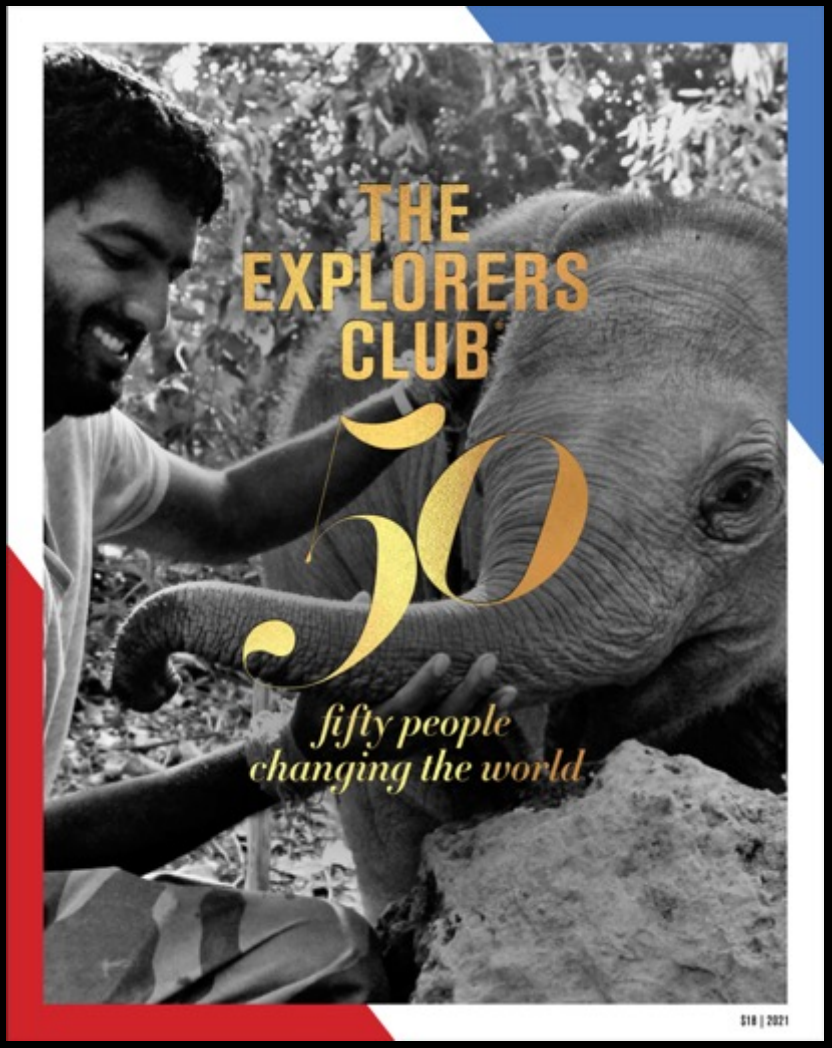
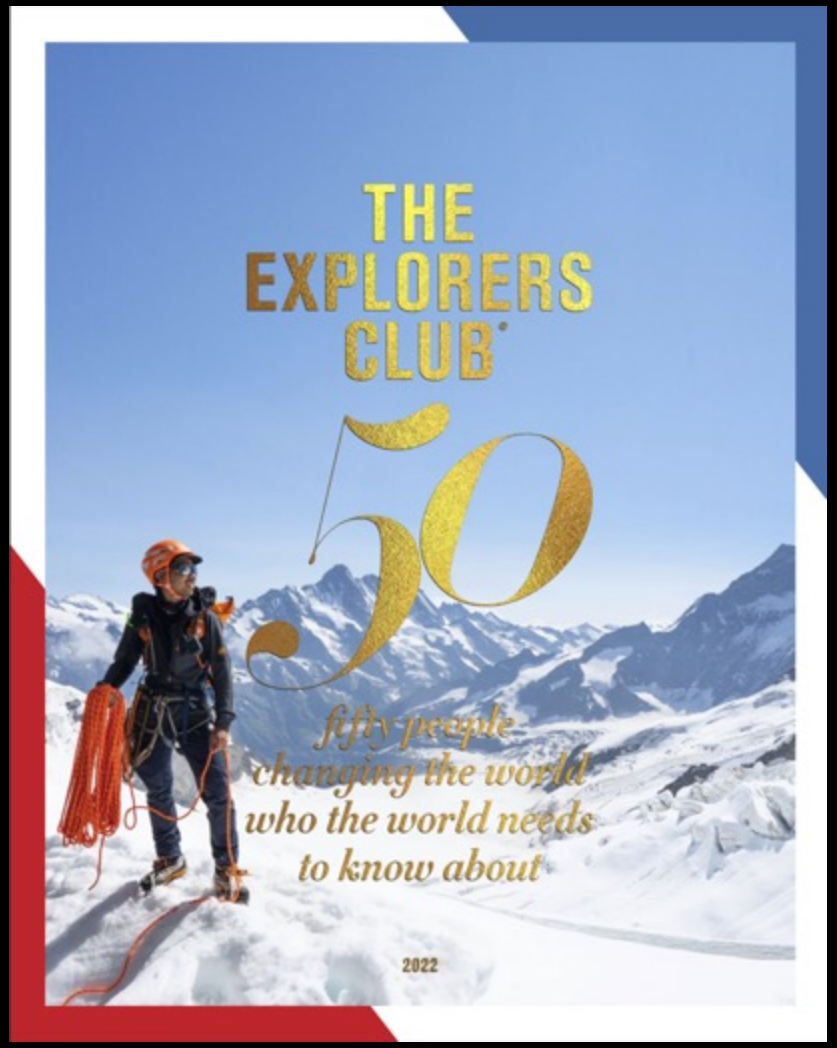
ExplorersWeekend.org @ EPFL.ch





EC50 Online Speakers Roster ‘23

Five parallel thematic Zoom Rooms — Sep 1st 17:00 – 21:00 CET

SCIENCE

CONSERVATION

HUMANITIES

EDUCATION

ARTS

Free to attend, join sessions via http://tiny.cc/ExplorersWeekend

SCIENCE

DIEGO CARDEÑOSA

MARINE SCIENTIST

Nominated by JOHN JOAQUIN BOHORQUEZ TM'20

A DISTINGUISHED POSTDOCTORAL RESEARCH FELLOW AT FLORIDA INTERNATIONAL UNIVERSITY, DIEGO CARDEÑOSA HAS FOCUSED ON DETERMINING THE SPECIES COMPOSITION OF THE INTERNATIONAL SHARK TRADE; THE IDENTIFICATION OF SUPPLY CHAINS AT HIGHEST RISK OF ILLICIT TRADE; AND THE DEVELOPMENT AND IMPLEMENTATION OF RAPID, PORTABLE, AND INEXPENSIVE IN-PORT DNA PROTOCOLS TO ENHANCE THE ABILITY OF LAW ENFORCEMENT OFFICERS IN MAJOR WILDLIFE TRADE HUBS IN ASIA, EUROPE, AND SOUTH AMERICA TO DETECT ILLICIT WILDLIFE COMMERCE. "SHARKS," SAYS CARDEÑOSA, "HAVE BEEN MY LIFELONG PASSION. UNFORTUNATELY, THEY ARE FACING A GLOBAL CONSERVATION CRISIS."

The shark fin trade is responsible for the exploitation of 100 million sharks per year, where two-thirds of the species being traded are threatened with extinction. This is also an opaque market that is difficult for outsiders to penetrate. As a result, we have essentially no information on the composition of the trade in recent decades. This is problematic because many shark species have been listed on the Appendix II of the Convention on International Trade in Endangered Species (CITES) since 2013, and we have no idea if these listings have had the desired conservation outcome.

Through my work, I have identified some 15,000 shark fin samples from the largest markets in Southeast Asia using mini-barcoding tools that I developed. I found CITES-listed sharks were still common in the trade. When compared to very sparse reported trade, this indicates massive global trafficking of these species. My most recent work in these markets was at the core of the argument that resulted in the inclusion of a historic number of shark species in CITES during the last Conference of the Parties.

Locally, and through exploration, I have found that Colombia is a critical spot for threatened shark species. In the Caribbean, I founded a hidden, and previously undescribed, shark sanctuary that holds the highest shark abundances in the Great Caribbean. In the Pacific, I founded the last remaining refuge for one of the most threatened shark species in the world, a refuge that we are fighting to protect to avoid the extinction of the world's smallest hammerhead shark. These results give me hope and drive me to continue working to generate new knowledge that can be translated into immediate policy and conservation actions to halt the widespread declines of sharks around the world.

I am committed to fight against these trends through the creation of scientific knowledge and outreach with the hope that future generations can build upon my work to keep exploring and fighting to maintain the balance in our planet.

FROM TOP: DIEGO CARDEÑOSA MEASURES AND TAGS A SCALLOPED BONNETHEAD SHARK OFF THE PACIFIC COAST OF COLOMBIA. CARDEÑOSA IN HIS LAB.

ALICIA COLSON PHD

FI'10 — ETHNOHISTORIAN

Nominated by **MARK WOOD FI'15**

ALICIA COLSON IS AN ARCHAEOLOGIST AND ETHNOHISTORIAN WORKING WITH COMPUTING SCIENTISTS. SHE COLLABORATES WITH INDIGENOUS PEOPLES, NGOS, AND GOVERNMENTS TO UNDERSTAND OUR PASTS. EXPEDITIONS IN NAMIBIA AND ICELAND ENCOURAGED HER TO PRACTICE CITIZEN SCIENCE. AS A WILEY DIGITAL ARCHIVE FELLOW, HER PASSION TO EXPLAIN TO THE WIDEST AUDIENCES LED HER TO PRODUCE AN ESRI STORYMAP OF THE ILHAS DE SANTA CATARINA, BRAZIL, HER CHILDHOOD HOME. SHE IS CO-FOUNDER OF *EXPLORATION REVEALED* WITH BRIONY TURNER, THE SCIENTIFIC EXPLORATION SOCIETY'S DIGITAL HYBRID PUBLICATION THAT SHOWCASES ADVANCES IN KNOWLEDGE AND PEER-TO-PEER SUPPORT FOR THOSE ENGAGED WITH SCIENTIFIC EXPLORATION AND ADVENTURE-LED EXPEDITIONS.

I'm interested in the ways in which different perspectives influence how images are used and understood. Images have the ability to convey vast quantities of information. As a small child in a fishing village in rural Brazil, and later in Viana do Castelo, Madrid, and Lisbon, I observed adults reading images on walls of the churches. At the time I didn't really think about what I'd observed. In my education, text was the predominant means of conveying information. Images, including moving and still images, and oral information, were sidelined.

Typically, rock art is dealt with by archaeologists in such a way that the information conveyed by an image is isolated into various disciplines and specialties. While this is convenient in some ways, it betrays the cultural baggage on the part of the analysts. In order to consider these images as an archaeologist and an ethnohistorian, I had to learn new techniques and methods. I could deal with what was at hand, rather than something merely fashionable. Digital tools enabled me to model the ways in which others viewed the same images. I could recognize that what is insider and outsider depends on one's perspective, one's background, and how it is expressed using text, images, sound and moving images. What people call rock art is really a painting or an engraving, an image on a rock surface. It may be as valuable as oral and textual information that is influenced by our world view, and the way we organize lives. Rock art has much to say – if we only look.

My collaboration with leading elders from the Lac Seul First Nation, in northwestern Ontario, enables them. The elders wish their voices to be heard, producing two academic articles. The first explains the meaning of their pictograph sites to local indigenous peoples and to outsiders. The second studies a birchbark scroll, created by a medicine woman who was a member of their community.

ABOVE: ALICIA COLSON PHOTO: DOUGLAS L. RIDEOUT
FACING PAGE: CITIZEN-SCIENCE BASECAMP FOR BRITISH EXPLORING, NE ICELAND. PHOTO: ALICIA COLSON; A WOODLANDS STYLE ROCK PAINTING SITE, LAKE OF THE WOODS, ONTARIO, CANADA. PHOTO: ALICIA COLSON

JOE CUTLER

FRESHWATER ECOLOGIST/ICHTHYOLOGIST

Nominated by **JOE GRABOWSKI FI'18**

JOE CUTLER IS A SELF-PROFESSED "FISH GEEK," A FRESHWATER ECOLOGIST, ICHTHYOLOGIST, AND CONSERVATION BIOLOGIST WHO STUDIES RIVERS AND LAKES IN SUB-SAHARAN AFRICA, WHERE HE DOCUMENTS FRESHWATER BIODIVERSITY, ASSESSES ECOSYSTEM HEALTH, AND SUPPORTS CONSERVATION EFFORTS. IN 2020, HE LED THE FIRST MAJOR EXPEDITION ON GABON'S OGOOUÉ RIVER IN 150 YEARS, A 1,000-KILOMETER RAFT-BORNE TRANSECT, PROVIDING SIGNIFICANT INSIGHT INTO BIOGEOGRAPHICAL PATTERNS WITHIN THE WATERSHED AND CRITICAL BASELINE DATA ON PROPOSED HYDROPOWER DAM SITES BEFORE CONSTRUCTION COMMENCED. CUTLER PLANS TO SURVEY ANOTHER 25 MAJOR RIVER SYSTEMS IN ZAMBIA, LEADING SCIENTISTS ON BOAT-BASED SOURCE-TO-SEA RESEARCH EXPEDITIONS. THESE INCLUDE THE ZAMBIAN KAFUE, LUNGWEBUNGU, AND ZAMBEZI RIVERS.

