISIS CAREERS: Preparing for a career in climate change adaptation and mitigation	MODERATOR: Shannon Heyck-Williams (NWF) SPEAKERS: Charles Glass (Maryland Department of Natural Resources); April Taylor (Chickasaw Nation, Choctaw Nation of Oklahoma); Abby Hopper (Solar Energy Industries Association)
2:05 - 2:50	Workshop	Interactive workshop for participants to get hands-on with the NWF Career Planning Tool, etc.	Beth Offenbacker (Waterford) and David Corsar (NWF)
2:50 - 3:10	Break		
3:10 - 3:55	Panel 5	GREEN FINANCE AND INVESTMENT CAREERS: Creating a career in finance, investments with a socially and environmentally responsible mission, etc.	MODERATOR: David Corsar (NWF) SPEAKERS: Alexander DeLeon (Eaton Vance); Mark Orłowski (Sustainable Endowments Institute); Jay Wilson (Government of the District of Columbia)
3:55 - 4:00	Presentation	Overview of upcoming events and opportunities to continue discussions, networking, etc.	David Corsar (NWF)
4:00 - 5:00	Networking	Break out into networking sessions	



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Special Thanks

The National Wildlife Federation, and especially the EcoLeaders team, would like to offer our sincere thanks to our EcoCareers Campus Sponsors, listed below. The support of institutions like these make the exciting and impactful work of preparing the emerging green workforce possible!

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Biographies

Day One Keynote Address

Mustafa Santiago Ali

Vice President of Environmental Justice, Climate, and Community Revitalization;
National Wildlife Federation

A renowned thought leader, international speaker, policy maker, community liaison, trainer, and facilitator, Dr. Mustafa Santiago Ali serves as the Vice President of Environmental Justice, Climate, and Community Revitalization for the National Wildlife Federation. He is also the founder of Revitalization Strategies, a business focused on moving our most vulnerable communities from “surviving to thriving.”

Before joining the National Wildlife Federation, Mustafa was the senior vice president for the Hip Hop Caucus, a national non-profit and non-partisan organization that connects the hip-hop community to the civic process to build power and create positive change. In his role, he led the strategic direction, expansion, and operation of the Hip Hop Caucus’ portfolio on climate, environmental justice, and community revitalization.

Prior to joining the Hip Hop Caucus, Mustafa worked for 24 years at the U.S. Environmental Protection Agency (EPA). He began working on social justice issues at the age of 16 and joined the EPA as a student, becoming a founding member of the EPA’s Office of Environmental Justice (OEJ). He most recently served as senior advisor for environmental justice and community revitalization and assistant associate administrator, working to elevate environmental justice issues and strengthening environmental justice policies, programs, and initiatives. Mustafa worked for EPA administrators beginning with William Riley and ending with Scott Pruitt.

Mustafa currently serves as a board member for Robert Wood Johnson Foundation, Union of Concerned Scientists, Rodenberry Foundation, TREE, and Climate Hawks Vote. He is frequently seen on television, including appearances on MSNBC, CNN, VICE, BET, Full Frontal with Samantha Bee, and Democracy NOW! Mustafa is also a regular guest on WURD radio, Roland Martin Unfiltered, The Dean Obeidallah Show, and many others, and is the former co-host of the live radio show and podcast Think 100%: The Coolest Show on Climate Change with Grammy-nominated singer and actress Antonique Smith and civil rights icon Rev Lennox Yearwood.

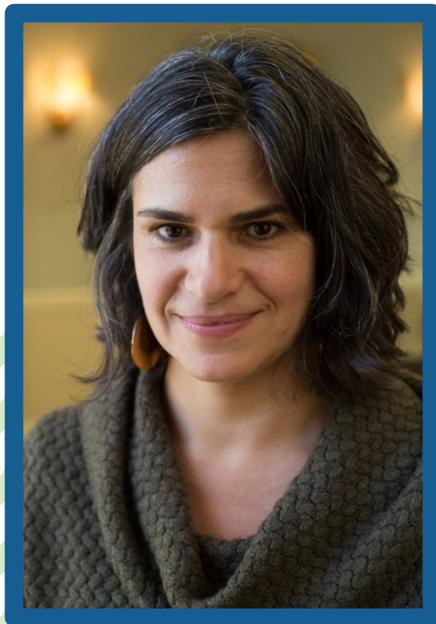


Day Two Keynote Address

Jennifer Allen

Senior Vice President for Community and Civic Engagement; League of Conservation Voters

Jennifer Allen joined the League of Conservation Voters in 2013 to develop Chispa (“spark” in Spanish), a program aimed at building the voice and power of Latino families and leaders in the fight against climate change. With grassroots community organizing programs operating in Arizona, Colorado, Connecticut, Nevada, New Mexico and Maryland, Chispa has become one of the largest efforts of a national environmental organization focused on Latino communities.



For more than a decade, prior to joining LCV, Jennifer was the founding Executive Director of the Border Action Network, then Arizona's largest immigrant and border community organization, where she developed successful state and national policy campaigns that were led by immigrant families. She serves on the board of Las Adelitas Arizona PAC and is an appointee to citizen advisory committees for the City of Tucson where she lives with her family.

Jennifer's prior experience includes economic and community development work with indigenous and rural communities throughout the southwest. She is a frequent source for national media, a guest speaker at national venues, and has published numerous reports and academic publications. She is a graduate of the University of Colorado in Boulder, CO.



Opening Remarks

Mamie A. Parker

M.A. Parker & Associates and National Wildlife Federation Board of Directors

National Wildlife Federation Board member, Dr. Mamie A. Parker is a fish and wildlife biologist, a success coach, and public speaker with clients in agencies such as the Bureau of Land Management, Fish and Wildlife Service, National Wild Turkey Association, Ducks Unlimited, the state of Virginia, Maryland, Minnesota and Pennsylvania, and the University of Vermont.

She worked for almost 30 years for the U. S. Fish and Wildlife Service and played a major role in helping protect our nation's waters from the invasive species such as the Asian Carp and Snakehead fish. For many years, Parker worked on policy development and implementation of programs such as the national fish hatcheries, national wetlands and coastal mapping, contaminants, fish passage, invasive species, marine mammals, wetland restoration and protection programs, among others. She received the Annual Ira Gabrielson Award, an award to given by FWS leaders to the most outstanding leader for her spearheading a Fish Passage program, formal mentoring programs and national outreach programs on Capitol Hill. The American Fisheries Society recently presented her the prestigious Emmaline Moore Award, named for the first female president of the world's oldest and largest fisheries organization. She led the FWS Fisheries Program joining partners in the creation of the National Fish Habitat Action Plan for which the President of the United States presented her with the Presidential Rank award, the highest award given to government employees.



The current chair of the Virginia Board of Game and Inland Fisheries, board member of Duke University BOV, the Student Conservation Association (SCA) and The Nature Conservancy – Virginia Chapter, she recently appeared on the NPR's Morning Edition and the Steve Harvey Show promoting her "Wild STEM" workshops with the FWS and Green School Alliance. She is a co-author in the American Fisheries Society's most recently released book entitled "The Future of Fisheries". The Governor of Arkansas inducted her into the Arkansas Hall of Fame for her accomplishment as the first Arkansas native to rise to the Head of Fisheries.



Panel I: Food Justice Careers

Moderator: Sam Lockhart

Eastern Regional Field Director, National Wildlife Federation

Sam serves as Eastern Regional Field Director for the National Wildlife Federation – supporting activists along the East Coast who are working in partnership with the National Wildlife Federation on federal advocacy issues and leading an Organizing Training Team to develop advocacy training content for the Federation family. Originally from New Jersey, Sam graduated from the College of William and Mary with a BA in Public Policy before receiving training as an environmental organizer through the Green Corps program. After completing the Green Corps program, Sam worked in Portland, Oregon for the Friends of the Columbia Gorge as part of the Power Past Coal coalition opposing efforts to build a series of coal export terminals throughout Oregon and Washington. Today, Sam lives in Washington, DC with her husband and her dog, Marty McFly and in her free time she enjoys musical theater and streaming television.



Amy Bachman

Director of Procurement and Sustainability; DC Central Kitchen



Amy Bachman works as the Director of Procurement and Sustainability for DC Central Kitchen, a hunger and empowerment non-profit. Amy handles all incoming product to DC Central Kitchen including managing food recovery from all sources from local farms to grocery stores and sourcing local food for DCCK's farm to school program.

Amy graduated from Wake Forest University in 2010 with a Bachelor in History and Minor in International Studies. Amy served as an AmeriCorps VISTA with the Campus Kitchens Project at Johns Hopkins University and then worked as the Volunteer and Donation Coordinator at the Franciscan Center in Baltimore before joining DC Central Kitchen in 2012. Amy is passionate about improving the food system and ensuring all people have access the healthy food. In 2015 she received a Graduate Certificate in Sustainable Food and Agriculture Systems through the Tufts Freidman School of Nutrition.



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Lauren Zappone Maples

Co-Founder and Executive Director; Partners for Education, Agriculture, and Sustainability

Lauren is a co-founder and executive director of PEAS (Partners for Education, Agriculture, and Sustainability), a nonprofit operating in Austin, TX. PEAS specialists partner with classroom teachers to lead outdoor, garden, and kitchen lessons that incite student curiosity while providing high-quality academic programs. Additionally PEAS runs and manages PEAS Community and School Farm at Cunningham Elementary. Prior to PEAS, Lauren was a classroom teacher with AISD. She had also worked as environmental educator for the City of Austin for two years and taught as an adjunct at 2 local universities.



Ava Richardson

Technical Advisor; City of Baltimore Food Matters Program



Ava Richardson is a Technical Advisor for the Food Matters Program at the City of Baltimore. Ava has worked to advance public and environmental health for the past 10 years through systems change, policies and programs as an advocate and researcher. She currently supports the city's food waste and recovery efforts – providing technical expertise on food systems and sustainability matters. Ava holds a Masters of Public Health from Morgan State University and is currently obtaining a Doctorate of Public Health with a focus in environmental health from Johns Hopkins University.



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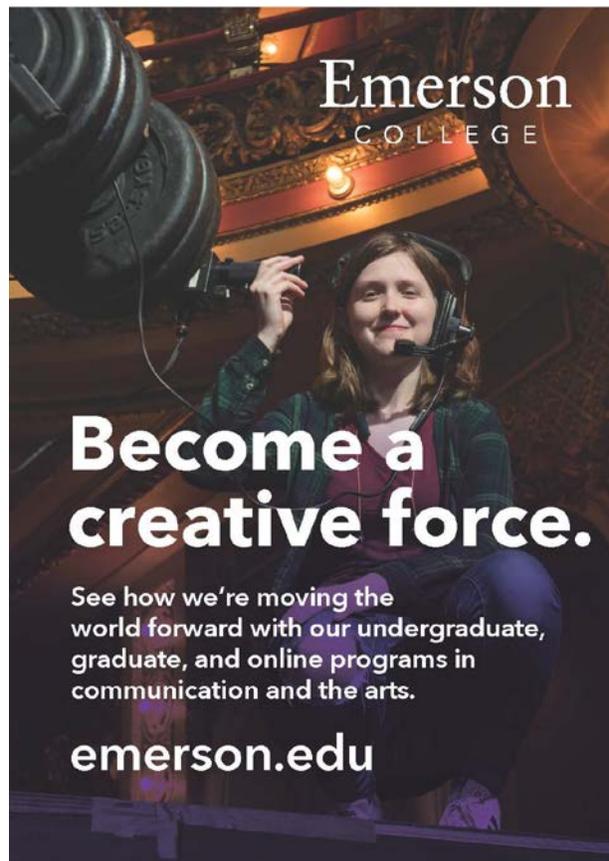
EcoLeaders Project Planning Template Workshop

Courtney Cochran

Manager, EcoLeaders; National Wildlife Federation



Courtney serves as the manager of NWF's EcoLeaders online community - an online project-based leadership and career development program with an online support community which serves emerging environmental leaders from high school through young professionals. As the manager of the NWF EcoLeaders community, Courtney works to help students and young professionals find and strengthen their leadership skills to be change-makers on their campuses and in their communities and to use the project-based leadership skills they've developed to find a fulfilling and sustainable career. Courtney earned her BA in Political Science from Warren Wilson College in Asheville North Carolina where she also worked for four years in the Environmental Leadership Center.



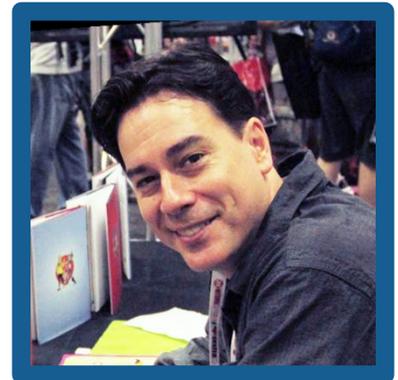
Panel II: Careers in the Arts and Creative Industries

Moderator: John Gallagher

Art Director, Ranger Rick Magazine; National Wildlife Federation

John Gallagher is the Art Director for the award-winning Ranger Rick Magazine, by National Wildlife Federation, for ages 7-12. He is the design lead for the magazine, and his responsibilities include conceptualizing with editorial staff and completing overall look and feel for the publication to engage young people in an awareness and appreciation of wildlife and nature.

John is also an independent cartoonist, self-publisher, and award-winning designer. John has written and illustrated his online and printed graphic novel series Buzzboy since 1998, and he has worked in graphic design, interactive media, and comics book creation studio since 1990. Working as an art director, artist, writer and virtually every facet of content creation, John has worked with such clients as The Philadelphia Eagles, Westfield Shopping Malls, Washington Redskins, Warner Bros., Checkers/Rally's Restaurants, NASCAR, and others. He is also a co-founder of Kids Love Comics, a non-profit organization promoting literacy and fun through comics and graphic novels.



Linda Cheung

Founder, Before It's Too Late



Linda founded Before It's Too Late (BITL) on the premise of the power of visual arts and storytelling to evoke emotion and create social change. Through BITL she is empowering students, artists, entrepreneurs and vulnerable communities to become agents of change on the climate issue. Linda has 9 years of professional experience in the marketing, finance and renewable energy industries. Linda has also worked on international social impact projects in Guatemala, Kenya and India, and she grew up helping her serial entrepreneur family launch seven restaurants and other food industry startups. She holds an MBA degree from MIT Sloan and B.S. Economics degree from Wharton.



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Jennifer Evans

Program Director; Austin Creative Reuse

Jennifer is the Sustainability Chair for the Board of Directors of Austin Creative Reuse, an Austin, Texas-based non-profit with a mission to foster conservation and reuse through creativity, education, and community building. ACR's vision is a community that consciously consumes and chooses reuse as a first choice when evaluating the need for personal or project materials. ACR's creative reuse center is a community hub where the public can donate unused art materials, purchase reuse art materials at low cost, attend workshops on art and conservation, and volunteer their time and talents. Jennifer is a graduate of Duke University's Environmental Science & Policy Program and the University of Chicago Law School. In her day job, Jennifer is the Deputy Director of the environmental education non-profit Families in Nature.



Adam Roberti

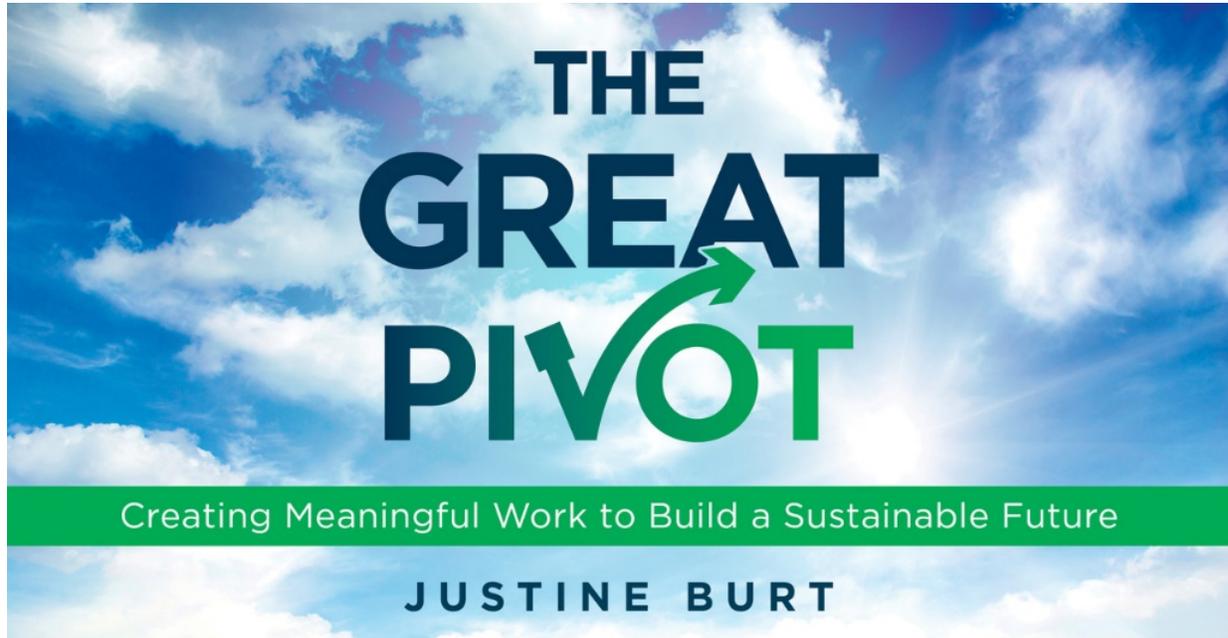
Director; Cortada Projects



As the Director of Cortada Projects, Adam Roberti uses the power of art to engage Miami in learning about and addressing important ecological concerns including climate change, sea-level rise, and biodiversity loss. By using art's elasticity to reach across disciplines, Cortada Projects aims to build community and transform citizens into stewards of the environment. In 2019, Adam oversaw the development and implementation of Xavier Cortada's "Plan(T)" project across Miami-Dade County. By partnering with local schools, every county library branch, the Frost Science Museum, and Pinecrest Gardens, residents have planted thousands of mangrove propagules to facilitate climate conversations, help sequester carbon dioxide, and grow our salt-tolerant native tree canopy. Adam holds a Bachelors of Arts in Ecosystem Science and Policy and a Masters of Environment, Culture, and Media from the University of Miami.



Author Discussion



Justine Burt

Author of “The Great Pivot: Creating Meaningful Work to Build a Sustainable Future”



Justine Burt is the Founder + CEO of Appraccel, an environmental sustainability consulting firm in the San Francisco Bay Area. She works with clients in the private, public and non-profit sector to successfully implement projects in energy efficiency, alternative transportation, and waste prevention. The Great Pivot: Creating Meaningful Work to Build a Sustainable Future, published in March 2019, is her first book. Available through Amazon, Ingram, and Smashwords; The Great Pivot describes 30 sustainability projects in five areas – advanced energy communities, low-carbon mobility, the circular economy, food waste reduction, and nature restoration – that will create millions of meaningful jobs.



Culinary Climate Action: Seeding and Feeding the Green Economy

Arasia "Alkemia" Earth and Ietef "DJ Cavem Vita

Wife-and-husband team Alkemia Earth and Ietef Vita (aka DJ Cavem) will be leading a workshop around building an environmentally conscious business from a holistic approach and using the art of eco hip-hop to build a sustainable business. Alkemia is a Certified Usui Reiki master (an ancient Japanese healing system based on chi and the "laying of the hands"), Certified Spiritual Alchemist, and Holistic Health and Wellness Coach. She is also a yogi, organic gardener, and raw vegan chef. She was private chef and energy practitioner for NBA all-star Wilson Chandler for a season, and was invited to present at the White House during the Obama administration along with celebrity chefs Gail Simmons, Sunny Anderson, Michael Simon, and Bobby Flay.