As a child, I followed my grandfather and parents out to streams, lakes, and the rocky coast in central California to go fishing. In those days, our catch seemed endlessly abundant, but over the past 30 years I have watched fisheries decline, and species disappear. Globally, our oceans are overexploited and there are too few healthy streams, wetlands, and lakes. Freshwater ecosystems cover less than 0.1 percent of Earth's surface but are home to nearly 25 percent of all vertebrate biodiversity. Alarmingly, freshwater ecosystems are among the most endangered, and nearly 33 percent of all freshwater fish are threatened with extinction.

I have collected many undescribed fish, and there is nothing more exciting than pulling a net through the shallow waters of a new habitat. I am often among the first scientists to survey a stream or lake. In 2017, my team discovered *Enteromius pinnimaculatus*, a small minnow with a unique polka-dot dorsal fin found only in the Louetsi River in southern Gabon. Our research resulted in dam relocation, protecting this and other species from possible extinction. By combining my research with outreach, I have been able to impact policy in Cameroon and Gabon to promote protection of freshwater ecosystems. In Gabon, there is a newly launched effort to protect 30 percent of freshwater ecosystems by 2030, and the data I collected helps to determine where new protected areas will be located. In Cameroon, volcanic crater lakes are better protected due to my research and outreach both in the local community and internationally.

My hope is that by exploring, documenting, and describing the richness of freshwater biodiversity, I can give freshwaters a voice and inspire conservation of fishes and aquatic ecosystems both in sub-Saharan Africa and around the globe. I dream that future generations will play by creeks, catch a fish or two, and drink straight from a healthy river.

FROM TOP: JOE CUTLER RAFTS ON THE OGOOUÉ RIVER, NEAR MIÉLÉ, GABON. CUTLER COLLECTS SAMPLES AT LASTOURSVILLE IN WEST CENTRAL GABON. PHOTOGRAPHS BY MEGAN SIXT.

RACHEL GRAHAM

MARINE CONSERVATION SCIENTIST

Nominated by **MILBRY C. POLK MED'95**

RACHEL GRAHAM IS AN AWARD-WINNING SHARK CONSERVATION SCIENTIST WHO HAS FOCUSED ON COMMUNITY-BASED RESEARCH AND EXPLORATION. THE FOUNDER AND DIRECTOR OF THE INTERNATIONAL NONPROFIT MARALLIANCE, SHE HAS SPENT MORE THAN 30 YEARS LIVING IN CENTRAL AMERICA AND HAS CARRIED OUT DEVELOPMENT, ENVIRONMENT, AND MARINE PROJECTS IN LATIN AMERICA, AFRICA, AND OCEANIA. HER LEADERSHIP IN 70-PLUS EXPEDITIONS GLOBALLY HAS CHANGED ATTITUDES TOWARD SPECIES SUCH AS SHARKS AND MODIFIED CONSUMER AND FISHING BEHAVIORS. A PASSIONATE AND CREATIVE VISIONARY WITH DEMONSTRATED ENTREPRENEURIAL SUCCESS AND A TRACK RECORD IN INNOVATION, GRAHAM SEEKS WIN-WIN SOLUTIONS TO REVERSE MARINE BIODIVERSITY LOSS AND LEAVE A LEGACY OF THRIVING SHARK POPULATIONS.

Exploration is only satisfying if you can share it meaningfully with others. I delight in shaping a growing cohort of local researchers and marine managers who now incite awe of and pride for sharks in their countries. That many of my cohorts of next-gen conservationists are young women, who buck tradition and culture to take on a new professional mantle—formerly the near-exclusive domain of men—further fills me with pride and hope for the future of our seas. Twenty years ago, Heidi Dewar and I wrote down all the women we knew conducting shark field research: 14 names globally. When we pared it down to those in a relationship and/or those juggling work with children: it was only us two. We made it part of our mission to change this statistic and have inspired a generation of young women to explore, work in the field, and raise a family.

FROM TOP: RACHEL GRAHAM CAPTURES MATING FISH IN 3-D IN THE WATERS OFF PANAMA, AND TAKES SAMPLES FROM A SCALLOPED HAMMERHEAD, ALSO IN PANAMA.

My approach has fostered a more holistic, compassionate conservation ethos, now widely replicated globally. In the course of my research, I have pioneered new analytical and monitoring techniques, using remote telemetry as well as fisher-led, low-cost, and easy to apply standardized methods for cross-site comparison, many of which have become standard in the field. This approach has not only democratized science and exploration, it has led to joint discoveries of new species, new behaviors, and processes that include and value local knowledge of fish behavior, populations, fisheries, and effective management methods. The building of relationships, trust, and valuation of all knowledge sources has strengthened traditional fisher voices, who advocate more confidently for their future and for community youth to view the sea to grow a purposeful career. I envision the rewilding of our seas, one building block at a time, cemented with the wonder of exploration and discovery, and the nurturing of local talents and leadership to ensure continuity of stewardship for the sea and its fish for generations to come.

SCIENCE

TANYA HARRISON

PLANETARY SCIENTIST

Nominated by **NINA LANZA FN'20**

TANYA HARRISON, KNOWN IN THE INDUSTRY AS A "PROFESSIONAL MARTIAN," HAS WORKED AS A SCIENTIST AND MISSION OPERATIONS SPECIALIST ON MULTIPLE NASA MISSIONS TO MARS. BRIDGING THE WORLDS OF MARS AND EARTH, AS WELL AS ACADEMIA AND INDUSTRY, SHE CURRENTLY WORKS AS THE DIRECTOR OF SCIENCE FOR IMPACT AT PLANET LABS AND WAS PREVIOUSLY RESEARCH DIRECTOR AT ARIZONA STATE UNIVERSITY'S NEWSPACE INITIATIVE. SHE HOLDS A PHD IN GEOLOGY AND REGULARLY APPEARS ON TV AS A SPACE EXPERT. HARRISON IS ACTIVE IN MENTORSHIP, EDUCATION, AND OUTREACH INITIATIVES AND COFOUNDED THE ZED FACTOR FELLOWSHIP TO INCREASE DIVERSITY, INCLUSION, AND ACCESSIBILITY IN AEROSPACE. HER FIRST NONACADEMIC BOOK, *FOR ALL HUMANKIND*, NOTCHED THE TOP SPOT ON AMAZON'S AERONAUTICS AND ASTRONAUTICS BOOK LIST.

When you hear "explorer," certain archetypes spring to mind: Sir Edmund Hillary and Tenzing Norgay climbing Mt. Everest; Neil Armstrong and Buzz Aldrin walking on the Moon; Amelia Earhart flying solo across the Atlantic. These endeavors all require the physical ability to venture into the unknown, inherently leaving behind anyone without that capacity. Space exploration, however, can be an equalizer. Nearly everything is done remotely through rovers, satellites, and telescopes. You can explore the surface of Mars—or our own planet—from anywhere on Earth with an internet connection. I have a rare condition, ankylosing spondylitis (AS), a physical disability that made me worry I'd never achieve my space dreams. As a queer woman with AS, I want to be the representation that was missing for me. Through efforts like the Zed Factor Fellowship and sharing my AS journey on social media, I help others with disabilities, women, and those identifying as LGBTQ+ feel like space is something they can be a part of.

No matter the planet, I strive to make space more accessible via data, communication, and physical access. I shared the maps created in my PhD publicly for anyone to utilize in future work. In my role at Planet Labs, I help scientists find no-cost pathways to our data for use in groundbreaking research to understand our changing Earth. I communicate science to broad audiences through a variety of media to increase access to information.

Space resonates with people as few other sciences can, making it a fantastic tool to encourage curiosity. I aim to answer anyone's questions in language they can understand, without dumbing it down, often generating more questions. Making people genuinely feel like they can approach scientists, with no "stupid" questions, helps spur a dialogue and access the curiosity of their childhood in adulthood. More scientists should strive to break the perception of the inaccessible "ivory tower." Collectively we can broaden the perception of what it means to be an explorer.

TANYA HARRISON WITH THE CANADIAN SPACE AGENCY'S MARS EXPLORATION SCIENCE ROVER (MESR) IN THE MARS YARD AT THEIR HEADQUARTERS NEAR MONTREAL. PHOTOGRAPH COURTESY THE CANADIAN SPACE AGENCY.

SCIENCE

MORIBA JAH PHD

FN'21 — SPACE ENVIRONMENTALIST

Nominated by **MILBRY POLK MED'95**

MORIBA JAH, AN ASSOCIATE PROFESSOR OF AEROSPACE ENGINEERING AND ENGINEERING MECHANICS AT THE UNIVERSITY OF TEXAS AT AUSTIN, IS THE HOLDER OF THE MRS. PEARLIE DASHIELL HENDERSON CENTENNIAL FELLOWSHIP IN ENGINEERING. HE HAS WORKED WITH A TEAM TO DEVELOP ASTRIAGRAPH, AN AWARD-WINNING, FIRST OF A KIND, MAP THAT SHOWS WHERE OBJECTS ARE PREDICTED TO BE LOCATED IN SPACE, IN NEAR REAL TIME. HE IS A FELLOW OF MULTIPLE ORGANIZATIONS, INCLUDING TED, AMERICAN INSTITUTE OF AERONAUTICS AND ASTRONAUTICS, AMERICAN ASTRONAUTICAL SOCIETY, INTERNATIONAL ASSOCIATION FOR THE ADVANCEMENT OF SPACE SAFETY, ROYAL ASTRONOMICAL SOCIETY AND THE AIR FORCE RESEARCH LABORATORY.

The first space object, Sputnik, was launched in 1967. In 2021, we're estimating that there are nearly 500,000 objects currently orbiting the Earth. The problem is that we are tagging and monitoring only 40,000 of them. The rest are totally unaccounted for, floating out there completely untracked. The space sector still operates like the wild, wild West. Satellites and other spacecraft are launched into orbit and operate in an environment without coordination or planning, with no global governing body. Recently, Russia blew up one of its own satellites in an orbit. The resultant debris cloud now threatens other working satellites and human life on the space station.

As a witness to the environmental detriment from abandoning our intergenerational contract of stewardship and custodianship, embodied by some of our indigenous people, my goal is to recruit empathy across humanity toward this problem. My effort is to deliver the technology and knowledge needed to create a safe, secure and operationally sustainable space domain. We don't know what we don't measure. Our team thrives to be a Waze application for space, by collecting, aggregating, curating and exploiting globally sourced measurements of stuff out there.

I aim to provide a way for machines to show us ourselves, and the consequences of our actions on our long-term sustainability and to connect environmentalism of land, air and sea, to space. I have seen the effects of humanity abandoning our original intergenerational contract of stewardship and custodianship for Earth. Indigenous peoples had knowledge about how to live in balance with life. With this realization, I felt an indescribable presence that came forth asking me if I was willing to do whatever I could to help humanity remember this original contract of stewardship—of our home and the universe as a whole, where all things are interconnected.

FACING PAGE: JAH WITH FAMILIAR MENTOR; JAH AT UT.

DANIELLE N. LEE

BIOLOGIST

Nominated by **ALEXANADRA SUTTON LAWRENCE TM'14**

DANIELLE N. LEE STUDIES NUISANCE ANIMAL ETHOLOGY, EXAMINING THE NATURAL HISTORY, BEHAVIORAL BIOLOGY, AND MORPHOMETRIC TRAITS OF FIELD MICE AND GIANT POUCHED RATS ACROSS URBAN GRADIENTS IN METRO ST. LOUIS, MISSOURI AND TANZANIA. FROM MEMPHIS, TENNESSEE, SHE STARTED EXPLORING IN LOCAL PARKS. IN GRADUATE SCHOOL, SHE ENGAGED STUDENTS IN EXPERIENTIAL LESSONS IN LIFE SCIENCES, ENVIRONMENTAL SCIENCE, AND URBAN ECOLOGY. SHE SHARES HER SCIENCE EXPERIENCES VIA SOCIAL MEDIA TO INCREASE MINORITY PARTICIPATION IN THE SCIENCES AND IS AN ASSISTANT PROFESSOR IN THE DEPARTMENT OF BIOLOGICAL SCIENCES AT SOUTHERN ILLINOIS UNIVERSITY EDWARDSVILLE.

Nuisance rodents are the most innovative commensal animals known. Various species of field rats and field mice have successfully made a living off of humans for thousands of millennia. Some of the biggest public health challenges on the horizon will likely center nuisance rodents as vectors of disease and illness. My students and I do basic science and provide information in the service of applied research interests useful to communities in ongoing pest management battles, to public health researchers, and specifically to applied psychologists who train pouched rats to detect landmine explosives and diagnose tuberculosis exposure in patients.

In 2012, as a post-doctorate researcher eager to make a name for myself studying African giant pouched rats in Tanzania, I soon realized that if I really wanted to understand pouched rat behavior and ecology, I needed to re-evaluate how I conducted myself and science. I was a guest and a learner first and foremost, and learning means listening. From local residents and Tanzanian scientists, I learned much about the natural history of this species.

The privilege of working internationally comes with the responsibility of preparing other Western scientists to do science that centers on respect, patience and justice, especially with regard to Indigenous peoples. I am committed to training students, guided by the principles of Service Scholarship. I model, instruct, and mentor students to evaluate traditional field-science practices. As we examine life history traits, ecology and the behavior of wild animals, we integrate and demonstrate the value of the contributions from all scientific practitioners and knowledge keepers, regardless of age or credentials. This improves the quality of the research we produce and enriches the fields of science overall. It invigorates the intellectual promotion and economic stability of disenfranchised communities and developing nations.