When DJ Cavem coined the term eco-hip hop in 2007, he didn't know it would sprout into a global movement. His mission to rap about climate change, food justice and plant-based foods spread far beyond his Denver hometown. Having performed at the Obama White House and been featured in Oprah Magazine and on the Rachael Ray Show, Dr. Ietef "DJ Cavem" Vita became known as more than just a rapper -- but an activist, educator and vegan chef. Now, several years after the release of *The Produce Section*, his award-winning album that fused hip hop with lessons on eco-friendliness, Cavem has shifted his focus to new material. His latest project *BIOMIMICZ* is being released as an album/seed pack to get people involved and spur listeners into action.



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Panel III: Careers in the Circular Economy

Moderator: Barbara Bramble

Vice President, International Conservation and Corporate Strategies, National Wildlife Federation

Barbara and her team work with the private sector to sever the link between deforestation and agricultural production; she helps global brands and retailers to avoid purchasing agricultural and forest commodities that originate from recently cleared tropical forests and other carbon rich lands. She is the Chair of the International Board of the Forest Stewardship Council. Ms. Bramble was a key organizer of the International NGO Forum at the 1992 Earth Summit in Rio de Janeiro and she worked closely with Mexican NGOs for several years, to enhance their advocacy and environmental education skills.



Before joining NWF, she served as legal advisor to the White House Council on Environmental Quality, and as an environmental lawyer in private practice. Ms. Bramble earned a J.D. from George Washington University, and a B.A. from George Mason University. Ms. Bramble has lived in Latin America for almost 5 years and speaks both Spanish and Portuguese.

Max Gruenig

President; Ecologic Institute



Max Gruenig is President of Ecologic Institute US and has been with Ecologic Institute since 2007. His work focuses on sustainable development in the energy and transport sector, as well as urban sustainability. In particular, he is leading the efforts by Ecologic Institute in the Energy Future Exchange (EFEX) and coordinating the Post-Carbon Cities of Tomorrow program (POCACITO). Research on climate change impacts on security included a study on Climate Change and Public Finances (2009), a study on the Economic Impacts of Climate Change and Costs of

Adaptation for the City of Hamburg (2012), an article on The Future of Power in a Post-carbon Society (2015) and books on Low-carbon Energy Security from a European Perspective (2016) and on Arctic Sustainable Development (2018). In 2004, Max Gruenig received his degree in economics from Humboldt-University Berlin. He frequently lectures and facilitates stakeholder workshops on issues of sustainability and climate change in cities around the world, most recently in Tampico, Mexico.



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Sophie Liu

Business Development; Loop

Sophie Liu is on the Business Development team at Loop, an innovative e-commerce platform offering products in reusable durable packaging rather than single-use. Developed by TerraCycle, an international recycling leader in hard-to-recycle waste streams like cigarettes, pouches and more, Loop aims to change the future of consumption by redefining how consumers and brands treat packaging.

Before Loop, Sophie worked in non-profit development and event planning after studying ecology and evolutionary biology at Cornell University. She's an advocate of zero waste living and a recycling enthusiast.



Emily Yates

Smart City Director; City of Philadelphia



As Smart City Director for the City of Philadelphia, Emily is responsible for managing and leading the implementation of the SmartCityPHL Roadmap that provides guidance on how smart and emerging technology solutions can improve the quality of life for residents, businesses and visitors while improving the delivery of City services.

Most recently, Emily was Deputy Director with Envision Charlotte where she was responsible for leading the development of the Circular Charlotte strategy, which made Charlotte the first city in the US to have a citywide circular economy strategy, in addition to other local programming that created a smarter, more sustainable Charlotte.

She has held a variety of positions in Europe and North America, including urban planning positions with both the District of Columbia and the city of Cleveland planning offices. Emily was a recipient of the prestigious Alexander von Humboldt German Chancellor/ Bundeskanzler Fellowship, which funded a year of research focused on German approaches to the implementation of sustainability policy and climate change adaptation in brownfield development. Emily holds a Bachelors of Science in Landscape Architecture from Arizona State University. She is a member of the Emerging Leaders in Energy and Environmental Policy (ELEEP) Network.



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Interview with an NWF EcoLeader

Cody Kamrowski

NWF EcoLeader and Board Member



Cody Kamrowski is a lifelong resident of Wisconsin, and his first relationship to the National Wildlife Federation was through its State Affiliate, the Wisconsin Wildlife Federation. Cody's involvement led to his nomination to the NWF board of directors in 2017 as one of the youngest serving board members in the organization's history. As a current board member, Cody engages with NWF's board members, affiliates, supporters, donors, as well as the general public on a plethora of topics and issues. Cody explained that, "being part of the National Wildlife Federation has been the ultimate learning experience, and I'm thankful to be part of the most dedicated and driven conservation organization in the United States."



Panel IV: Climate Crisis Careers

Moderator: Shannon Heyck-Williams

Director, Climate and Energy Policy; National Wildlife Federation

Shannon Heyck-Williams leads the National Wildlife Federation's climate and energy policy program, directing and representing strategic priorities at the federal level as they relate to reducing greenhouse gas emissions, advancing wildlife-responsible renewable energy, and boosting carbon removal strategies.

She joined the National Wildlife Federation in 2015, having worked for nearly eight years performing government relations for The Pew Charitable Trusts on projects pertaining to clean energy, agricultural use of antibiotics, and other environmental and public health issues.

Heyck-Williams received a Master of Environmental Management degree in 2000 from the Yale School of Forestry and Environmental Studies, and a B.A. in international studies in 1995 from Trinity University in San Antonio, Texas.



Charles Glass

Deputy Secretary; Maryland Department of Natural Resources



Charles C. Glass, Ph.D., P.E. was appointed Deputy Secretary at the Maryland Department of Natural Resources in December, 2019 after serving as Assistant Secretary for Transportation Policy Analysis and Planning and Director of Bicycle and Pedestrian Access at the Maryland Department of Transportation.

Dr. Glass' credentials include serving as a research and engineering professional for more than 20 years in academia and the consulting engineering industries. He sustained two successful long-term funding relationships involving the District Department of Transportation in Washington D.C. and the National Science Foundation. Dr. Glass came to the Maryland Department of Transportation (MDOT) from Howard University, where he served on the faculty for seventeen years. For eight months in 2010, he spent time as an Environmental Engineer at the United States Environmental Protection Agency as the lead on a potential new regulation for the mitigation of sanitary sewer overflows.

He completed his undergraduate degree requirements in Civil Engineering in 1992 at The Johns Hopkins University. He completed his Master of Science and Ph.D. degrees at the University of Colorado at Boulder in 1994 and 1997, respectively.



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April Taylor

Sustainability Scientist; South Central Climate Adaptation Science Center

April Taylor is a Sustainability Scientist with the Chickasaw Nation officed at the South Central Climate Adaptation Science Center (SC-CASC) in Norman, OK. Her position includes 1) building tribal professional capacity in climate change science and approaches to planning and 2) providing technical assistance for tribal climate adaptation planning and 3) Mentoring native early career professionals. Speaking engagements have included the Oklahoma Tribal Conservation Advisory Council (OTCAC), Tribal Environmental Coalition of Oklahoma (TECO), Inter-Tribal Environmental Council (ITEC), American Indian Alaskan Native Climate Change Working Group (AIANCCWG), and Five Civilized Tribes-Inter Tribal Council-Environmental Protection Committee. April holds a BS in Marine Science from Texas A&M University and a Masters in Earth and Environmental Resource Management from the University of South Carolina. As a Chickasaw citizen with a family tradition of Native American grafted pecan trees, she is inspired by helping the tribes manage and plan for the many environmental impacts of climate variability and change.



Abby Hopper

President and CEO; Solar Energy Industries Association



Abigail Ross Hopper is the President and CEO of the Solar Energy Industries Association, the national trade organization for America's solar energy industries. She oversees all of SEIA's activities, including government affairs, research, communications, and industry leadership, and is focused on creating a marketplace where solar will constitute a significant percentage of America's energy generation.

Before joining SEIA, Abby served as Director of the Department of Interior's Bureau of Ocean Energy Management, the Director of the Maryland Energy Administration (MEA), Energy Advisor

to Maryland Gov. Martin O'Malley, and Deputy General Counsel with the Maryland Public Service Commission. Before embarking on a career in public service, Abby spent nine years in private practice.

Abby graduated Cum Laude from the University of Maryland School of Law and earned a Bachelor of Arts Degree from Dartmouth College. She is the very proud mom of three children and loves to read and run.



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Career Visioning and Planning Workshop

David Corsar

Manager, Career Development Programs; National Wildlife Federation

David Corsar is the Manager for Career Development programming at the National Wildlife Federation. He is responsible for developing the online career center portion of the EcoLeaders community and managing the annual EcoCareers Conference.

Before joining NWF, David completed a full 2-year Peace Corps service in the Republic of Armenia where he focused on professional and organizational development for local community-based NGOs. Prior to his Peace Corps service, David worked as an environmental engineer and project manager at a global engineering consulting firm, CDM Smith. David received Bachelor of Science and Master of Engineering in Environmental Engineering from Old Dominion University in Norfolk, VA and a Master of Public Administration from George Mason University in Fairfax, VA.



Beth Offenbacher

Consultant; Waterford, Inc.



Dr. Beth Offenbacher is an executive, executive coach, and consultant who specializes in elevating results and impact for individual talent and organizations in the Green Industry. As the recipient of more than 30 awards, honors, and fellowships throughout her esteemed career, she is highly regarded as the “go to” authority and an extraordinary influencer in her field.