ABOVE: DANIELLE N. LEE PHOTO: BRET HARTMAN (TED 2019)
FACING PAGE: LEE WITH POUCHED RAT ON SHOULDER; WITH FIELD FLAGS
PHOTOS: DANIELLE N. LEE ARCHIVES

SCIENCE

NICK OVENDEN

ADVOCATE/REGENERATION BIOLOGIST

Nominated by **MARTIN KRAUS MR'15**

NICK OVENDEN—A TEACHER WITH A BACKGROUND IN MOLECULAR BIOLOGY WHO IS CONCERNED ABOUT CLIMATE CHANGE—MOVED FROM MADRID TO ECUADOR IN 2017 TO LEARN ABOUT TROPICAL FOREST PEOPLES AND REFORESTATION. HE FOUNDED YAKUM IN 2018, AN ORGANIZATION DEVOTED TO REGENERATING AMAZONIAN FORESTS, FOODS, AND CULTURES, WHILE REVITALIZING CRUCIAL PLANT KNOWLEDGE AND COMMUNITY NUTRITION. REFORESTING WITH INDIGENOUS COFAN, KICHWA, SIEKOPAI, AND SHUAR COMMUNITIES, YAKUM AIMS TO PLANT 1,000,000 TREES BY 2030, REPRESENTING MORE THAN 250 HIGH-NUTRIENT FRUIT AND NUT TREE SPECIES.

Despite centuries of cultural erosion wrought by colonization, the Indigenous people in the Amazon have retained their rich and vibrant cultures and a wealth of traditional knowledge of their forests, which harbor medicinal plants and some of the most nutrient-rich foods on the planet. Yet many groups in modern Amazonia have come to be malnourished. As their forests have been felled and their territories lost, accessing nutritious foods has become difficult.

Fully aware of the fraught history of foreign aid and coercion, Yakum, an organization I founded in 2018, seeks to strengthen the agency of Amazonia's people, largely through food sovereignty: the control over, and access to, culturally relevant and highly nutritious foods.

Successful reforestation requires rigorous planning—knowing which tree species to plant and developing horticultural objectives together with the landowners. The work must be carried out in collaboration with the local communities to ensure follow-through on maintenance, keeping saplings free of weeds for at least three years, for example.

Prioritizing nutritional significance, Yakum has planted some 50,000 trees, mostly fruits, including some 20 extremely rare species. A great deal of carbon will be sequestered as a result of our work: we are using biochar and bokashi inoculates from mycorrhizal fungi on all our plots to restore the "Wood Wide Web," improving ecosystem function from the soil up.

The value of restoring knowledge about, and consumption of, more abundant, varied, and nutritious traditional foods otherwise displaced by white rice, instant coffee, and tinned tuna is so important to cultural identity. We are also encouraging young people to continue speaking their native tongue by hiring local Indigenous staff. As a result, most of the work is carried out in their own languages.

With access to improved health, these communities can make better decisions, conserve their forests, and spend less money on healthcare—not to mention wasting money on buying food!

FROM TOP: A SIEKOPAI FRIEND, JOSÉ PAYAGUAJE, SEARCHES FOR FRUITS 30 METERS UP IN THE CROWN OF A SUTERURU TREE, WHICH HE CLIMBED WITHOUT EQUIPMENT. THE FRUITS HE COLLECTED INCLUDE PËNKA, 'CUTU (WILD CACAO), PËRË MAJARÓ, AND THE FLOWER OF A WILD RIVERBANK PASSION FRUIT.

SCIENCE

NATALIE T. SCHMITT

ECOLOGIST/GENETICIST

Nominated by **RODRIGO MEDELIN FI'21**

NATALIE SCHMITT IS AN EMPATHETIC ECOLOGIST, A CONSERVATION GENETICIST, AND A DOCUMENTARIAN. SHE IS DEEPLY PASSIONATE ABOUT PROTECTING BIODIVERSITY USING HARD SCIENCE, PUBLIC EDUCATION AND COMMUNITY EMPOWERMENT. STUDYING ELUSIVE, ENDANGERED SPECIES, INCLUDING SNOW LEOPARDS AND ANTARCTIC WHALES, SHE HAS EMPOWERED GRASSROOTS CONSERVATION. NATALIE IS DEVELOPING WILDTECHDNA, A LEADING-EDGE TECHNOLOGY TO DETECT DNA FROM MINUTE BIOLOGICAL SAMPLES IN REAL TIME, ERROR-FREE, AND AT LOW COST WITH EASE OF USE. IT WILL REVOLUTIONIZE THE WAY THAT CUSTOMS, LAW ENFORCEMENT, FIELD MONITORING, CITIZEN SCIENCE, AND LOCALLY BASED CONSERVATION, ARE CONDUCTED AROUND THE WORLD.

As a documentary presenter, I am humbled and always surprised to have such an impact. I am continually heartened by the messages that I've received from people inspired by my work with Discovery Channel, Animal Planet and Nat Geo Wild, to pursue their own careers in biodiversity conservation. I have encouraged snow leopard community-based conservation through local leadership in Nepal and have helped to inform Antarctic conservation practices and whale management, including the Australian government, the International Whaling Commission, and others.

These have catapulted me to a bigger dream: to democratize conservation through the development of a more inclusive technology for species detection. I now have an incredibly skilled team of geneticists, conservationists, communicators, business partners and institutions working together. Our innovative species detection technology will empower citizens to monitor, study and protect endangered species in a way that is completely unique. My hope is to involve more people globally in conservation initiatives.

Our species detection technology is simple, and inexpensive enough for lay people, including children, to use, and this contributes to conservation in a meaningful way. In Nepal, I've seen just how powerful youth education can be to build passion and intrigue in the animals that inhabit the local ecosystem. This, in turn, inspires the adults. Kids are always interested in technology. It sparks their imaginations and makes them feel that they are just as important as scientists, in doing wonderful things for conservation, locally and globally! The ultimate goal is to generate a greater sense of ownership and the motivation to protect biodiversity.

ABOVE: NATALIE T. SCHMITT HOLDING YELLOW-EYED PENGUIN.
PHOTO: SARAH MICHAEL
FACING PAGE: SCHMITT IN SMALL BOAT TRAVELING PAST LARGE ICEBERG.
PHOTO: KYLIE OWEN

SCIENCE

WILSON WAI-YIN CHEUNG

MI'19 — GLACIOLOGIST

Nominated by **PAUL NIEL MI'16**

WILSON WAI-YIN CHEUNG'S LIFELONG AMBITION IS TO CONTRIBUTE TO OUR KNOWLEDGE OF THE POLAR REGIONS. DURING HIS TEN-YEAR CAREER, HE HAS CONDUCTED MANY SCIENTIFIC EXPEDITIONS UNDER TRYING CONDITIONS AND HAS ACCUMULATED OVER 1,000 DAYS OF FIELD EXPERIENCE IN POLAR REGIONS. AS A DOCTORAL STUDENT OF GLACIOLOGY, HIS RESEARCH FOCUSES ON ACTIVELY MONITORING GLACIERS' SPATIAL DISTRIBUTION AND TEMPORAL DYNAMICS IN THE HIGH ARCTIC. HE HAS AIMED TO BE THE FIRST ASIAN TO CLIMB 82,4000-METER PEAKS IN THE ALPS WITH THE GOAL OF DRAWING THE PUBLIC'S ATTENTION TO RAPIDLY MELTING ALPS GLACIERS.

Having engaged in the frontiers of polar exploration for over a decade, I have witnessed the accelerating rate of large-scale glacier disappearances in the high latitudes and the corresponding environmental consequences. However, most Canadian Arctic glaciers and ice caps remain insufficiently investigated. In response to these significant research gaps, my current doctorate research in glaciology is to estimate the spatial distribution of ice thickness and volume on Bylot or Baffin Island through intensive field measurements. The outcome will contribute new geodetic mass balance estimation for the World Glacier Monitoring Service (WGMS) to better understand glacier fluctuations on a global scale and predict northern landscape changes in the Canadian Arctic.

Educating and inspiring future generations toward the importance of geoscientific research, both on and beyond our planet, has a pivotal role in responding to our rapidly changing environment. Through my established non-profit organization Asia Youth Alpine Mentors Program & Ecobus, I aim to enhance public awareness of polar and alpine regions and to promote lifestyles with minimal impacts on the environment. Our programs have worked with over 50 young individuals in Hong Kong to enhance their understanding and awareness of the climatic changes affecting our planet today. I have also led many youth science education programs in the polar regions in order to cultivate the next generation for further scientific exploration.

I believe that reuniting the deep linkage between us and nature is crucial for responding to fast-changing polar regions.

FACING PAGE: CHEUNG ON CRACKED ARCTIC ICE

CONSERVATION

CALLIE BROADDUS

CONSERVATIONIST

Nominated by JOE GRABOWSKI FI'18

CALLIE BROADDUS IS THE EXECUTIVE DIRECTOR OF RESERVA: THE YOUTH LAND TRUST, AN ORGANIZATION SHE ESTABLISHED IN 2019 TO BRIDGE THE GAP BETWEEN YOUTH ACTIVISM AND TRIED-AND-TRUE METHODS OF BIODIVERSITY CONSERVATION. THE FLAGSHIP INITIATIVE WAS TO CREATE THE WORLD'S FIRST ENTIRELY YOUTH-FUNDED NATURE RESERVE IN ECUADOR'S CHOCÓ CLOUD FOREST. HER TEAM OF YOUTH IS WORKING TO PROTECT AND SUPPORT LOCAL PARTNERS, DOCUMENTING DOZENS OF CRITICALLY ENDANGERED AND NEW-TO-SCIENCE SPECIES OF PLANTS AND ANIMALS. CALLIE SPENT SEVEN YEARS DESIGNING BOOKS AT NATIONAL GEOGRAPHIC KIDS.

There is a growing understanding that young people need to engage with those in power in order to influence decision-making for the Earth they will inherit. But I want to demonstrate that youth, who make up approximately half of the global population, also have an untapped ability to take direct action themselves. Through Reserva's Youth Council, I have trained youth to creatively channel their interests and skills into successful fundraising initiatives, demonstrating that what some young people may lack in their savings account can be replaced through passion, creativity, and grassroots organizing.

The Dracula Youth Reserve in Ecuador's Chocó cloud forest is home to critically endangered species including the Brown-headed Spider Monkey, the Black-and-chestnut Eagle, and many more, as well as iconic species such as the Spectacled Bear and Puma.

Through our storytelling programs, Reserva is amplifying the need for conservation on the global stage. We aim to create a network of similar youth-funded reserves around the world that will provide enduring protection for Earth's most fragile and biodiverse ecosystems.

By incorporating established organizations such as our partner, Rainforest Trust, into our strategy, we are able to offer them a form of youth engagement that changes their entire perception of youth. Our Ecuadorian partner, Fundación EcoMinga, has dedicated time to our creative youth storytelling initiative called the One Million Letters campaign to establish new and valuable working relationships with local governments and neighboring organizations.

I hope that this platform will help more diverse, passionate youth to grow into capable and experienced conservation leaders. Inviting youth to participate in these new and creative ways, I hope to make philanthropy more inviting to a large swath of the population not previously engaged in direct conservation action.

ABOVE: CALLIE BROADDUS PHOTO: WILL THOMPSON
FACING PAGE: RESERVA EXPEDITIONTEAM PHOTO: CALLIE BROADDUS; DRACULA YOUTH RESERVE EXPEDTION 2020 PHOTO: NATALIA ESPINOZA

ANTHONY J. GIORDANO PHD

CONSERVATIONIST

Nominated by **JIM WILLIAMS FN'93 AND ANN PASSER MR'13**

ANTHONY J. GIORDANO IS A SCIENTIST, CONSERVATION PRACTITIONER AND SOCIAL ENTREPRENEUR WHO DEVELOPS INNOVATIVE APPROACHES THAT PROMOTE HUMAN-WILDLIFE COEXISTENCE. HE HAS AN ACADEMIC BACKGROUND IN EVOLUTION, ENVIRONMENTAL STUDIES AND CONSERVATION BIOLOGY, INCLUDING A PHD IN WILDLIFE ECOLOGY AND MANAGEMENT. OVER HIS 30-YEAR CAREER, ANTHONY HAS WORKED IN 34 COUNTRIES AND ON FIVE CONTINENTS, AND HAS MANAGED DOZENS OF INTERNATIONAL CONSERVATION PROJECTS. AS DIRECTOR OF S.P.E.C.I.E.S., HE BELIEVES THAT WILD CARNIVORE POPULATIONS ARE CRITICAL TO MAINTAINING THE ECOLOGICAL INTEGRITY, RESILIENCE AND CONNECTIVITY OF LARGE LANDSCAPES.

I am designing integrated socioeconomic and ecological roadmaps to coexistence between people and carnivores across the world in order to create lasting benefits for rural communities. Over several decades, I have learned to move beyond simply doing conservation science and ecology. Instead, I integrate science into innovative and practical solutions. I advise on the development of policy, connect environmental improvements to impactful global development practices, develop, sustainable business ideas, and apply them to responsible consumerism. I use my background in population dynamics, community ecology and social science to clarify regional conservation problems, and then work to develop and implement novel solutions to address them

The science that I pursue serves to describe the efficacy of our programs as evaluation tools and metrics. By constantly moving outside of my comfort zone, I have no comfort zone. In most ways, I am always exploring new corners of the world, and new habitats, cultures and communities. This includes the exploration of new disciplines, technological solutions to conservation problems, approaches to sustainability, and ways to facilitate human-wildlife coexistence. I am increasingly exploring new ways of thinking about our global conservation challenges.

By focusing on the health of predator populations and their ecological communities in rainforests, peat swamps, mangroves, wetlands, savannas and other critical habitats, we can empower and reward global communities for coexisting with other species, and transcend the blunt tools of carbon offsets and credits. I believe this has great potential to combat climate change, and build wealth in communities.

FACING PAGE: WITH SOME OF PAIWAN INDIGENOUS COMMUNITY IN TAIWAN. CLOUDED LEOPARDS AT THE KHAO KHEOW ZOO.