During her tenure at Waterford, Dr. Offenbacher has been recognized for her strategic and creative vision in guiding the firm’s work with its diverse range of clients. She has corporate, nonprofit, and public agency experience, and her portfolio includes local, state, regional, national, and international projects. Dr. Offenbacher co-designed and leads the Green Career Workshops for the global nonprofit Leaders in Energy, a 4,500+ member organization of clean energy and sustainability professionals in the U.S. and more than 100 countries. She also serves as Director of Training & Development for Leaders in Energy.

Her background includes staff positions with professional trade associations, an investor-owned utility company, the headquarters of a federal agency, a top-ranked research university, and a small marketing firm. Dr. Offenbacher also is a former university faculty member with over 10 years of teaching experience and more than 7 years of experience in higher education leadership and administration. She is an active Tree Steward with Tree Stewards of Arlington and Alexandria and resides in Arlington, Virginia.



Panel V: Green Finance and Investment Careers

Moderator: David Corsar

Manager, Career Development Programs; National Wildlife Federation

Alexander DeLeon

Assistant Vice President and ESG Quantitative Research Analyst;
Calvert/Eaton Vance

Alexander DeLeon is an assistant vice president and ESG quantitative research analyst for Calvert Research and Management, a wholly owned subsidiary of Eaton Vance Management specializing in responsible and sustainable investing across global capital markets. He is responsible for quantitative analysis of the Calvert Research System, analysis of vendor data sources, testing performance of KPIs and supporting development of new ESG performance indicators. He joined Calvert Research and Management in 2016. Alexander began his career in the investment management industry in 2013. Before joining Calvert Research and Management, he was an investment analyst with Calvert Investments. Alexander earned a B.A. with honors from Morehouse College.



Mark Orlowski

Executive Director and Founder; Sustainable Endowments Institute



Mark Orlowski is the Executive Director and Founder of the Sustainable Endowments Institute. Mark has led the Institute's research efforts on college sustainability initiatives including the creation of the College Sustainability Report Card leading the development and coordination of the Billion Dollar Green Challenge, an initiative that is encouraging colleges and other nonprofit institutions to invest a combined total of \$1 billion into energy efficiency upgrades. A graduate of Williams College, Mr. Orlowski served on the college's Advisory Committee on Shareholder Responsibility and chaired its Campus Environmental Advisory Committee. He also received an associate's degree from Berkshire Community College and earned a master's degree at Harvard University, where he studied nonprofit management.



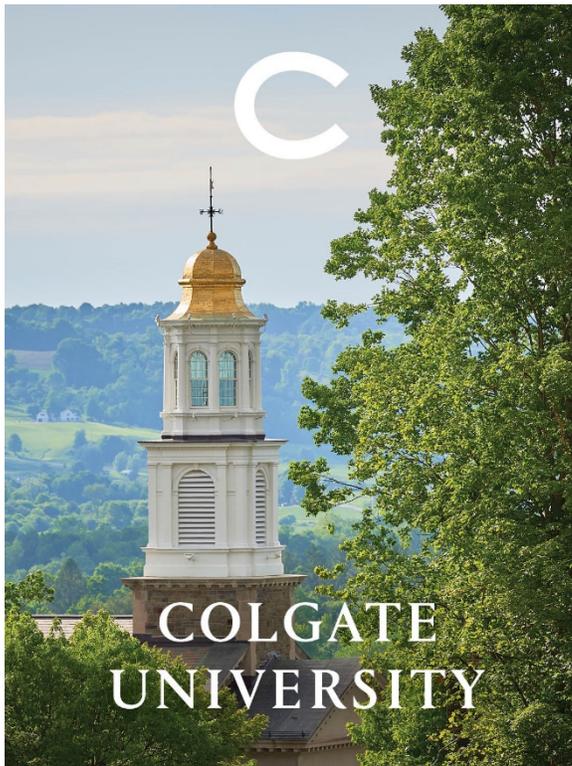
NATIONAL WILDLIFE FEDERATION 2020 EcoCAREERS CONFERENCE

Jay Wilson

DC Green Bank Program Manager; Government of the District of Columbia



Jay Wilson is the Program Manager for the development and launch of the DC Green Bank, a quasi-public financial institution whose mission is to attract private investment and enable access to financing for energy efficiency and clean energy projects. Jay is also a registered architect and green building expert at the District's Department of Energy and Environment, where he is responsible for advancing sustainable development and green building policy and planning. Jay served on the city's Construction Code Coordinating Board and on the Board of Directors of the USGBC National Capital Region Chapter from 2011 through 2015. Jay was recognized with a 2019 USGBC-NCR Individual Leadership Award for Excellence in Government, Advocacy or Policy.



NATIONAL WILDLIFE FEDERATION 2020 EcoCAREERS CONFERENCE

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Appendices





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WHAT IS PEAS?

Partners for Education Agriculture and Sustainability (PEAS) is a 501c3 that inspires environmental stewardship, promotes sustainability, and cultivates community connections that prioritize our planet.

For schools:

Outdoor and Edible Education provide an authentic workspace for applied learning while engaging kids in hands-on self-directed opportunities to cultivate and refine skills in science, math, social studies, language arts, health, PE, and fine arts. Our programs promote well being and healthy living through being active outside and learning about growing and eating healthy food. We teach respect for the natural world around us and complement social emotional learning by improving self-esteem, student engagement with the school community, and a sense of empowerment, as well as fostering creative learning opportunities and utilizing creative spaces for learning. We partner and collaborate with teachers, school staff, parents, and community partners to help build support networks for the activation of outdoor and kitchen classroom spaces.

Join the 19 Austin area schools already working with PEAS to provide outdoor education and garden-based learning opportunities while supporting social emotional learning and whole child education. Get on PEAS' 2020-21 schedule starting December 2019 by filling out [the registration form](#) found on our website and paying the deposit (\$500 or \$250 for economically disadvantaged schools) to secure your school's spot. Joining our list early increases the chance that we can help a school seek supplemental funding if it is needed.



OTHER SERVICES:

- **Consulting services** - Whether you are looking to start a community farm, connect with other community outdoor and agricultural partners, or build out programming of your own, we have experienced staff who can help.
- **Presentations - Topics related to small scale farming and/or connecting communities with nature**
- **Professional development** - Outdoor learning and edible education
- **Teacher mentoring in outdoor education**
- **Camps** - Check out our website in spring of 2020

KEEP UP WITH US ON SOCIAL MEDIA:

Facebook - facebook.com/peascommunity

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PARTNERS FOR EDUCATION,
AGRICULTURE & SUSTAINABILITY

2019-2020 IMPACT

"PEAS PROVIDES AWESOME HANDS-ON OPPORTUNITIES FOR OUR STUDENTS TO GO AND LEARN IN THE DIRT. THE KIDS ARE ENGAGED AND THEY LEARN A LOT OF NEW VOCABULARY AND CONCEPTS EVERY WEEK."

19 SCHOOLS



There is a growing demand for PEAS' innovative outdoor and edible education programming. AISD and PfISD schools which receive programming are distributed throughout the City. While most schools receive the basic model where one to two grade levels receive year-round programming, three schools have moved to ensuring that their *entire* student body receives year-round outdoor education.

PEAS is committed to ensuring equitable access to edible and outdoor education for every student, regardless of financial circumstances. 15 partner schools have at least 60% of students qualify for free/reduced lunch. 90% of students qualify for free/reduced lunch in eight of those schools.

31,000+ STUDENT INTERACTIONS



Research shows that repeated exposure to nature and green spaces is more influential than one-time experiences in building appreciation and stewardship habits. A lack of repeat exposure is associated with the development of fear, discomfort, and dislike of the environment. PEAS is the only organization in Central Texas that provides year-round, facilitated outdoor education and support for public schools.

1,400+ LESSONS



PEAS is committed to working in partnership with over 140 teachers to provide lessons which make subjects come alive and provide hands-on experiences for students to engage with content. PEAS' outdoor and edible education specialists design and deliver cross-curricular lessons with a primary focus on science and math, with a secondary focus on , language arts, social studies, and health.



PARTNERS FOR EDUCATION,
AGRICULTURE & SUSTAINABILITY

NEW PROGRAMS

"I WISH THAT WAS WHAT LEARNING LOOKED LIKE EVERY DAY. SO RICH AND SO GOOD!"



EMERIL LAGASSE TEACHING KITCHEN

The Emeril Lagasse Foundation awarded AISD and PEAS \$500,000 for the construction of a teaching kitchen and on-going outdoor and edible education programming at Cunningham Elementary. The grant was the result of the success of the PEAS Community Farm and Urban Orchard which was started as a community initiative at Cunningham in 2011 and has grown to PEAS' multi-district programming. The new kitchen space will open for the 2020-2021 school year.

EDIBLE EDUCATION EXPANSION

Edible education is a perfect complement to PEAS' hands-on, outdoor education programming. Students learn the full soil to table cycle and understand how our bodies are connected to the planet through the food we eat and how we care for the Earth.



PEAS piloted programming in 2018-2019 with one grade level at Cunningham Elementary and Brooke Elementary reaching 190 students. We expanded culinary lessons to every child – PreK through 5th grade– at Cunningham Elementary and multiple grade levels at Brooke Elementary in 2019-2020 and are reaching over 500 students.



SUMMER CAMP

In 2020, PEAS will offer summer day-camps where campers will harvest produce planted in the Spring and incorporate those ingredients into meals and snacks. This camp will result in an extended growing season, meaningful summer experiences for elementary school students, and job-training opportunities for young adults.



Xavier Cortada uses art's elasticity to reach across disciplines to develop new ways of thinking and building stronger communities through his social practice.

His participatory eco-art projects engage residents to protect our ecosystems as they work together and learn together to problem-solve.

Cortada Projects participants work to reforest mangroves, native trees, and wildflowers, protect our planet's biodiversity, teach our community to better reduce, reuse, and recycle, and help prepare for a future impacted by global climate change and sea-level rise.