ONKURI MAJUMDAR

CONSERVATIONIST

Nominated by **DAMIEN LELOUP FI'10**

A WILDLIFE CONSERVATIONIST FOCUSING ON ENDING WILDLIFE TRAFFICKING BY TRAINING AND SUPPORTING GOVERNMENTS AND THE PRIVATE SECTOR, ONKURI HAS PROVIDED INVESTIGATIVE SUPPORT TO LAW ENFORCEMENT THROUGH ANALYSIS AND INTELLIGENCE GATHERING ON TIGER, PANGOLIN, IVORY, AND EXOTIC PET TRAFFICKING SYNDICATES. SHE IS CURRENTLY WORKING ON A SMARTPHONE APPLICATION WITH INFORMATION ON 600+ TRAFFICKED SPECIES FOR USE BY BORDER AND TRANSPORT OFFICIALS AND THE GENERAL PUBLIC. ONKURI STRONGLY BELIEVES THAT WILDLIFE AND NATURE HAVE A RIGHT TO THRIVE, AND SHOULD NOT HAVE TO 'PAY' FOR THEIR CONTINUED EXISTENCE BY BEING USEFUL TO HUMANS.

My work has focused on wildlife crime, and my stakeholders have been government officers and corporations, since private individuals typically do not have the power to act against criminals. An important facet is to ensure that people mandated with stopping wildlife trafficking are informed and trained. My experience with hands-on training for forest and police officers, and airline and bank employees, opened my eyes to how inadequately many of them are trained to even recognize wildlife trafficking, let alone stop it. Over a career spanning nearly 20 years, I have trained over 900 officials in Asia and Africa.

I love the experience of being in the field, embedded with an agency in a national park or at a training academy, training on investigation techniques and learning unique challenges. Often I've received feedback that the training has changed careers by learning effective techniques. We have seen agencies take down international syndicates and seize their assets, repatriate live animals, and upgrade legislations to strengthen nature protection laws.

Ultimately, I would like to involve more people in wildlife conservation, and therefore we have been expanding a smartphone application that allows anyone to identify and report wildlife trafficking. The more people who feel invested in nature protection, the safer our world gets.

My overall hope is that through my work and resulting media stories, there may ultimately be a sea change in how people see the natural world. Currently, the attitude (even among many conservationists) is that nature must justify its right to existence by being useful to humans via environmental services or commercial exploitation. I hope for a future when the right of wildlife to thrive simply because they exist is recognized universally.

ABOVE: ONKURI MAJUMDAR IN ISTANBUL PRESENTATION.
FACING PAGE: ONKURI LECTURING TO RANGERS, KAZIANGA NATIONAL PARK, GOLAGAT, INDIA; SHOWING EVIDENCE, ALAUNGDAW KATHAPA PAGODA, MYANMAR. PHOTOS: FREELAND.

CONSERVATION

MARK OFUA

VETERINARY SURGEON/CONSERVATIONIST

Nominated by JOE GRABOWSKI FI'18

MARK OFUA IS A LAGOS-BASED VETERINARIAN, CONSERVATIONIST, AND EDUCATOR WHO LEADS RESCUE, REHABILITATION, AND RELEASE EFFORTS FOR NIGERIA'S MOST ENDANGERED SPECIES, WITH AN EMPHASIS ON ANIMALS TARGETED FOR BUSHMEAT MARKETS AND THE ILLICIT WILDLIFE TRADE. OFUA FOUNDED THE SAINTMARKS ANIMAL RESCUE FOUNDATION AND THE ECO-KIDS CONSERVATION CLUB. IN ADDITION, HE ESTABLISHED AND RUNS NIGERIA'S FIRST ANIMAL SHELTER AND A FIRST-OF-ITS-KIND FACILITY DEDICATED TO ONE OF THE MOST ENDANGERED AND MOST TRAFFICKED MAMMALS: PANGOLINS. HE IS PART OF THE INTERNATIONAL UNION FOR THE CONSERVATION OF NATURE PANGOLIN AND SMALL CARNIVORE SPECIALIST GROUPS AND CONSULTS FOR THE WILD AFRICA FUND.

Although I started saving wildlife from an early age and later through my veterinary practice, I didn't think of my work as making much of a societal difference until 2018, when Katie Schuller's National Geographic short film featured it. Now people around the globe know about the extraordinary pressures that have been put on wildlife in Nigeria, pressures wrought largely by the bushmeat trade. But this is beginning to change. My work in wildlife conservation—in the areas of advocacy and education—is producing sustainable results at the grassroots, national, and international levels.

Through my efforts, local hunters and bushmeat sellers are becoming keenly aware of the health risks posed by zoonoses—infectious diseases transmitted from wildlife to humans—and that uncontrolled harvesting is driving extinction. In response to sustained civil pressure and advocacy and education campaigns, the government is stepping up its enforcement of laws banning bushmeat, removing endangered species from traditional cuisine, and encouraging hunters and sellers to save our disappearing wildlife. And this is a game changer, given that Nigeria has fewer than 50 lions, some 300 gorillas, and a dwindling population of critically endangered pangolins. Sadly, these efforts have come too late for cheetahs, rhinos, and giraffes.

Hunting communities are increasingly involved in conservation, encouraged to engage in alternative income-generating activities while encouraging their own children to join my Eco-Kids Conservation Club. These young people are being raised as heroes for conservation, breaking the vicious cycle of an inherited trade and wildlife consumption, passed down through generations. Through awareness creation and a variety of media partnerships, people are also learning that snakes and nocturnal wildlife needn't be wantonly exterminated. I now get calls to rehome animals that have been deemed a threat and help people overcome their fears. People are joining conservation efforts, alerting us to rescue needs, sharing awareness. As conservation enthusiasts see change, they are accepting that a cultural shift is possible.

CLOCKWISE FROM TOP LEFT: MARK OFUA WITH A WILDLIFE CAMPAIGN BANNER, TREATING A PANGOLIN AT HIS CLINIC, NURSING AN ORPHAN CHIMPANZEE BACK TO HEALTHM AND ENGAGING WITH LOCAL COMMUNITIES.

JOSHUA POWELL, CF

CONSERVATION BIOLOGIST

Nominated by **MILBRY POLK MED'95**

A CONSERVATION BIOLOGIST AND PH.D. CANDIDATE AT THE ZOOLIGICAL SOCIETY OF LONDON AND UNIVERSITY COLLEGE LONDON, JOSH IS THE FOUNDER OF RANGERS WITHOUT BORDERS AND A FOUNDING MEMBER OF THE WORLD WILDLIFE FUND #WWFVOICES CAMPAIGN. HE HAS FOCUSED ON CONSERVATION OF THE AMUR TIGER *(PANTHERA TIGRIS TIGRIS)* IN NE ASIA. HE HAS BEEN A CHURCHILL FELLOW ON ISLAND CONSERVATION POLICY IN NEW ZEALAND, AUSTRALIA, AND FIJI, HAS SERVED AS A POLICY ADVISOR FOR THE UNITED KINGDOM'S DEPARTMENT FOR ENVIRONMENT, FOOD & RURAL AFFAIRS, AND IS AN ADVISOR FOR THE QUEEN'S COMMONWEALTH TRUST ON ENVIRONMENT AND SOCIETY.

My work focuses on the intersection of science and conservation and on communicating that to policy makers and the wider public. Our research with Rangers Without Borders our research aims to document the training needs and capabilities of park rangers and communities about threatened wildlife. Some of my work focuses on providing an evidence base to policy makers. For example, the UK Overseas Territories host 94% of all known British endemic species. We contributed to the government's review on protecting biodiversity.

As a presenter and founding member of theWorld Wildkife Fund #WWFVoices campaign on global biodiversity, one example that impacted public thinking about the environment was Frozen Islands, Arctic Seas. This involved hosting a live Q&A on polar science. 14,000 people watched plastic pollution documented in the High Arctic and films explaining the conservation status of polar bears and the double threats of hybridization and climate change.

This is exploration in a traditional sense. We know remarkably little about the natural world and endangered species. My work helps to learn about species distribution and to evaluate potential conservation interventions.. For example, I am currently exploring gaps in knowledge about the endangered Amur tiger *(Panthera tigris tigris)* and the critically endangered Amur leopard *(Panthera pardus orientalis)*. We need more information about wildlife populations, and I am intrigued by the use of modern technology to better track their whereabouts.

My hope for the future is that, as a species, we can protect much of the Earth's amazing biodiversity and avert the threat of a sixth mass extinction. This will involve greater understanding as we learn how to better live with other species of the natural world.

ABOVE: JOSHUA POWELL
FACING PAGE: JOSHUA POWELL IN KYRGYZSTAN PHOTOS: STEPHANIE FOOTE

JAVIER ROBAYO

CONSERVATIONIST

Nominated by **CALLIE BROADDUS MN'21**

JAVIER ROBAYO IS EXECUTIVE DIRECTOR OF FUNDACIÓN ECOMINGA, A NON-PROFIT ORGANIZATION THAT MAINTAINS OVER 27,000 ACRES OF PROTECTED AREAS IN ECUADOR'S CHOCÓ AND TROPICAL ANDES. AS A BIOLOGIST AND EDUCATOR, HE HAS LED MORE THAN 200 RESEARCH AND TEACHING EXPEDITIONS IN ECUADOR. HIS EXTENSIVE, COLLABORATIVE FIELDWORK HAS LED TO THE DISCOVERY OF MORE THAN TEN SPECIES OF ORCHIDS, A NEW GENUS CONTAINING TWO SPECIES OF RODENTS, A NEW GENUS OF FROG AND FIVE OTHER SPECIES OF AMPHIBIANS. JAVIER'S WORK FOCUSES ON HIGHLIGHTING BIODIVERSITY TO PREVENT THE DEFORESTATION OF THESE IRREPLACEABLE FORESTS, WHICH ARE SEVERELY THREATENED BY AGRICULTURAL DEVELOPMENT AND MINING EXPLORATION.

Our mountains are full of endemic species and expressions of biodiversity in shapes and sizes never imagined, and exploration is endless. The petals, scales, feathers and sounds that fill our forests teach us about degrading habitats and their absence gives meaning to silence. My work involves creating private protected areas that provide habitat to Ecuador's most threatened species, safeguarding areas of high biodiversity, and protecting clean water sources for the benefit of both wildlife and people. My commitment is to motivate local and indigenous people to join in scientific exploration and synchronize local mythology with natural history as we work together for the preservation of Ecuador's biodiversity.

My work in cloud forest conservation requires a constant exploration mindset. By leading fieldwork expeditions, I explore lands that are not yet studied, often uncovering completely new species. I also explore ways to engage local people in the value of scientific studies and how to employ them in conservation work on their ancestral lands. Our work can be stronger when we invite help from youth scientists and storytellers.

Historically, conservation has been unsuccessful in areas where protectors of the forest were blind the needs of the community. As much as we explore the land in a traditional sense, we must explore our community. We have the responsibility to take care of the forest while also bringing together funders, experts, young Ecuadorian researchers, lawyers, communicators, community members, and scientists in the country's most remote places. By expanding the network of people who explore the forests together, we expand the definition of exploration itself.

FACING PAGE: ON THE TRAIL DEEP IN THE ECUADORIAN FOREST.
PHOTOS: CALLIE BROADDUS

LHENDUP THARCHEN

FORESTER/CONSERVATION BIOLOGIST

Nominated by **MATTHEW DESANTIS MI'16**

LHENDUP THARCHEN IS A WILDLIFE BIOLOGIST, FOREST MANAGER, AND THE FIRST OXBRIDGE-TRAINED CONSERVATION LEADER IN BHUTAN. HIS EXPLORATION INTERESTS COINCIDE WITH HIS EXTENSIVE EXPERIENCE WITH BIG CATS, PROTECTED AREA MANAGEMENT, SPECIES CONSERVATION, HUMAN–WILDLIFE CONFLICT MANAGEMENT, NATURAL RESOURCE MANAGEMENT, COMMUNITY DEVELOPMENT, AND CLIMATE CHANGE ISSUES. THARCHEN HAS WORKED WITH TIGERS IN THE LOWLANDS OF ROYAL MANAS NATIONAL PARK AND SNOW LEOPARDS IN THE HIGHLANDS OF JIGME DORJI NATIONAL PARK. HE IS THE FIRST PERSON TO TRACK BOTH SNOW LEOPARDS AND COMMON LEOPARDS LOCALLY USING GPS SATELLITE TELEMETRY AND DISTINCTIVELY MANAGED BOTH THE NATIONAL PARK AND FOREST MANAGEMENT UNITS OUTSIDE PROTECTED AREAS.

As I travel widely in the Bhutan forest, I have come across many communities sharing the same space with wild animals. While it is heartening to learn about the presence of tigers, leopards, elephants, and wild pigs, I was disturbed learning about the realities of living in proximity to the forestland, livelihoods jeopardized by the impact of wildlife damage on cattle and crops. Feeling the need to bridge the disconnects of conservation and livelihood, I have worked diligently toward developing informed policies, contributing to the development of a national human–wildlife conflict management strategy and playing a pivotal role in developing conservation action plans for the tigers and snow leopards.

I believe that snow leopards are the guardians of the mountains. Recognizing communities as a part of the mountain ecosystem, I cofounded the annual Jomolhari Mountain Festival, known as the "snow leopard festival," to simply celebrate life in the mountains. This initiative attracted international visitors, improving the vitality of the highlanders through ecotourism. The community-based snow leopard conservation group has become the custodian of the mountains and their ecosystem, the community of the festival itself, motivating people in other parts of the country to replicate similar nature-based festivals. Such events have ignited the moral responsibility of humans for biodiversity conservation and environmental protection, encouraging people to take leadership to respect and protect nature and wildlife in their communities.