Cortada Projects

Cortada Projects

Pinecrest Gardens

11000 Red Road
Pinecrest, Florida

Cortada Projects uses the power of art to engage our community in learning about and addressing important ecological concerns, including global climate change, sea-level rise, and biodiversity loss.

Through exhibitions at Pinecrest Gardens Hibiscus Gallery, interactive installations along its Colonnade, and programming at the weekly onsite Farmer's Market, Cortada Projects establishes a platform for community conversation and environmental action.

Get involved!



@cortadaprojects

www.cortadaprojects.org

Plan



EcoArt by Xavier Cortada

Plan(T) is a participatory eco-art project aimed at helping our local community learn about and plan for a future impacted by global climate change.

Rising seas and saltwater intrusion into our freshwater aquifers are threatening to permanently alter our way of life in South Florida.

Our “mangrove in every yard” reforestation effort focuses on raising awareness and building community. Residents are encouraged to plant a mangrove seedling in their yards to facilitate climate conversations, help sequester carbon dioxide, and grow our salt-tolerant native tree canopy.





Plan*i*

Building upon the overwhelming response to Xavier Cortada's previous eco-art projects, Plan(T) engages concerned citizens and transforms them into local problem-solvers.

By planting for a future with saltwater-intrusion, local residents can begin planning for the effects that climate change will bring to Miami.

Based at Pinecrest Gardens, Cortada Projects uses the power of art to engage the community in learning about and addressing important ecological concerns. Our exhibitions and programming serve as a platform for community conversation and environmental action.



Xavier Cortada, "Underwater HOA: Underwater Marker 8," 2018. (Photo: Guido H. Inguanzo, Jr.)

Underwater HOA
Xavier Cortada

The New York Times

The New York Times Style Magazine

12 Artists On: Climate Change

A dozen artistic responses to one of the greatest threats of our time.



Miami Artist Repurposes Campaign Signs To Spark Conversation About Sea Level Rise



Pinecrest Is Getting An "Underwater Homeowners Association" To Help Respond To Sea-Level Rise



Miami artist Xavier Cortada continues his crusade against sea-level rise with a public project



Rising sea levels take to the streets of Pinecrest in new art display

MIAMI'S COMMUNITY NEWSPAPERS

Pinecrest Environmental Artist Xavier Cortada calls for action on rising sea levels

Killian Drive will become 'Elevation Drive' for a week



The Cultural Frontline

Art Against Climate Change



With Underwater HOA, A Florida Village Faces Its Sinking Future



Environmental artists show where sea level rise meets the road

Underwater HOA project part of this year's Art Basel



ARTIST XAVIER CORTADA'S NEWEST WORK IS A STATEMENT ON SEA LEVEL RISE



As Miami Battles Sea-Level Rise, This Artist Makes Waves with His "Underwater Homeowners Association"

Xavier Cortada's elevation markers are a colorful yet painful reminder of what Floridians stand to lose from climate change.



ARTBASEL

Climate change is a hot topic at Art Basel, but this year locals are stealing the show

EDUCATION

Artist Xavier Cortada, students raise awareness of sea level rise



Xavier Cortada's re-purposed campaign sign "Underwater HOA, Marker 6," 2018. (Photo by Xavier Cortada)



Re-purpose your campaign signs to make a political statement about sea level rise

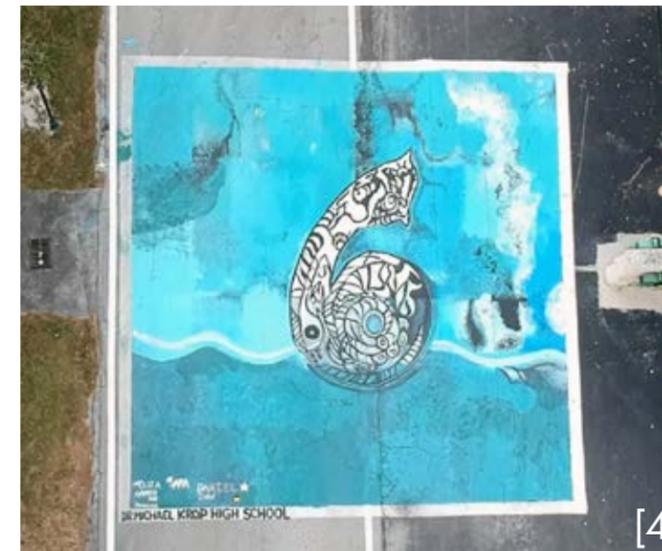
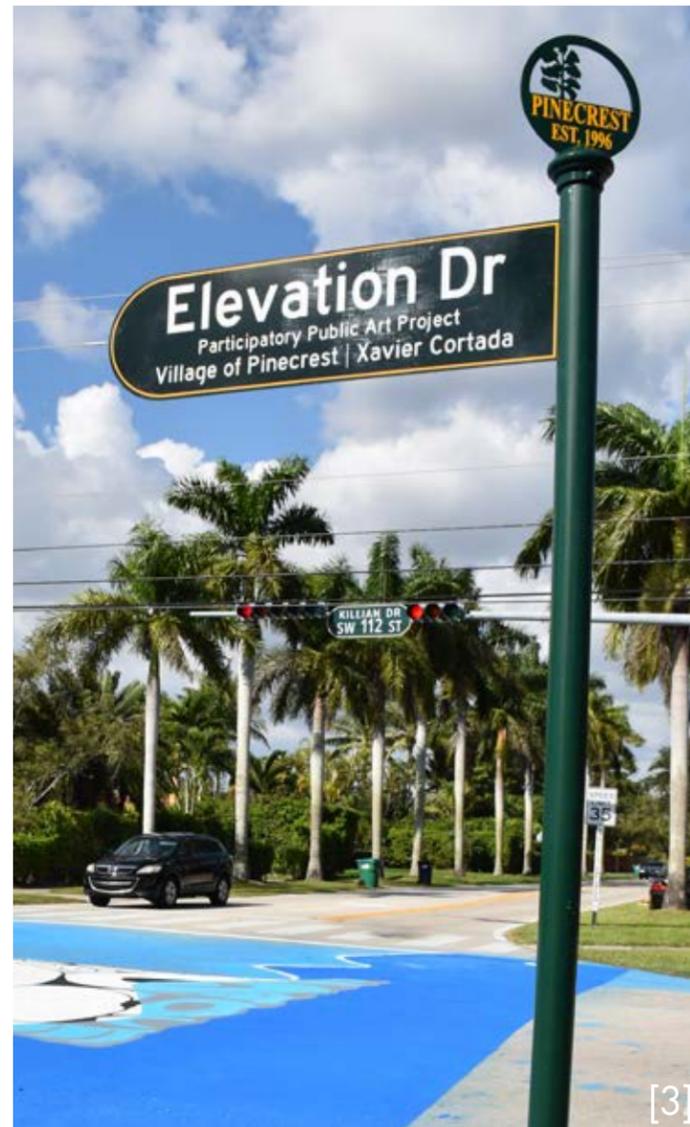
By Xavier Cortada
November 06, 2018

Tuesday, we voted in record numbers, exercising the right every veteran and civil rights leader fought so hard for us to keep. We cast our ballots. But our job is far from done.

Our nation is fractured, polarized. Governance is broken. Partisanship and divisiveness ruled the midterms. We need to come together to build a more perfect union. We need to animate democracy.

With the election behind us, let's leave the rhetoric and fear-mongering behind, too, and talk openly and honestly with each other about a threat we all face in a state surrounded by water: sea level rise.

Virtually all scientists tell us pollution traps heat in the atmosphere, warms the planet and melts polar glaciers, causing the oceans to rise. The science is indisputable. So is this: Antarctica is coming to town, and it doesn't care if you are a Republican or a Democrat. Protecting the environment can never be a partisan issue. We need to find a way to come together to solve the problem so the environment always wins.



[1] Gulliver High School students painting intersection marker. [2] Xavier Cortada lecture at Dr. Micheal Krop High School. [3] "Elevation Drive" Street sign on 72 ave. [4] 6' marker painting by Dr. Michael KROP High School. [5] 7' marker painting on 72 Ave by Gulliver High School. [6] 9' marker painting at 67 ave by Westminster High School [7] 11' intersection painting at 62 ave by South Dade High School. Photos by Adam Pascale.

[1] Gulliver High School students painting intersection marker. [2] Xavier Cortada lecture at Dr. Micheal Krop High School. [3] "Elevation Drive" Street sign on 72 ave. [4] 6' marker painting by Dr. Michael KROP High School. [5] 7' marker painting on 72 Ave by Gulliver High School. [6] 9' marker painting at 67 ave by Westminster High School [7] 11' intersection painting at 62 ave by South Dade High School. Photos by Adam Pascale.

According to the National Oceanic and Atmospheric Administration, South Florida's sea level could be 3 feet higher by 2060 and as much as 8 feet by 2100. In the past century, the sea has risen 9 inches in Key West. So the trend is clear.

My house stands at 6.13 feet above sea level. Scientists say that by the time I pay off my 30-year mortgage seas may rise by another 2.5 to 3 feet. Feedback loops in the melting Arctic and our insatiable addiction to fossil fuels make that timeline woefully unpredictable. But there are other things homeowners need to worry about even before the water begins to lap at our doorsteps: Exorbitant flood insurance costs, property devaluation, contamination of clean drinking water with salt water intrusion. A rising water table will make our septic tanks inoperable. A warmer climate will affect agricultural productivity and usher in tropical diseases. Warmer waters will adversely affect marine ecosystems, making us more vulnerable to algal blooms. Rising seas will make our flood-insurance costs skyrocket, tax base vulnerable and property values unpredictable.

Let's take a stand today to protect our home. Take that campaign yard sign on your front lawn, paint it in white (the color of the Antarctic) glaciers and make a new kind of political statement.

Step 1: Visit Eyes on the Rise toolbox (www.eyesontherise.org/app). Using the toolbox, insert your home address to find your property elevation (mine is 6.13 feet) .

Step 2: Draw the number of your property's elevation on the right side of the sign. Paint a squiggly line across the bottom of the sign in blue to represent the rising seas. (You can make this drawing on paper and tape it to your yard sign.)

Step 3: Take a photo of the sign in your front yard (showing your home in the background).



Xavier Cortada "Underwater HOA: Underwater Markers 0 through 17," 2018.

Step 4: Visit the @UnderwaterHOA page on Facebook and "Like" the page. Post your photo, and a comment if desired, using the hashtag #UnderwaterHOA.

Step 5: Use the transformed political sign as a catalyst for a new kind of political conversation with your neighbors: Work together and learn to advocate for your neighborhood as we tackle the invading seas, and perhaps even organize yourselves as own the Underwater Homeowners Association. Visit www.underwaterHOA.com to learn more about this effort and our science partners at Florida International University and the University of Miami.

If a hurricane was heading our way, we would all prepare for it. Sea level rise is giving us a wider time horizon before it hits us. That's good. Given the unpredictability and the scale of the impact, we can use all the help we can to organize ourselves as neighbors and citizens. But first, we can't continue to deny the problems. Let's name it. Let's write it down, put it out there on our front lawns. Let's talk about it and problem-solve.

Unlike other global coastlines, South Florida's shoreline is particularly vulnerable. Neither a levee nor an embankment will not be able to hold back the rising seas. Porous limestone beneath the ground will allow the water to rise from beneath.

By mapping the impending crisis, I want us to make the invisible visible. Block by block, house by house, neighbor by neighbor, I want to make the future impact of sea level rise something impossible to ignore.

Let's rebuild our faith in one another. Let's come together and build a more resilient community. Let's care for one another and those not yet born. Let's create stronger democracy for those who follow.

Xavier Cortada is an artist and collaborator with the McMurdo Dry Valleys Long Term Ecological Research project in Antarctica. He was recently elected chairman of the Miami-Dade County Cultural Affairs Council, a 15-member volunteer advisory board.



Xavier Cortada's "Underwater HOA: Underwater Markers," 2018, Part of a site-specific, participatory public art installation. Photos by Adam K. Pascale

The New York Times

Excerpt from **The New York Times "12 Artists On: Climate Change"** article (August 22, 2018)

In response to South Florida's vulnerability to rising sea levels, the village of Pinecrest, Florida will encourage its 6,000 households to install an "Underwater HOA" yard sign (similar to the 18- by 24-inch "Home for Sale" yard signs used by realtors) on their front lawns during the first week of December. I numbered each yard sign from 0 to 17 feet (the municipality's land elevation range) to show how many feet of melted glacial water must rise before a particular property is underwater. The backdrops of the signs are watercolor paintings I made in Antarctica while a fellow with the National Science Foundation Antarctic Artist & Writers Program in 2006. These paintings were created using water from the very glaciers that threaten to melt and drown Miami.

By mapping the impending crisis, I make the invisible visible. Block by block, house by house, neighbor by neighbor, I want to make the future impact of sea level rise something impossible to ignore. By asking participants to join the newly chartered group Underwater HOA, I hope to engage my neighbors as problem solvers who will learn and work together now to better prepare themselves and their heirs for the chaos to come.

– Xavier Cortada



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Xavier Cortada

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The grid of propagules at the Miami Science Museum, Miami, 2007. Photo: Xavier Cortada

Reclamation Project

EcoArt by Xavier Cortada



Xavier Cortada's Reclamation Project

By Mary Jo Agerstoun, Ph. D.

Xavier Cortada's *Reclamation Project* (2006-present) is a long-lived community activation ecological art intervention. Together with its spinoffs, *Native Flags* and *Flor 500*¹ *The Reclamation Project* has engaged scores of Floridians, including most of the public school students in Miami-Dade County, in learning about and addressing the widespread disappearance of Florida native vegetation. *The Reclamation Project* continues today to carry out its original focus on the engagement of local residents in the gathering, nurture and planting of mangrove propagules, as a key ongoing element of the Patricia and Philip Frost Miami Science Museum's volunteer coastal restoration programming.²

Origins of the Reclamation Project

Xavier Cortada has been fascinated since childhood with mangroves, especially with the propagules' strange shape and self-planting habit. He came to think of the seeds as a metaphor for the immigrant: floating to a new shore, putting down roots and contributing to a fertile new home community. Mangroves began to appear as a central theme in his works in 2003 with a series of commissioned mural-sized paintings, several of which are permanently installed in government buildings in Tallahassee and Miami. Mangroves dominated Cortada's work for the next decade: in commissioned works for gallery installation, as public art, and culminating in his multifaceted ecological art intervention, *The Reclamation Project*.



Figure 1: Xavier Cortada. *The Journey*. 55x116. Acrylic on Canvas. 2003

In 2006, Cortada witnessed the violent uprooting of mangrove forests near his Florida Keys retreat. This singular event propelled the artist to create *The Reclamation Project*. Motivated to take action, Cortada initially wanted to focus on replanting the area in the Keys where he had witnessed the mangrove forest destruction.

Since he had little information on how to plant mangrove propagules successfully, Cortada solicited assistance from marine biologist Gary Milano, the Habitat Restoration Program Director for the Miami-Dade County Department of Environmental Resources Management whose responsibility it was to plant mangroves in areas designated as "mitigation" sites.³ A "mitigation" site is public land where mangroves may be planted in the numbers taken down under a permit provided by the State for reasons acceptable to the State. Mangroves are highly regulated because of their importance in riparian ecologies, including as nurseries for sea life, as well as their role in protecting land from erosion.

Cortada credits University of Miami classmate Marsha Colbert, Director of the Florida State Department of Environmental Resources, Biscayne Bay Aquatic Preserve, for introductions to Gary Milano, the DERM scientist who became his primary science collaborator; and to art historian and founder of EcoArt South Florida,⁴ Mary Jo Agerstoun in 2007, a watershed Cortada points to as the origin of his understanding that what he was doing intuitively, was a particular art form called "ecological art."⁵

Cortada learned from Milano that his initial idea to plant full-grown mangroves at the site where he had witnessed the trees' removal would not work because the fragile trees could not withstand the strong wave action at that location. The collaboration with Milano, and access to his expertise on mangrove husbandry, became central to the project's success. Milano continued as primary science advisor to the project until his retirement in 2013.



Figure 2: mangrove propagules in store front window. Lincoln Road, Miami Beach, FL, 2007. Photo; Xavier Cortada

Later in 2006, The Bass Museum hosted the first museum-based installation of living mangrove propagules, together with two videos documenting the mangrove forest destruction Cortada had witnessed.⁶ At the same time, in fall 2006, the first full blown *Reclamation Project* began as an installation in shop and restaurant windows along the pedestrian area on Lincoln Road in Miami Beach, just in time for Miami Beach's Art Basel 2006 in early December.

In fall 2006, volunteers first collected propagules, installing them in grids of water-filled plastic cups on the insides of storefront windows along Lincoln Road, Alton Drive and Ocean Drive in Miami Beach, as well as in a condominium lobby used for the Scope Art Fair during Art Basel, 2006.⁷ Later, when the propagules matured, volunteers returned them to a Milano-selected water's edge site, planting them ritually, by repeating the phrase: "I hereby reclaim this place for Nature."

This basic process of volunteer involvement in gathering mangrove propagules, displaying them in grid formations on the windows of shops and restaurants along Lincoln Road, and planting them weeks later, under Milano's professional supervision in public land "mitigation" areas, continued for consecutive years. The entire project ultimately moved to the Miami Science Museum and became the basis for MUVE (Museum Volunteers in Education), the Science Museum's citizen volunteer coastal restoration program.

In addition to Cortada as the project's overall director, and Milano as the supervisor of propagule gathering and planting, Jackie Kellogg recruited volunteers and selected and trained team leaders on the project's science, structure and process, as well as on volunteer supervision. The team leaders also received extensive instruction on logistics, documentation, and how to train volunteers in approaching and explaining the project to prospective hosts in shops and restaurants along Lincoln Road. The volunteers were also trained on how to install the propagules in their containers in the storefront windows.

Cortada stresses that:

Each aspect was assigned to the person best prepared, and most experienced. All participants were educated to become "eco emissaries"— the volunteers, the propagules' hosts, and, most importantly, the public encountering the propagules themselves. And the grand finale was a ritual where volunteers planted while repeating the phrase: "I hereby reclaim this land for nature."⁸

Every year, from 2006-2012, the original *Reclamation Project* model was repeated along Lincoln Road in Miami Beach. Since December 2007, when the Miami Science Museum (MSM), now the Patricia and Philip Frost Museum of Science, hosted the first installation of 1,111 propagules, the project has continued to be implemented, exactly as originally designed, as a special program of MSM's Museum Volunteers in Education (MUVE). MUVE now operates a county wide in-school program, featuring the grid installation design, and the volunteer propagule gathering and planting model, developed for the first appearance of *The Reclamation Project* on Miami Beach in 2006. The project has also been hosted in many other locations across the State and beyond, always following the original model.

The Reclamation Project's aesthetics: art, activism or both?

Cortada sees *The Reclamation Project* as both art and activism. He believes art was the best way at the time to bring the destruction of mangrove forests to high-profile attention, and describes moving intuitively toward a fusion of performance, multi-media installation and social engagement art as the central aesthetic methods.

In retrospect, I can see that I was creating a model that expressed that we don't have to know everything to make change. I did not have a wide and deep knowledge of the art history of contemporary aesthetic approaches as a tool box. I knew the mural approach I had used for a long time in other social engagement situations would not work in this context. I just followed my passion and sense of urgency to help as many people as possible to learn as much about the importance of mangrove forests as I was in the process of doing, and thus to inspire them to care and act as they learned.