Coming from a farming family, it has been extremely rewarding for me to be able to contribute toward conservation, and, at the same time, to be able to make a difference in the lives of people, which has given me a greater sense of meaning and purpose in life and a desire to do more.

FROM TOP: LHENDUP THARCHEN TRACKS SNOW LEOPARDS USING A RECEIVER. THE BHUTANESE BIOLOGIST SCANS THE MOUNTAINS WHILE ON PATROL.

SONAM TOBGAY

FI'19 — CONSERVATIONIST/ECOLOGIST

Nominated by MATTHEW DESANTIS MI'16

SONAM TOBGAY IS THE CHIEF FORESTRY OFFICER AT THE FOREST RESOURCES MANAGEMENT DIVISION UNDER THE MINISTRY OF AGRICULTURE & FORESTS FOR THE ROYAL GOVERNMENT OF BHUTAN. HE IS LEADING THE SECOND NATIONWIDE NATIONAL FOREST INVENTORY OF BHUTAN TO UNDERSTAND THE CONDITION OF BHUTAN'S FORESTS, INCLUDING GROWING STOCK, BIODIVERSITY, FOREST CARBON STOCK AND CHANGES IN FOREST ECOSYSTEMS, AMONG OTHERS. A PRACTITIONER AND AN ECOLOGIST IN THE FIELD OF ENVIRONMENTAL CONSERVATION FOR THE LAST 18 YEARS, HE HAS BEEN INSTRUMENTAL IN DESIGNING STRATEGIC PLANS IN BHUTAN. WITH A VAST EXPERIENCE IN PROTECTED AREA MANAGEMENT, NATURE CONSERVATION AND LEADERSHIP, HE HAS CONTRIBUTED IMMENSELY TO THE CONSERVATION AND SUSTAINABLE FOREST MANAGEMENT PROGRAMS AT BOTH POLICY AND IMPLEMENTATION LEVELS.

For deeply reflective and inward looking Bhutanese people, every object of nature has life and is sacred. We believe that our mountains and hills, rivers and lakes, woods and forests, trees and rocks, and caves and passes, are the abode of gods and goddesses, spirits and sentinels, guardian deities and zealous custodians. When the pervasive impulse is to conquer and control, measure and master, nothing of the sacred remains. The more we have, the poorer we seem to be! It is precisely on account of these emerging threats that we need to reclaim our environment, and reclaim them urgently.

Beyond all things, I have started to understand and realize that we cannot afford to stand complacent and hopeless. I have accepted that I must give the best of myself so that nature can be safeguarded beyond all the challenges. In the end we will be judged by what we have done and left behind, so we can not just stand by as nature gets ravished and vanishes. My wish, and my commitment, is that nature stays forever safeguarded in Bhutan and everywhere around the world, not just for the sake of environmental conservation, but for the posterity and prosperity of humankind and for peace on Earth.

There is a call that speaks to the primeval impulse of all humans. This call links the dead and the living with the unborn, a lingering echo of the elemental that brings the real to the mythical. It is this call that I cannot resist. The call urges me to make a meaningful contribution to Bhutan's pristine and intact environment, which is the reason why we are here today. For a landlocked, mountainous country like Bhutan, our intact environment is our lifeline.

In the true spirit of The Explorers Club vision, Bhutan can be one of the first countries to lead us into some very interesting new frontiers in tackling the global climate change crisis. What I do gives me a higher purpose and gives meaning to my life.

ABOVE: SONAM TOBGAY, NATIONAL DAY IN HAA, BHUTAN. PHOTO: TANDIN
FACING PAGE: SOIL CARBON PLOT SAMPLING AT SANGBAYKHA, HAA, BHUTAN. PHOTO: S TOBGAY

CONSERVATION

SATEESH VENKATESH

CONSERVATION BIOLOGIST

Nominated by **ANN PASSER MR'13**

SATEESH IS A CONSERVATION BIOLOGIST WORKING TO IMPROVE KNOWLEDGE OF ANIMAL BEHAVIOR IN ORDER TO MITIGATE HUMAN-WILDLIFE CONFLICT AROUND THE WORLD. THIS WORK HAS INCLUDED ELEPHANTS IN A SMALL VILLAGE OF NORTHERN THAILAND, SAVANNA ECOLOGY IN SOUTH AFRICA, AND JAGUARS IN COSTA RICA. CURRENTLY, HIS RESEARCH FOCUSES ON ELEPHANT PERSONALITY DIFFERENCES TO UNDERSTAND BETTER HOW DIFFERENT ELEPHANT PERSONALITIES MAY INFLUENCE THEIR MOVEMENT PATTERNS AND INTERACTIONS WITH THEIR HABITAT.

While I have worked on research projects with volunteers, I found that it is possible to involve and engage anyone in conservation. Doing so with local people is essential for any conservation efforts. What I would like to promote in my future work is inclusion and support for more diverse viewpoints. I hope this will allow more opportunities for people at the local level to control and influence conservation efforts in their areas.

For decades the separate fields of conservation and animal behavior have both been developing solutions to complex wildlife problems. Though these fields have often studied the same species in the past, they view issues from different but parallel perspectives that don't often overlap. My current work combines both conservation and animal behavior techniques, aiming to use information from both fields to solve problems. My current research tests variations in personality within a group of 31 semi-wild Myanmar elephants. We do this by presenting them with a novel puzzle box, designed to withstand an elephant. Very few studies use puzzle boxes to examine elephant personality. This particular group of elephants has allowed us to measure their movements in a wild habitat. The ultimate goal of the study is to link personality traits to potential crop-raiding behavior, investigating some of the possible drivers of human-elephant conflict. This study is one of the first when researchers have been able to combine robust animal behavior techniques in this way with conservation practices to develop holistic solutions that could benefit elephants worldwide.

ABOVE: SATEESH VENKATESH AT THE EXPLORERS CLUB PHOTO: FELIX KUNZE
FACING PAGE: SNAKE IN GUYANA PHOTO: CAMILLE VENIER;
ELEPHANT TEAM, THAILAND PHOTO: PATRICIA DEBOW

HUMANITIES

JOEY ANGNATOK

SOCIAL ENTREPRENEUR

Nominated by **JASON EDMUNDS MI'15**

AN INUK FROM NAIN, NUNATSIAVUT, JOEY IS A UNIQUE BLEND OF SOCIAL ENTREPRENEUR, EXPERT KNOWLEDGE HOLDER, RESEARCHER, ROLE MODEL, HUSBAND AND FATHER. JOEY, A COMMERCIAL FISHERMAN, IS TRUSTED BY COMMUNITY MEMBERS AND AN ALL-INUIT CREW ONBOARD HIS 65-FOOT *MV WHAT'S HAPPENING*. THIS VESSEL IS USED FOR COMMERCIAL FISHING AND FOR MARINE RESEARCH FROM GOOSE BAY IN THE EASTERN SUBARCTIC TO RESOLUTE, NUNAVUT. HE HAS BECOME A RELIABLE RESOURCE FOR COMMUNITY MEMBERS, GOVERNMENTS, AND ACADEMIA TO BETTER UNDERSTAND THE UNIQUE ENVIRONMENT IN WHICH HE LIVES AND WORKS.

As an Inuit hunter, trapper and fisherman, I have had the opportunity to explore the Coast of Labrador by snowmobile and boat during all seasons. Over several decades, I have witnessed the ever-changing climate first hand; these changes include shrinking icebergs, changes in sea ice formation and thickness, warming weather temperatures in all seasons, a decrease of cold water species, shrubs growing in the North, and the decline of the George River Caribou herd. I have witnessed the introduction of new species such as killer whales and cormorants, and parasites present in different species. I have also witnessed the change of animals' abilities to adapt to survive such as polar bears fishing in rivers like grizzlies and seals feeding in freshwater lakes.

This gathered knowledge of land and sea allows me to contribute to our own local knowledge and to the work of Western researchers and others on adaptation to this changing world.

During a very impactful two-week trip for fieldwork, one goal was to determine if Greenland sharks were present in the Northwest Passage. Our findings were astonishing. The answer was an overwhelming yes.

Any fieldwork completed in Resolute Bay requires there to be an Inuk present with researchers. On one accasion because of being Inuit from another region, a special meeting was held to determine whether or not it was still required. While steaming into the harbour of Igloolik, the beach was full of people. We met with the mayor who told us that the news of our fieldwork was spreading from town to town. The message from the elders was that we had inspired members of these communities to see that there are no limitations to what Inuit people can do.

ABOVE: JOEY ANGNATOK AND HIS *MV WHAT'S HAPPENING*
FACING PAGE: BANDING SUBDUDED CARIBOU; JOEY AND TANKER *MV ARCTIC*

BHAVITA BHATIA

ECO-FEMINIST AND STORYTELLER

Nominated by **JAMES FRIEDMAN MN'19**

BHAVITA BHATIA IS A STORYTELLER, ADVENTURER, ECO-FEMINIST, AND A BUDDING HORSE CONSERVATIONIST WITH MORE THAN A DECADE OF EXPERIENCE AROUND THE PASTORAL COMMUNITIES OF THE TRANS-HIMALAYAN REGION IN INDIA, BHUTAN, AND NEPAL. BHATIA'S DOCUMENTARY WORK REFLECTS HER LOVE FOR THE WILDERNESS, WHICH LED HER TO CHASE HIMALAYAN NOMADS ACROSS THE MOST REMOTE AREAS OF THE MOUNTAINS. DURING THE PAST FOUR YEARS, SHE HAS SINGLE-HANDEDLY BUILT A GRASSROOTS CONSERVATION PROJECT TO STUDY AND SUPPORT THE LIVES OF HORSE HERDERS OF NEPAL. HER SPECIAL FOCUS IS ON THE FAST-DISAPPEARING PONIES OF THE HIMALAYA, FROM MOUNT KAILASH TO THE VALLEYS AROUND MOUNT EVEREST.

The High Himalaya presents many challenges for explorers. Many regions in upper Nepal are highly inaccessible and restricted. The areas where I work have no roads: one either walks for days or rides a horse. In the media, the people of this region are often portrayed as an exotic "dwindling breed of pastoral nomads from another time," with little context provided on the multiple challenges these mountain pastoralists currently face. Moreover, conservation efforts are overwhelmingly focused on the region's "charismatic" animals, such as snow leopards. A recent multimillion, five-year snow leopard conservation plan funded research, conferences, and reviews, yet provided little for herders whose lives are impacted by the cats. In a small hamlet, Charkha in Dolpo, for instance, nearly 100 of their horses were killed by snow leopards in a single year. Understandably, then, many of the leopard killings are in retaliation for livestock losses. Unfortunately, the dominant narrative in the snow leopard/human conflict story continued to ignore the intense suffering and loss to livelihood for goat, yak, and horse herders. Without addressing these issues, long-term solutions will remain elusive. If we are to find sustainable solutions to wildlife conservation in this region, we must listen to, and work with, its Indigenous communities. This includes addressing the complex problems of herder communities—domestic violence, alcoholism, gender inequality, and access to education and economic opportunity—which play into preserving the larger ecosystem.

For my project "Cowboys of the Lost Horizon," I am documenting the lives of the few horsemen remaining in their homelands, weaving together conservation, science, biology, and traditional equestrian economies. In the process, I hope to challenge their notions of race, gender, and age positively when it comes to what a young woman of color can accomplish in these areas, and to inspire and pave the way for more women, particularly Indigenous women, to follow suit.

FROM TOP: BHAVITA BHATIA AT PENN LA PASS IN THE DOLPO REGION OF NEPAL. BHATIA WITH LONGTIME HORSE TRADERS, KARMA AND HIS FATHER, AT CHO LA PASS.

MANOJ GAUTAM

HUMANITARIAN/ INDIGENOUS-RIGHTS CHAMPION

Nominated by **NATALIE SCHMITT FI'22**

MANOJ GAUTAM IS KNOWN FOR HIS SUSTAINABLE COMMUNITY-BASED APPROACHES TO CONSERVATION, FEARLESS ADVOCACY OF ANIMAL PROTECTION, COMPELLING STORYTELLING, AND RELENTLESS PURSUIT OF HIS HUMANITARIAN CONVICTIONS. A NEPAL-BORN OXFORD GRADUATE, GAUTAM GREW UP IN A TIGHT-KNIT COMMUNITY IN TUNE WITH THE NATURAL WORLD AND DEVELOPED AN INNATE UNDERSTANDING OF THE FUNDAMENTAL ASPECTS OF CONSERVATION: COMMUNITY PSYCHOLOGY, LIVELIHOOD, LOCAL INDIGENOUS KNOWLEDGE, AND ECOLOGICAL SERVICES. NICKNAMED "NOMAD," HE DOCUMENTS POWERFUL STORIES, RELATING THE IMPACTS OF CHANGING ENVIRONMENTAL AND RESOURCE-GOVERNANCE SCENARIOS, AND DESIGNS INTERVENTIONS EMPOWERING COMMUNITIES LIVING CLOSEST TO NEPAL'S WILDLIFE, SHARING THEM WORLDWIDE AT TALKS AND KEYNOTE PRESENTATIONS.

A thoroughly nonconventional conservationist, I have exploited political willpower and legal tools for policy changes and new legislative provisions and instigated a trend of youth-led conservation organizations. My work takes me to the most troubled species and/or communities where I devise the simplest approach to resolve crises, proving that locals, empowered and with simple but crafty measures, are more than sufficient to create solutions. The systematized and routine conservation machines that parachute in as imposing, alien experts become irrelevant. Much of modern conservation practice distances itself from real sustainability and the organic way of life in Indigenous and local communities. Colonial venturing and modernization's rampaging of Indigenous strongholds were a big blow to conservation and indigeneity. My inclination is to apply cultural anthropology in conservation.