Cortada's "performative" approaches echo methods of the "happenings" of the 1950s and '60s "art into life" movement, the 1990s community-centered "social turn" to art.

Performance. *The Reclamation Project* is most similar to the "happenings" of the 1950s and 1960s artist and writer Allan Kaprow named in his classic book *Assemblage, Environments and Happenings*⁸: a collage form of performance, and radical prototype of what later became full-blown performance art, in which the audience is a participating component, and which is often performed in "nontraditional" (e.g., outside art gallery or museum) settings.

Many audience types were drawn into, or engaged with *The Reclamation Project* in various ways, much as audiences for the 1960s “happenings” were drawn in. There were the original volunteers that annually brought propagules to Lincoln Road, and later planted them in permitted mitigation locations; the Lincoln Road shopkeepers and restaurateurs who hosted the project; the general public who encountered the oddly shaped plants in shop windows, and stopped long enough to read about them, or entered a store to ask; the museum visitors at the Bass Museum in 2006 who saw both the grid of propagules and the video showing the mangrove forest destruction in the Keys that had inspired the project to begin with; and the hundreds more students of all ages, families and others who became active volunteers in caring for the propagules and planting them, continuing to do so through museum and public school programs up to the present, with no end in sight.

Time-based Art. For *The Reclamation Project*, a broad definition of this practice is apt: “us(ing) the passage of and the manipulation of time as [an] essential element.”¹⁰ The movement and manipulation of *The Reclamation Project’s* living media (propagules), the project’s organization, reception and continuation over time, the multiplicity of sites, and what happened at each (collection of propagules, finding and preparing display locations, and, finally, their ritual planting), all combine to resemble many types of time-based performance art—from the “Happenings” of the late 1950s down to today’s performative “social practice” projects.



Figure 3: Planting propagules at Bear Cut, Key Biscayne. Miami. 2007. Photo: Xavier Cortada

The process was also described as “choreography,” a time-based art, in a (2007) essay, in which:

*The artist acts as choreographer of collaborative action as well as premier danseur. The resulting “dance” is enacted by a corps de ballet including ...citizens ...scientists ... public officials; and whole institutions from ... museums to local schools and organizations, where the public learns how to carry the dance forward. The public becomes both dancer and audience.*¹¹

Social Sculpture. *The Reclamation Project* refers to the social sculpture¹² genre in its combination of performance with two other characteristics of the traditional sculpture genre—the “additive” (pastiche or assemblage), and the “kinetic”—deployed together to engage social and institutional processes and individuals, as sculptural media. The term “social sculpture” was first used by German artist Joseph Beuys in the 1960s. This art practice is the basis for much of what is known today as “social practice” art.

The artist points out that:

The project was a kind of pastiche or weaving of social and material/natural processes. We had to listen to each other, to the voices of the experts, the volunteers, and be quickly responsive. We had to understand what tools we needed at various points. We needed to quickly understand barriers to moving forward, and be nimble in avoiding them, whether they were bureaucratic/organizational processes or natural processes. And we had to accept when it was time to let go and let Nature move the natural materials of the sculpture forward in their natural settings, and even to let go of the project entirely as my artist’s creation.

Installation Art. An authoritative definition from London’s Tate Gallery characterizes installation art as: “... mixed-media constructions...designed for a specific place or for a temporary period of time...a complete unified experience, rather than a display of separate, individual artworks.”¹³ *The Reclamation Project’s* use of the “installation art” approach was evident at two points: **first**, in the grid of propagules arranged in water-filled plastic containers attached to glass windows or walls. The **second** “installation” was the planting of propagules where they would thrive, their roots protecting land and providing refuge and food for native marine creatures.

The Grid. Art theorists and critics see the grid as announcing the presence of art, specifically, modernist art. In 1979, influential Columbia University art historian and critic, Rosalind Krauss, pronounced that: “The grid functions to declare the modernity of modern art...flattened, geometricized, ordered, it is anti-natural, unreal. It is what art looks like when it turns its back on nature.”¹⁴

Cortada notes that the use of a grid installation format intentionally juxtaposed the living propagules with the geometrics of the urban site where forests of mangroves once had stood:

The cups were intentionally placed in a grid format to juxtapose the organic, living material with the city block grid pattern. Placing them in storefront windows—hard edged rectangles, themselves—was immediately seized upon as not only geometrically appropriate, but also a great location, because the grids could be seen from both the street and the store interior, so it was likely that thousands of people would see them. The grid shape differentiated it enough so it could be seen as—and called—“art.”

Juxtaposing the living propagules with flat geometry not only announced the project as art, it also underscored the project’s message that living nature was not welcome in human beings’ “anti-natural” urban habitat; and could only survive there with constant human attention.

The Surprise Factor

The effect of surprise in causing audiences to stop and think, is similar to the theoretical construct also known as V-effekt, alienation effect, or “distantiation” effect developed by dissident playwright Bertolt Brecht to inspire resistance to the Nazis’ rise to power in Germany in the 1920s and ‘30s by helping theater audiences identify theatrical “tricks of the trade” used by Nazi spectacle producers to emotionally manipulate people into supporting the Reich. Activist artists have since widely adopted this distantiation/surprise effect to call attention to political manipulation, both in and out of the formal theater context. The intent still is to provoke a social-critical response by “mak(ing) the familiar strange.” Cortada credits art historian Mary Jo Agerstoun, for helping him see that his intuitive use of the grid installation form in non-art settings echoed an aesthetic tactic of “making strange” developed by Bertolt Brecht nearly 100 years ago.¹⁵

Hanging the propagules in commercial locations in geometrically arranged, transparent, water-filled plastic containers indeed succeeded in drawing curious attention from passers-by, which was intentional on the artist’s part. Cortada notes:

It did surprise! People go to the museum or gallery expecting to find objects that are intriguing or different, but not in a shoe or book store. It has nothing obvious to do with the purpose of the business, so why is it there? It surprises them, grabs their attention long enough to prompt further inquiry, and, we hope, some change of perspective, as the observer becomes aware by reading the palm card hanging with the plants that these little mangrove shoots can only survive in an urban setting if human beings care for them.

Whether any long-term positive effects on viewers ensued from these surprise encounters is unknown. Financial and other limitations did not allow for evaluation. Cortada noted:

No, we can’t prove that seeing the propagules in unlikely places had the effect we wanted. [But] if you consider how many people visited Lincoln Road over the six years we did the project there, we could estimate that about 200,000 people were exposed to the project. I am satisfied with that.



Figure 4: The grid installation format. Tampa Preparatory School, Tampa, FL. 2009. Photo: Xavier Cortada



Figure 5: Passersby are intrigued by mangrove propagule installation. 2007. Photo: Xavier Cortada

The Reclamation Project's science

A crucial aspect of effective ecological art is its firm basis in science. An ecological art work must integrate scientific analyses of environmental degradation in order to be either neutral or ameliorative in its effect on the natural environment in which it is sited. Ecological art includes a wide range of practices, which all seek to make "visible" the "invisible" processes and causes of degradation. The Reclamation Project incorporates important aspects of the best science about restoration of mangrove stands, has ameliorative effects, and educates diverse and numerous audiences. Nevertheless, the artist points out:

The Reclamation Project was always pro-science. But I never conceived of it as a science project. It was always art in the service of science. My intention was always to help people vote the way scientists think. My sense was they had to be immersed in something so ubiquitous that it had become a backdrop, something familiar, but not understood.

The "something so ubiquitous" was the mangrove: familiar to the point of invisibility, and yet critical to the protection of Florida land. In 2006, the same year *The Reclamation Project* began, Al Gore released his documentary *Inconvenient Truth*¹⁶ across the country. Cortada's approach differed from Gore's in *Inconvenient Truth*. *The Reclamation Project* was not a response to climate disruption scientific discourse, but, rather, to species loss. Cortada explains:

The Reclamation Project took form at a time when skyscrapers were popping up everywhere along Miami shorelines. My direct witness of the environmental destruction being done to make this growth happen moved me to action. There is no doubt that [Al Gore's film] was part of the background as the project formed in my mind. As were the many conversations with scientists on the warming effects they were seeing during my NSF artist residency in Antarctica.¹⁷ As the project matured, we got more deeply into mangroves' climate-related importance, such as carbon sequestration and storm surge protection.

Cortada frankly states that, though he has studied and taught biology, he does not consider himself to be a biologist. He sees *The Reclamation Project* as an art-based mobilization and engagement effort, not a "science project:"

I had been a full time artist for ten years when The Reclamation Project was launched. If my role in the project was anything other than as an artist, it was more as a social scientist, than as a biologist, although I am very comfortable with science and in science milieus. I was more a mobilizer, an engager, an awareness builder, which is totally based in the two decades I spent working with participatory "message" mural projects aiming at community engagement. And, the fact that the Project now resides at the Miami Science Museum, and has required no "science tweaking" at all, speaks, I believe, to how adequate and well integrated the science basis was.

The Reclamation Project's community engagement

Cortada used a "learn together" approach to community engagement, rather than a more traditional "charrette" process. Cortada explains:



Figure 6 Planting mature propagules. Bear Cut, Key Biscayne, Miami. 2007. Photo: Xavier Cortada

It was more like how an art studio functions: the artist provides design and methods, and studio assistants carry out the project. Studio assistants often come up with innovative ways to carry out a design. We learn together. I chose this approach not because I didn't consider, or don't value the charrette and other approaches to community involvement that elicit community desires as the basis for action—I have done this often throughout my career—but, in The Reclamation Project there was a sense of urgency. People needed to experience firsthand because there really wasn't experience there to draw on. I didn't want The Reclamation Project to be only an awareness exercise. I wanted to help advance a culture of caring.