I work with mainly six ethnic communities across Nepal to help revive withered, dismantled institutions, traditional ways, knowledge, and belief systems that not only still make sense but are superior to available options, to create robust communities where conservation does not rob Indigenous rights, isn't so erratic, and doesn't completely depend on foreign aid. It is crucial that these communities understand where they were (historically) and where they stand now (in a modern context) in terms of practice and philosophy of conservation, resilience, and sustainability. Much of that ancient wisdom needs to be documented, even brought back to life from faraway libraries, and matched with newer means to create a long-lasting and self-governing mechanism. To see these communities gain agency over conservation decision-making, with the realization of how their ancestors acted as stewards and how they could continue to do so, is a legacy that I would like to leave behind. My storytelling has an impact on thousands of people and groups across the globe. I believe I am a force still underutilized, and that gives me an immense hope for the future.

MANOJ GAUTAM AND A COLLEAGUE ON PATROL IN THE TRANS-HIMALAYA. PHOTOGRAPH BY PEMU LAMA.

CASUARINA MCKINNEY-LAMBERT

ADVOCATE

Nominated by **FAANYA ROSE ME'94**

CASUARINA MCKINNEY-LAMBERT IS THE EXECUTIVE DIRECTOR OF THE BAHAMAS REEF ENVIRONMENT EDUCATIONAL FOUNDATION (BREEF), A NON-GOVERNMENTAL ORGANIZATION DEDICATED TO PROTECTING THE BAHAMIAN MARINE ENVIRONMENT THROUGH HANDS-ON EDUCATION, OUTREACH, RESEARCH, AND POLICY. SHE WAS A FOUNDING BOARD MEMBER OF ONE ELEUTHERA FOUNDATION AND BAHAMAS PROTECTED AREAS FUND. SHE SERVES ON THE FISHERIES ADVISORY COUNCIL, THE NATIONAL CLIMATE CHANGE, BIODIVERSITY, NATIONAL MARITIME POLICY COMMITTEES AND ON THE SUSTAINABLE DEVELOPMENT GOALS TECHNICAL COMMITTEE. SHE IS A MEMBER OF THE GLOBAL ENVIRONMENT FACILITY SMALL GRANTS PROGRAMME AND THE UNITED WORLD COLLEGE NATIONAL COMMITTEE IN THE BAHAMAS.

I was born in an archipelagic nation of over two thousand low-lying islands surrounded by ocean. We are particularly vulnerable to sea-level rise and the impact of increasingly strong hurricanes. The Bahamas has some of the last remaining stocks of important species, such as the critically endangered Nassau grouper and the iconic queen conch. My work is to better understand the ocean around us and to use this information to guide how we can live more sustainably, socially, economically and environmentally.

I have spent thousands of hours underwater while exploring coral reefs, mangrove creeks, and blue holes, and have descended into underwater canyons over 780 meters deep in a submarine. I have the privilege of sharing the wonders of the Bahamian ocean with many people from different walks of life, including students, teachers, fishermen, and enforcement officers in communities throughout the islands. A public that is active and aware supports efforts to sustain the ocean that sustains us all.

Many Bahamians don't know how to swim. It's shocking to think members of my own community are missing the opportunity to experience the beautiful and diverse coral reefs first hand. One of my favourite things is to take someone, terrified of the ocean, into the water for the first time, to be part of the transformation that occurs. It's a huge expansion when people realize that a whole part of the planet unfamiliar to them is now accessible. Inspiring others to be environmental stewards is definitely one of the most rewarding aspects of my work.

ABOVE: CASUARINA MCKINNEY-LAMBERT
FACING PAGE: CASUARINA AND STUDENT DIVING IN THE BAHAMAS

LOSANG RABGEY, PHD

ANTHROPOLOGIST

Nominated by **REBECCA MARTIN FN'02**

BORN IN A TIBETAN REFUGEE SETTLEMENT IN INDIA AND RAISED IN CANADA, DR RABGEY HOLDS A PH.D. FROM THE UNIVERSITY OF LONDON AS THE FIRST TIBETAN WITH A GRADUATE DEGREE IN FEMINIST ANTHROPOLOGY. WITH HER SISTER DR. TASHI RABGEY, SHE CO-FOUNDED MACHIK, A NONPROFIT GROUP WITH A MISSION TO GROW A GLOBAL COMMUNITY OF CARE FOR A STRONGER FUTURE FOR TIBET. IN THE LAST 20+ YEARS, MACHIK HAS SUPPORTED EDUCATION FOR THOUSANDS OF RURAL STUDENTS AND YOUTH IN TIBET AND IN DIASPORA. GENDER EQUITY HAS ALWAYS BEEN A KEY FOCUS OF MACHIK

My work with Machik pushes the boundaries of exploration. Traditionally, and for a long time, the notion of explorers did not include groups such as Tibetan women. My sister, Dr. Tashi Rabgey, were born in a refugee settlement. We grew up among the working class in a small town in Canada. Tashi became the first Tibetan Rhodes Scholar, and I became the first Tibetan to be awarded a Commonwealth Scholarship. We are focused on exploring how to build understanding and empathy into human interactions in an increasingly interrelated and complex world.

Our work has created many new encounters among disparate communities that grow deeper understanding and trust. The journey began when our parents dedicated my father's retirement savings to build the first Tibetan-language primary school in his native village in Tibet. We have now grown this work to support education for over 4000 young people inside and outside of Tibet. In Tibet, we have had the privilege of meeting incredible change makers who demonstrate what is possible. These conservationists, feminists, educators, and public health specialists, inspire us to work for change and long-term social justice. It is truly meaningful to create programs that convene people from very different cultural, linguistic, geographic and perspectival backgrounds to listen deeply and to engage with empathy in order to transform our communities and the world we all share.

I believe that now, more than ever, we need to strengthen our collective capacities to encourage this kind of empathy.

ABOVE: LOSANG RABGEY
FACING PAGE: RABGEY AND STUDENTS PHOTO: TASHI RABGEY;
RABGEY AT TSO NGONPO, AMDO, QINGHAI, CHINA PHOTO: KHASHEM GYAL

AVIJAN SAHA

JOURNALIST

Nominated by **KIM FRANK FN'18**

AVIJAN SAHA IS FROM SILIGURI, WEST BENGAL, INDIA. HE LOVES TO WORK IN JOURNALISM AND POINT OUT THE ENVIRONMENTAL MATTER THAT DEFINES OUR TIME. HIS SPECIAL INTEREST IS IN ELEPHANTS. HIS FATHER, HIS HERO, BOUGHT HIM HIS FIRST CAMERA AND SAID, "JUST GO ON AND TRY TO MAKE A BRIDGE BETWEEN THE HUMAN AND NATURAL WORLD." HIS HOMETOWN IS SURROUNDED BY SEVERAL FORESTS, THE HOME OF MANY ENDANGERED SPECIES. DOCUMENTING EVERY SITUATION THAT RELATES TO ELEPHANTS AND PEOPLE WHO ARE LIVING WITH ELEPHANTS, AVIJAN'S PHOTOGRAPHS ARE PUBLISHED WIDELY.

I have been working in a landscape called *Terai*, a mosaic and fragmented region covered by forests, tea gardens, human habitations, and industries. It is also a renowned zone with a history of elephant concentration. Every year more than ten people die by elephants and three to five elephants are killed by retaliation. Conflicts are increasing by both humans and elephants.

Elephant's habitat and passage are shrinking. My photojournalism is not creating sufficient positive awareness in the local communities. I have started directing my efforts to children. Bringing education is the only key to developing a positive vibe through young generations who have a vital role to change the face of the highlighted word called, "Conflict." I believe that education will change this Conflict to "Togetherness." I hope this relationship will be sustainable for both of these species.

When I was an editor and photographer in our Siliguri town-based area, I faced questions about elephants and their conservation basis. A perfect resolution was not obvious. Following my news work I covered the conflict zone, asking people about elephants and their problems. My story is simple: explore the ground facts about what is going on. Is it always conflict or are there any positive stories about elephants and their mahout?

To investigate, I documented solitary elephants, mostly bulls, and most of them engage in conflicts with humans. I used my camera to observe their behavior. In 2015, I made an identification book about those solitary bulls that focuses upon our landscape's problems. This was a basic book for those people who are struggling with elephants every single day, losing property and even life. The book told them what they really need to do: individual elephant identification which is needed to avoid conflicts and casualties.

ABOVE: AVIJAN SAHA

FACING PAGE: A MOTHER AND HER CALF CROSS THE SILIGURI-NAXALBARI HIGHWAY NEAR THE KIRAN CHANDRA TEA GARDEN AREA. ELEPHANTS MIGRATE THROUGH ANCIENT ROUTES AND CONTINUE TO TRAVEL THESE PATHS EVEN WHEN THEY ARE INTERRUPTED BY DENSE POPULATION CENTERS AND BUSY HIGHWAYS.

SUNNIVA SORBY

MI'19 — HISTORIAN

Nominated by **MILBRY POLK MED'95**

SUNNIVA SORBY IS A POLAR AMBASSADOR, AUTHOR AND EXPLORER WHO MADE HISTORY IN 1993 AS A MEMBER OF THE FIRST TEAM OF WOMEN TO SKI TO THE SOUTH POLE, AND IN 2021 AS THE FIRST WOMEN TO OVERWINTER SOLO IN THE ARCTIC. WITH OVER 25 YEARS IN THE POLAR REGIONS AS A HISTORIAN AND A NATURALIST GUIDE, SHE IS AN ADVOCATE FOR PROTECTING THE POLAR REGIONS THROUGH STORYTELLING, CITIZEN SCIENCE, YOUTH ENGAGEMENT AND VISUAL INSPIRATION. AN ACCOMPLISHED KEYNOTE SPEAKER, SHE PRESENTED AT THE UNITED NATIONS COP26 ON THE IMPORTANCE OF POLAR EDUCATION TO UNDERSTAND CLIMATE CHANGE. SUNNIVA'S GOAL IS TO INSPIRE BETTER SERVICE TO THE EARTH AND TO EACH OTHER THROUGH HER PROJECT, HEARTS IN THE ICE.

My goal is to show what inclusive leadership looks like. It is diverse and it includes women in all types of roles and industries that have been otherwise dominated by men. The world of exploration is a great example. Ego gets us to the door of exploring but the purpose of the exploring must be for the sake of knowledge that serves to educate others. There is no bravado in that it is selfless. The knowledge, the understanding around bearing witness, and what gets shared, should be for the greater good. Exploration today should be something that elevates, educates and informs us all so that we can be better caretakers. I am using my voice and narrative to share how valuable explorers and exploration can be to engage the public in a way that is about all of us. When you blend science, exploration and youth, you have a powerful mix of ways to inspire and inform the next generation of explorers.

My first sighting of Antarctica was on my 67-day slog to the South Pole. Thirty years later, I started a program my *Hearts in the Ice*, in the Arctic of Svalbard. The lines of latitude and longitude converged with insights I burn to share. I am fascinated by the human potential and how impactful we are when we share our knowledge and love of exotic remote places, and other cultures. My life has been exploration, travel, community, connectivity and giving back, if even in small ways. It was on a voyage to Antarctica with guests aged 20-90 inspired to learn, that I learned about citizen science and its impact. The world of expedition cruise ship travel has the power to transform people and create ambassadors, individual by individual.

FACING PAGE: AURORA PHOTOGRAPHERS AND THEIR VIEW IN THE ARCTIC; DRILLING FOR AND COLLECTING ICE CORES IN THE ARCTIC

HILDE FÅLUN STRØM

ARCTIC ADVOCATE

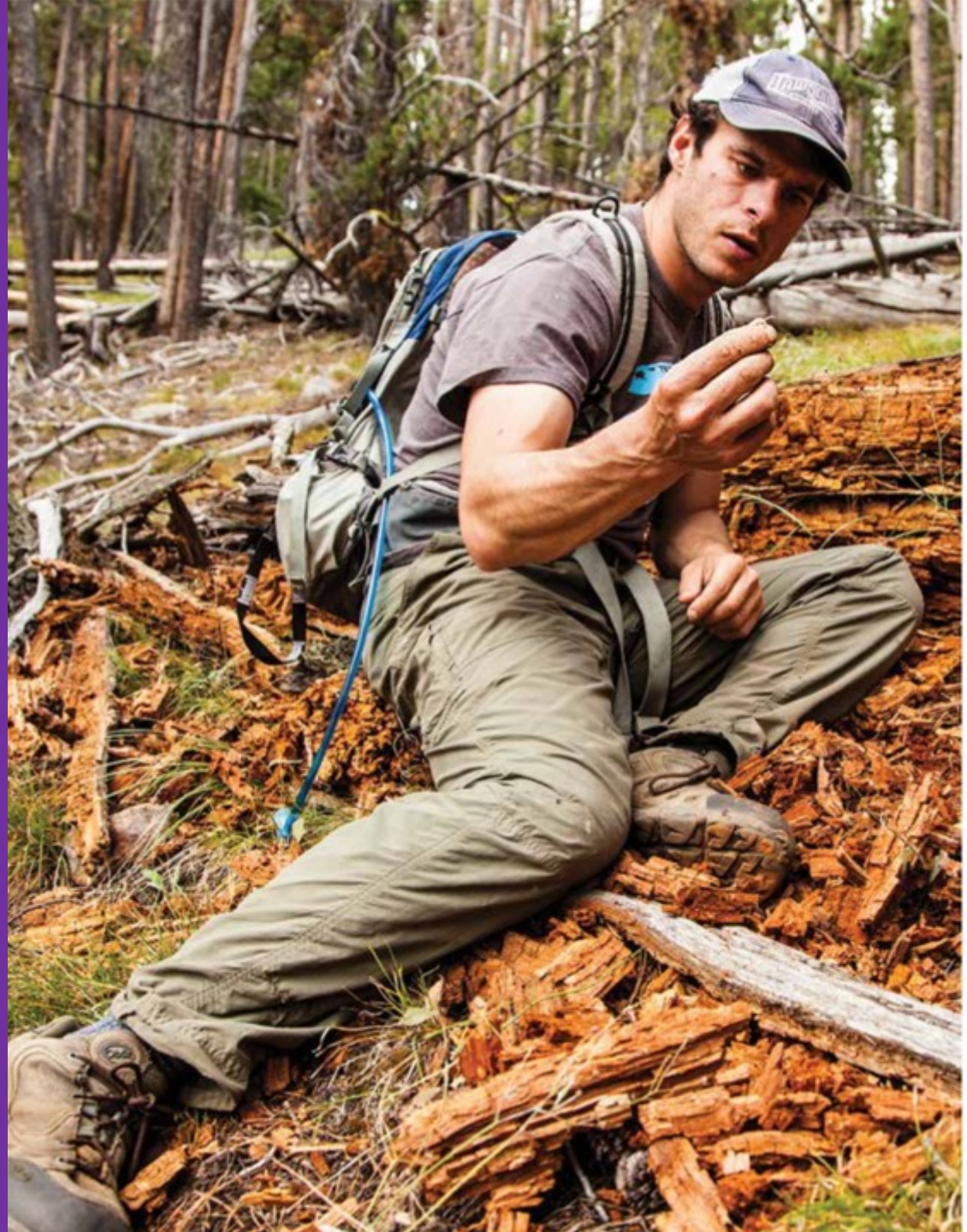
Nominated by **SYNNØVE MARIE KVAM STRØMSVÅG MI'02 AND MILBRY C. POLK MED'95**

HILDE FÅLUN STRØM IS AN ARCTIC ADVOCATE, EXPLORER, TED SPEAKER, AUTHOR, AND CITIZEN SCIENTIST WHO MADE HISTORY IN 2020 AS THE FIRST OF TWO WOMEN TO OVERWINTER SOLO IN THE NORWEGIAN ARCTIC. SHE HAS HAD CLOSE TO 400 POLAR BEAR ENCOUNTERS AND IS AN EYEWITNESS TO CLIMATE CHANGE IN THE ARCTIC. WITH THREE DECADES OF EXPERIENCE EXPLORING THE ARCTIC, SHE HAS A UNIQUE COMPETENCE AND A DEEP URGE TO PROTECT THE POLAR REGIONS AND THE SEA ICE. STRØM, AN AUTHORIZED SVALBARD GUIDE AND SEA CAPTAIN, COFOUNDED HEARTS IN THE ICE IN 2018, FOCUSING ON EDUCATION, CITIZEN SCIENCE, AND SOCIAL ENGAGEMENT AROUND THE ISSUES OF CLIMATE CHANGE.

I am the founder of Polheim (Norwegian for "Polar Home"), an impact hub and neutral gathering place in Longyearbyen that brings together community members, scientists, business people, artists, and changemakers for meetings, seminars, and workshops around climate change and other critical topics in the Arctic. The vision for Polheim is to create a place where bridges can be built between diverse groups of decision-makers—a home for sharing ideas, building trust, and developing community-grounded best practices for future solutions in the Arctic. Collaboration is the way forward. I hope that by engaging people—both at Polheim and as guests on ships and expeditions throughout the region—and sharing my deep enthusiasm and desire to protect these places, that I can help others recognize how we can all be part of the solution and take action. In collaboration with other nonprofit partners, I've created a digital portal for Polheim where individuals can share their experiences and the projects they have initiated.

My deep love for this region and my home contributes to an incredible sense of responsibility and urgency to protect it. Together with my collaborator Sunniva Sorby, I formed Hearts in the Ice, an organization born out of the experiences we had as the first women to overwinter in the extreme High Arctic. In our 19 months living with no running water or electricity in a remote trappers' cabin called "Bamsebu," we were among the few who could continue to gather in-field data for ongoing science during the covid pandemic. We were also able to share our experiences via satellite connection with more than 100,000 school children around the world, together with invited experts on climate-related themes, as well as communicate the pressing need we all have to join together and change the trajectory of our impact on the sea ice and on Arctic ecosystems.

HILDE FÅLUN STRØM (LEFT) AND SUNNIVA SORBY ON THE ICE IN SVALBARD. IMAGE COURTESY HEARTS IN THE ICE.



GREGG TREINISH

CONSERVATIONIST/ CITIZEN SCIENCE ADVOCATE

Nominated by **ALAN EUSTACE FN'15**

GREGG TREINISH FOUNDED ADVENTURE SCIENTISTS IN 2011 BASED ON HIS PASSION FOR EXPLORATION, SCIENTIFIC DISCOVERY, AND CONSERVATION. THE NONPROFIT PROVIDES PARTNERS WITH ACCESS TO SCIENTIFIC DATA THAT AMPLIFIES AND ACCELERATES SOLUTIONS TO ENVIRONMENTAL ISSUES. THE ORGANIZATION DOES THIS BY MOBILIZING AND TRAINING OUTDOOR VOLUNTEERS AND COMMUNITY MEMBERS TO GATHER DATA AT UNPRECEDENTED SCALES. MORE THAN 200 GOVERNMENTS AND SCIENTIFIC INSTITUTIONS ARE UTILIZING THE LARGEST DATASET ON EARTH FOR MICROPLASTICS POLLUTION, WHICH WAS AMASSED BY ADVENTURE SCIENTISTS. TREINISH IS AN ASHOKA FELLOW AND A WORLD ECONOMIC FORUM YOUNG GLOBAL LEADER. HE HOLDS A BIOLOGY DEGREE FROM MONTANA STATE UNIVERSITY AND A SOCIOLOGY DEGREE FROM THE UNIVERSITY OF COLORADO BOULDER.

Our work is to mobilize people all around the world, giving them the tools they need to help solve environmental issues. We have mobilized, trained, and certified more than 20,000 volunteers to collect scientific field data for our partners at NGOs, government agencies, and universities. While in the past the field of citizen science has been ridiculed in the belief that the data collected by nonprofessionals must be subpar, this is simply not the case. We pride ourselves on collecting high-quality data. We have shown repeatedly that when careful safeguards are in place, the quality of the data can become an essential piece of the puzzle to drive lasting change. For the data to be used, it must hold up to scientific scrutiny, and in court, and be able to provide direction for management agencies. Adventure Scientists' partnerships have yielded groundbreaking discoveries, aided accountability across supply chains, and catalyzed initiatives that will positively impact the planet for generations.

We plan to expand the number of active projects both domestically and internationally, targeting biodiversity, fresh water, climate, and forests, and ensure that anyone who would like to get involved as a volunteer has a way to do so. Key to our success is our focus on diversity, equity, and inclusion efforts, applying this lens across the organization.

The impacts of climate change are urgent and all too visible, stark reminders of the importance of Adventure Scientists' work. We are at a critical juncture on this planet, and engaging our tens of thousands of volunteers to help environmental leaders address critical conservation challenges is nothing short of essential. Our volunteers can access areas that the general public cannot. Compared to traditional field science, we are able to deploy many more people, much more quickly, across a massive spatial and temporal scale. The resulting systems-level change we are able to foster is creating a new way to help science have an impact.

GREGG TREINISH COLLECTS SAMPLES OF BEAR HAIR FROM A LOG THAT HAD BEEN EXCAVATED BY THE CREATURE. PHOTO: ALEXANDRIA BOMBACH.

HUMANITIES

PAIGE WEST, PHD

ANTHROPOLOGIST

Nominated by **ROB MCCALLUM FN'09**

DR. PAIGE WEST HOLDS THE CLAIRE TOW PROFESSORSHIP IN ANTHROPOLOGY AT BARNARD COLLEGE AND COLUMBIA UNIVERSITY WHERE SHE SERVES AS THE DIRECTOR OF COLUMBIA'S CENTER FOR THE STUDY OF SOCIAL DIFFERENCE. SHE HAS WORKED IN PAPUA NEW GUINEA SINCE 1996, TO UNDERSTAND THE BIODIVERSITY AND TRADITIONS OF INDIGENOUS PEOPLES AND TO HELP THEM CONSERVE THEIR CULTURES, LANGUAGES AND ENVIRONMENTS. SHE IS THE AUTHOR AND EDITOR OF NUMEROUS BOOKS AND THE CO-FOUNDER OF TWO NGOS THAT ARE CONSERVATION-FOCUSED.

Most cultural anthropologists work alone, a model that imagines the lone ethnographer entering to a field site to live among the natives and learn about their lives. During my first field research in the remote highlands of Papua New Guinea (PNG), I followed this model. Over several years I realized that, for me, that model was inadequate. For most of my career I have worked in partnership with other scholars, the majority of whom have been from PNG. I have also refused the other major assumption in my field which is to produce work that adds solely to the anthropological cannon. My primary goal is to strengthen Indigenous sovereignty over biodiversity and tradition and to develop new ways in which anthropological methods can add to this practice.

I've done this by cofounding a small NGO that creates the conditions of possibility for young scholars from PNG to go overseas and earn graduate degrees in ecology and conservation, by cofounding a school that teaches K-12 students at the nexus of Indigenous knowledge and scientific knowledge, and by fostering 23 small marine protected areas designed and implemented by Indigenous communities. I count over thirty graduates of our NGO as my colleagues in conservation. They are changing the face of conservation for the better, globally.

During this, I have continued as a professor who pushes my students to transform anthropological methods and their goals as anthropologists. I believe that my lasting legacy in anthropology is the development of a new generation of scholars that believes our field should be used to make the world better.

ABOVE: PAIGE WEST
FACING PAGE: IN PNG. PHOTOS: PATRICK NASON, J.C.SAYLOR,

EDUCATION

JOHN AINI

ECOLOGIST

Nominated by **PAIGE WEST FR'15**

JOHN AINI IS FOUNDER AND DIRECTOR OF AILAN AWARENESS, A MARINE CONSERVATION AND INDIGENOUS EMPOWERMENT-FOCUSED NGO IN NEW IRELAND, PAPUA NEW GUINEA. HE IS A MAIMAI–A CHIEF IN THE MALANGAN CULTURE IN NORTHERN NEW IRELAND, A AINPIDIK IN THE TUMBUAN SOCIETY FROM SOUTHERN NEW IRELAND, AND A MERENGEN FROM HIS OWN TUNGAK CULTURE FROM LOVONGAI, NEW HANOVER. HE HAS WORKED AS A COMMUNITY-BASED RESOURCE MANAGEMENT EXPERT AND LECTURER AT THE NATIONAL FISHERIES COLLEGE OF PAPUA NEW GUINEA. HE IS THE CO-FOUNDER OF THE RANGUVA SOLWARA SKUL, A FORMER MEMBER OF GOVERNMENT, AND RECIPIENT OF THE 2012 SEACOLOGY PRIZE.

I was born and raised in Lavongai, a small coastal community on the island of New Hanover. In 1993, together with my late brother Miller and our cousin Michael, I founded Ailan Awareness an NGO focused on the strengthening of Indigenous sovereignty with regard to both biological and cultural diversity in my home of New Ireland, Papua New Guinea. Since its beginnings, Ailan Awareness has engineered a unique approach to what we now call decolonial marine conservation. We empower coastal communities to manage their marine and cultural resources using a mix of traditional and scientific methods, giving primacy to strengthening Indigenous conservation methods. Working at a grassroots level, we address a major gap in the efforts of the national government and big international NGOs. We give the people who are directly affected by declining biodiversity and the loss of tradition the support and tools required to design and carry out the conservation of biological diversity and traditional cultural practices.

The potential impact of our work is the preservation of the reef as a viable source of food, income and beauty for now and future generations, and healthy reefs with abundant and sustainably managed resources. The coastal communities and ecosystems of New Ireland are being destroyed at an alarming rate by overfishing, pollution and degradation. If current trends continue, neither the reefs nor the communities that depend upon them will be able to recover from the declining fisheries stocks and reef degradation. Without the work we do, future conservation initiatives will have little to protect and local communities will be forced to abandon traditional lands and livelihoods in order to survive.

This is my life's work. In the end, what I want for the future is for our children to be able to live on our traditional lands, fish our traditional seas, and continue the ways of our ancestors.

ABOVE: JOHN AINI VIEWS MALAGAN MATERIALS AT THE MET, MANHATTAN
FACING PAGE: JOHN AINI IN RITUAL LEADERSHIP ROLE

BETH ALLGOOD

WILDLIFE ADVOCATE

Nominated by **BONNIE WYPER MR'18**

BETH ALLGOOD IS THE FOUNDER AND PRESIDENT OF ONENATURE, WHERE SHE LEADS RESEARCH ON THE VALUE OF WILDLIFE AND NATURE TO HUMAN WELL-BEING, DEVELOPING APPROACHES TO MEASURE AND SUPPORT COMMUNITY WELL-BEING THAT WILL FOSTER MORE SUSTAINABLE OUTCOMES FOR PEOPLE AND LOCAL WILDLIFE. PRIOR TO FOUNDING ONENATURE, ALLGOOD WAS THE SENIOR POLICY ADVISOR FOR INTERNATIONAL GOVERNMENT RELATIONS AT THE NATURE CONSERVANCY, A CONGRESSIONAL LIAISON, A GOVERNMENT AID AGENCY LIAISON AT THE WORLD WILDLIFE FUND, AND THE U.S. DIRECTOR AT THE INTERNATIONAL FUND FOR ANIMAL WELFARE.