Cortada felt the art studio organization approach was the best way to "help people act" and "advance a culture of caring." Cortada's intuition was that "everyday people" can most quickly arrive at a place of action through direct witness, by "getting their fingernails dirty" and learning together.

Did it work?

The evidence that *The Reclamation Project* has started an ongoing "learning together" conversation, where the engaged community and the "teacher" exchange insights and practical ideas, is apparent in its continuing vibrant existence across many community platforms. The project illustrates Wallace Heim's concept of "slow activism," where a successful "slow activist"¹⁹ exchange "...works not only in the immediacy of the [first] event," but in an ongoing way, in "unforeseen" future circumstances.

Xavier Cortada believes the 2006 *Reclamation Project* model, has become an ongoing "slow activist" exchange that is realizing the process he wanted to see at the beginning:

I have loved learning about the concept of social sculpture and slow activism. I see The Reclamation Project as a great combination of both of these, even if I created the project without knowing these art genres even existed! The project is still very much alive! The conversation continues, right now! In and out of institutions. Between individuals, between students and teachers, between artists and other art folk. It is Slow Activism!

One can point to the instantly recognizable characteristics of succeeding generations of *The Reclamation Project* as evidence that the project is "working." Each new appearance melds established scientific methods, teacher-learning-from-pupil-learning-from teacher pedagogy, and seemingly diametrically opposed aesthetic approaches: the choreographed movement of people and living plants, to Nature's cadence; the grid installation form; the "slow activism" weaving together unlikely partnerships and social processes; and the mobilization of surprise as an audience engagement tactic.

Cortada feels the project has not suffered from lack of a formal evaluation,²⁰ and that *The Reclamation Project* did successfully integrate aesthetics, science and community engagement:

Whether this project has "worked" is a hope of mine, and can't necessarily be proven. There are much more efficient ways to accomplish reforestation than what The Reclamation Project did. Using seedlings purchased from commercial nurseries, Gary Milano carried out his job to plant mangroves with prison labor. That is both efficient and inexpensive, though, of course, this use of prison labor can be questioned. Nonetheless, the Reclamation Project cannot be said to have been created as an experiment that showed the way to restore mangrove forests either more scientifically or more efficiently. It was created to engage community

Cortada reported that there were a few small surveys here and there, especially if a grant was involved. But no overall evaluation was ever done on how the project worked, though, as in most of his work, a voluminous archive documenting the process of creation in most of the sites exists on various web-based platforms. Cortada believes the continuing life of the project is proof of its success:

The best outcome, for me, is that the project now happens without me. It is being done on an ongoing basis as a central project of the education program and volunteer involvement at the Science Museum. I think it is also significant that its curriculum is in every public school in the county! In most cases now, the project does not have a high profile as art. It exists primarily as a science education initiative. Nevertheless, I continue to see it as both art and activism, in the service of science and the environment.



Figure 7 The grid of propagules at the Miami Science Museum. Miami. 2007. Photo: Xavier Cortada

Footnotes:

- ¹ Xavier Cortada, "Florida Native Plant Society presentation: Native Flags," accessed July 26, 2016, <http://www.xaviercortada.com/events/EventDetails.aspx?id=289283> and Xavier Cortada, "FLOR 500 About the Project," accessed July 26, 2016, http://www.xaviercortada.com/?page=FLOR500_about
- ² <https://www.frostscience.org/museum-volunteers-for-the-environment/> Downloaded 8-13-2018
- ³ See State regulations on removal of mangroves, and mitigation at: <http://www.flwaterfront.com/information/mangrove-regulations/>
- ⁴ EcoArt South Florida was a non-profit 501 c 3 organization (2007-2015) founded by Dr. Mary Jo Agerstoun. The organization's purpose was to advocate for bringing more south Florida artists into ecological art practice.
- ⁵ Xavier Cortada. Interview by Mary Jo Agerstoun. July 18, 2016.
- ⁶ Xavier Cortada, "The Reclamation Project," accessed July 26, 2017, <http://www.cortada.me/2006/reclamation/bass-index.html> and "Miami Beach Reclamation," accessed July 26, 2016, <https://www.youtube.com/watch?v=nH54uYF9ZfI> and Xavier Cortada, "18-mile stretch," accessed July 26, 2016, <http://cortada.com/videos/2006/18-mile-stretch>.
- ⁷ Xavier Cortada. Interview by Mary Jo Agerstoun. July 18, 2016.
- ⁸ Xavier Cortada. Interview by Mary Jo Agerstoun. July 18, 2016.
- ⁹ See: Allan Kaprow, Jean-Jacques Lebel, Gutai Bijutsu Kyokai. *Assemblage, Environments and Happenings*. New York: H. N. Abrams, 1966.
- ¹⁰ Source: <https://www.guggenheim.org/conservation/time-based-media>. Experimental film, video art and installation, sound, performance and multimedia computing are more frequently today considered "time-based" arts. *The Reclamation Project* exists as photo and video documentation, often used in installations, but it is really "time based" primarily in what the Guggenheim describes as having "duration as a dimension and unfold[ing] ...over time."
- ¹¹ Mary Jo Agerstoun, Ph.D. "Cortada's EcoArt." Online at http://www.reclamationproject.net/?page=Artist_essay
- ¹² For more on the origins and a currently operating social sculpture masters and PhD program in the UK see: <http://www.social-sculpture.org/>
- ¹³ Tate, "Art Terms," accessed October 10, 2017, <http://www.tate.org.uk/art/art-terms/i/installation-art>
- ¹⁴ Rosalind Krauss, "The Grid," October, no. 9, 1979, 51-52.
- ¹⁵ Xavier Cortada. Interview by Mary Jo Agerstoun. Online. July 18, 2016: For examples of contemporary uses of Brecht's approach, see: *Beautiful Trouble*, the self-described "crash course in carnivalesque realpolitik," which cites Brecht's "distantiation" as central to a contemporary art-activist practice. See Andrew Boyd, ed. *Beautiful Trouble: A Toolbox for Revolution*. New York and London, 2012, 210. Online: *Beautiful Trouble*, "Theory: Alienation Effect," accessed November 19, 2017, <http://beautifultrouble.org/theory/alienation-effect/>. See also L. M. Bogard, *Tactical Performance: The Theory and Practice of Serious Play*. London: Routledge, 2016, 10.
- ¹⁶ Thomas Summer, "Changing Climate: 10 years after an Inconvenient Truth." *Science News*. April 8, 2016. <https://www.sciencenews.org/article/changing-climate-10-years-after-inconvenient-truth>
- ¹⁷ Xavier Cortada, "About," accessed November 19, 2017, http://www.xaviercortada.com/?Ant_about Cortada was "a recipient of the 2006-2007 National Science Foundation's Artist Residency, when he traveled to Antarctica December 28, 2006 - January 12, 2007 to implement various art projects."
- ¹⁸ A charrette is a creative process akin to brainstorming that is used to develop solutions to a problem within a limited timeframe. Charrette has become central to many community-engaging processes and practices beyond its origin in architecture and design.
- ¹⁹ Heim, *Ibid.* 187-188
- ²⁰ Xavier Cortada. Interview by Mary Jo Agerstoun. July 18, 2016

Mary Jo Agerstoun, Ph. D. is an art historian who studies contemporary art that engages important public issues. She lives in West Palm Beach, FL and wrote "Xavier Cortada's Reclamation Project" as one of the chapters of her upcoming book on eco-art.



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SOUTH CENTRAL

CLIMATE ADAPTATION SCIENCE CENTER

SCIENCE TRANSLATOR

Position Description

The Science Translator will work with the Assistant Director and other South Central Climate Adaptation Science Center (CASC) staff to implement our science communications strategy, engage with stakeholders, and develop content for and update our website. The incumbent will be responsible for translating South Central CASC science through factsheets, newsletters, social media, etc. to promote, facilitate, and improve the use of climate science in natural and cultural resource management decisions; strengthening internal communications and partnerships across the South Central CASC consortium through webinars and conference calls; and leading the design of new webpages and update online content using WordPress. This position also will work with other Federal and fellow CASC staff to ensure consistent messaging across the National CASC network, as well as serve as the main point of contact for communication requests from the National Climate Adaptation Science Center. In addition, the Science Translator will assist South Central CASC staff in engaging with stakeholders, planning and implementing workshops and meeting, and compiling material for reports.

The selected candidate will join a diverse, interdisciplinary team dedicated to supporting the use of climate information in adaptation planning. The position will be located in our main office at the University of Oklahoma in Norman, Oklahoma.

Required Documents:

Resume, Cover Letter, Writing Sample

*Writing sample can be science factsheets, newsletter article, presentation abstract, press release, etc., no longer than one page, demonstrating communication skills.

Required Education/Experience:

- Must have a bachelor's degree in a climate science-related field (e.g., geography, meteorology, environmental sustainability, or similar) OR equivalent combination of education/job related experience.
- 0-12 months of experience in a communications-related field (e.g., journalism, visual communications, or similar) with a strong understanding of climate science.

Qualifications

- Experience working with web design, specifically WordPress
- Familiarity with Windows and Mac computer operating systems

- Demonstrated strong communication, writing, and editing skills
- Demonstrated ability to effectively and creatively incorporate feedback from multiple sources and stakeholders
- Demonstrated ability to be highly organized, handle multiple projects, complete work within deadlines, and create and deliver effective communications materials
- Must have a valid driver's license and be able to pass a background check.

Preferred Qualifications

- Interest in and/or familiarity with climate/weather science, science communication, or environmental science
- Familiarity with Adobe Creative Suite (particularly InDesign and Illustrator)
- Familiarity with HTML
- Familiarity with story maps using ArcGIS online

Salary range: \$32,750 to \$40,000, depending on education and work experience. Early-career candidates are encouraged to apply. The University of Oklahoma is an equal opportunity institution: www.ou.edu/eoo.

To apply for the position, go to <https://jobs.ou.edu> **Job Number 200770**

Application reviews will begin on April 1, 2020.