For decades, policymakers have used Gross Domestic Product (GDP) as a leading indicator of any given economy's general health. However, GDP as a single metric cannot meaningfully assess a country's overall quality of life or well-being. This is true not just at a global level but also at a local level. Unfortunately, this narrow focus on economic productivity as a measure of success has been ingrained in community development and conservation projects. As a result, most wildlife conservation has emphasized economic approaches to saving wildlife and wild places in a way that may be at odds with or even undermine traditional community values of wildlife and wild places.

Rather than relying solely on models that equate economic growth with human thriving, we can use common values grounded in well-being. To understand and measure well-being in conservation projects, it's common practice to rely on objective indicators (information observed about the community) and not subjective indicators (information about the subject's experience from the subject's perspective) in assessing community impacts. Both types of information are vital to establishing a true well-being baseline that can provide reliable information on community perceptions and early warning signs of unanticipated challenges. To address this gap, I cocreated a peer-reviewed community well-being index that assesses life satisfaction, the many domains of well-being, and communities' feelings about wildlife and nature around them. As part of a comprehensive approach to community conservation centered on community values and perceptions, this index will enable conservation practitioners to better support communities and wildlife. Moreover, it can inform and encourage decision-makers to better understand the value and connection communities have to wildlife and nature. This information can then be used to develop more socially just and sustainable policies and better source funding to increase human thriving, protect species and habitats, and improve long-term economic sustainability.

FROM TOP: BETH ALLGOOD AT THE TIGER'S NEST IN BHUTAN, AND COMMUNING WITH ELEPHANTS IN KAZIRANGA NATIONAL PARK, INDIA.

EDUCATION

THEO ANAGNOSTOPOULOS PHD

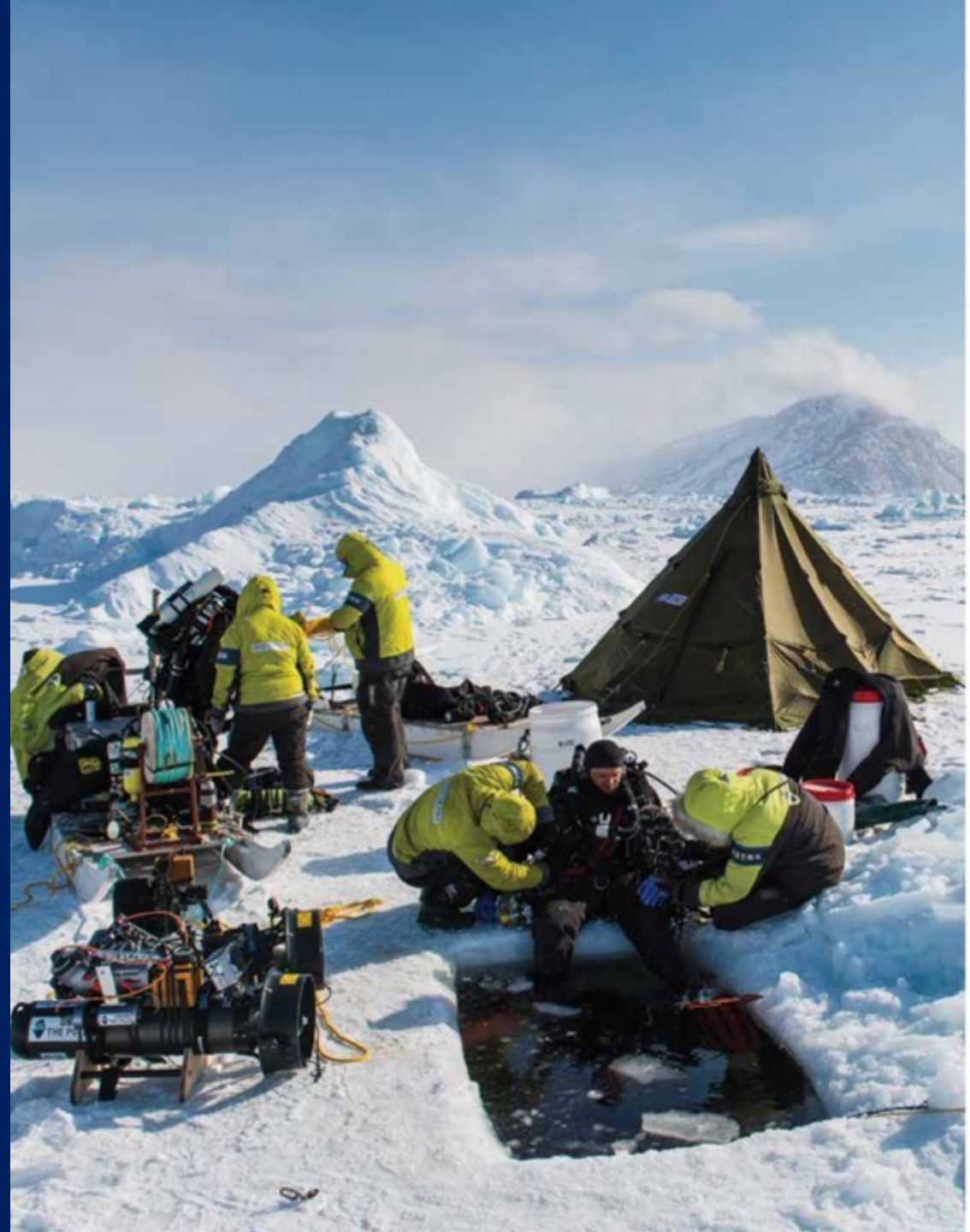
MI'19 — EDUCATOR

THEO ANAGNOSTOPOULOS, WHO WAS INITIALLY AN ACADEMIC PROFESSIONAL IN MOLECULAR GENETICS, DISCOVERED A DEEP GAP OF KNOWLEDGE BETWEEN SCIENTISTS AND THE GENERAL PUBLIC. HE FOUNDED *SCICO*, SHORT FOR SCIENCE COMMUNICATION, A NON-PROFIT ORGANIZATION AIMING TO COMMUNICATE SCIENCE IN A SIMPLE AND INTERACTIVE WAY. ANAGNOSTOPOULOS HAS BEEN A CHANGE MAKER IN THE FIELD OF SCIENCE COMMUNICATION AND SCIENCE EDUCATION IN GREECE AND INTERNATIONALLY. HIS WORK OVER THE LAST TWELVE YEARS HAS BEEN PIVOTAL IN COMBATING SCIENTIFIC ILLITERACY THROUGH HIS LARGE SCALE AWARENESS PROJECTS, AND BY EMPOWERING THOUSANDS OF EDUCATORS AND STUDENTS THROUGH STEM EDUCATION WITH A FOCUS ON UNDERPRIVILEGED AREAS.

There has hardly been a more important time in recent history when public understanding of science and critical thinking are as crucial as they are today. The current pandemic, climate change, protection of biodiversity, future technologies, etc., all require that empowered citizens who embrace science and technology know how to find reliable information in order to make decisions that protect both society and themselves. My work focuses on making science simple and relatable to everyday life, and cultivating the next generation of thinkers and problem solvers.

To achieve this, I founded SciCo in 2008, to communicate science in a simple, interactive way. SciCo consists of a team of like-minded individuals who work within two main pillars: awareness and empowerment. We have run more than 200 high-impact outreach activities, some of which have become important milestones in the Greek national curriculum, and for Greek citizens. These include a series of popular annual science festivals since 2014, including Athens, Thessaly, Patras, Ioannina, Aegean and Mediterranean Science Festivals, which are visited by an audience of 50,000 per year. *Mind the Lab* is a science festival taking place at metro and train stations around the world. Celebrity Science is a popular YouTube show which brings engagement through the contribution of social media influencers. Also, we have created a number of STEM empowerment programs. These STEM programs empower educators and students in underprivileged areas of Greece, and around the world, to address local social and environmental challenges through science and technology. They also encourage the participation of girls in science. These programs have been running since 2017, benefitting more than 90,000 students and teachers in 107 remote areas to date. A recent project that targets the isolated population of the Pomaks in Northern Thrace is supported by National Geographic.

FACING PAGE: THEO AT PATRAS SCIENCE FESTIVAL.
ZAMBIAN SCHOOL CHILDREN PHOTO: THEO ANAGNOSTOPOULOS ARCHIVE



GHISLAIN BARDOUT

UNDERWATER EXPLORER

Nominated by **MARTIN KRAUS MR'15**

INSPIRED BY THE GREAT OUTDOORS, PARTICULARLY MOUNTAINS AND THE OCEAN'S DEPTHS, WITH AN AFFINITY FOR SCIENCE GLEANED DURING ENGINEERING STUDIES AT SWITZERLAND'S ÉCOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE (EPFL), GHISLAIN BARDOUT TOOK THE PLUNGE INTO EXPLORATION AT FRENCH EXPLORER JEAN-LOUIS ÉTIENNE'S SIDE IN 2006. AN AVID UNDERWATER DIVER WITH STRONG CURIOSITY, CONCERNED ABOUT HUMAN IMPACT ON OUR PLANET, BARDOUT—ALONG WITH HIS WIFE, EMMANUELLE PÉRIÉ-BARDOUT (SEE PAGE 42)—CONCEIVED THE FIRST "UNDER THE POLE" EXPEDITION IN 2007. OVER THE PAST 15 YEARS AND THROUGH FOUR AMBITIOUS PROGRAMS, HE HAS ACQUIRED AN ADVANCED EXPERTISE IN DEEP AND POLAR SCIENTIFIC DIVING AND BROUGHT STRUCTURE AND DEVELOPMENT TO HIS EXPEDITIONS, FOCUSED ON SCIENTIFIC DISCOVERY AND RAISING PUBLIC AWARENESS.

The biodiversity of deep-sea ecosystems—invisible from the surface—remains largely unknown and unexplored. As light decreases and we enter the twilight zone, species live and participate in balance with the planet. Yet, they are now affected by the temperature and acidification of the oceans, overfishing, invasive species, waste, chemical pollution, mining, oil and gas exploitation, and the laying of cables and pipelines. The biodiversity of deep-sea ecosystems is threatened and, with it, the capacity of marine ecosystems to connect life between the surface and the depths and also their ability to regulate the climate. A whole chain of life depends on them, yet we still know very little about these organisms upon which we depend.

Our organization aims to strengthen scientific knowledge and raise public awareness about the importance of preserving mesophotic environments—ocean depths lying between 30 and 200 meters. We are using our skills in deep diving and navigation to access inhospitable environments, such as polar regions, remote islands, and mesophotic depths. Through our 2021–2030 Deeplife program, we are studying the continuity and interrelation between different marine animal forests through temperate regions, from the poles to the tropics. The collaboration between the French National Centre for Scientific Research (CNRS) and an international consortium of scientists is endorsed as an official project of the United Nations' Decade of Ocean Science for Sustainable Development.

Our work in the twilight of the mesophotic zone contributes to preserving the species that live at the border of the beach and the abyss. This area of the ocean represents the crossroads of possibilities and hope for the oceans, where corals still have the possibility to resist global warming, where species take refuge from anthropic impact. By making these fragile and unknown ecosystems known and recognized, Under the Pole aims to preserve the ocean in all its dimensions.

GHISLAIN BARDOUT AND HIS TEAM PREPARE TO DIVE 100 METERS BENEATH THE SEA ICE IN UUMMANNAQ BAY, GREENLAND. PHOTOGRAPH BY LUCAS SANTUCCI, COURTESY UNDER THE POLE.

MANUEL JOSE CARPINTERO MANZANARES

FI'18 — EDUCATOR

Nominated by SYNNØVE STRØMSVÅG MI'02 AND RICHARD WIESE FN'89

MANUEL JOSE CARPINTERO MANZANARES HAS BECOME ONE OF THE MOST ADVENTUROUS TEACHERS ON EARTH. HE HAS LED EXPEDITIONS ALL OVER THE PLANET. AWARDED IN 2021 AS A BEST TEACHER, HE DEDICATES HIS LIFE TO TEACHING AND DISSEMINATING GEOGRAPHY AND EXPLORATION. HIS DREAM IS TO BRING HIS LITTLE EXPLORERS EDUCATIONAL PROJECT TO EVERY SCHOOL ON EARTH. HE IS FOUNDER AND PRESIDENT OF SOCIEDAD ASTRONÓMICA Y GEOGRÁFICA DE CIUDAD REAL AND ON THE BOARD OF DIRECTORS OF THE REAL SOCIEDAD GEOGRÁFICA. HE HAS COLLABORATED WITH NATIONAL GEOGRAPHIC WORKSHOPS FOR CHILDREN. HE WANTS BOYS AND GIRLS TO LOVE EXPLORATION AND SCIENCE AND TO KEEP THE INDOMITABLE SPIRIT OF HUMAN BEINGS ALIVE

I have explored the ends of the Earth, I have crossed the most dangerous jungles, I have sailed the most dangerous seas, but I have always done something much more complicated, risky and difficult. I'm a teacher. I have always brought my adventures to my classrooms and I have managed to motivate my students. The change was incredible. My students began to be interested in exploration and geography, all as an adventure.

The next step was clear. I increased my radius of action and became the director of the school. I transformed it with the idea of bringing the world to the classroom, carrying out an innovative educational project called Little Explorers. Thanks to this project, boys and girls of this small town have changed and now have a global vision of adventure and science through visits to the school from astronauts, scientists and explorers. I have also introduced travel as an educational element. Students, ages 9-12, traveled to meet other children from Norway, Poland, Romania, UK, and Italy. This allowed my project to develop in other schools and cultures with great success and demonstrated that exploration and science are the perfect vehicles for education.

ABOVE: MANZANARES ON THE LACANTUM RIVER, CHIAPAS (MEXICO)
FACING PAGE: WORKING AS A TEACHER ANYWHERE; HERE IN CHIAPAS; EXAMPLE OF MANZANARES BRINGING THE IMPORTANCE OF SCIENCE AND EXPLORATION TO SOCIETY AROUND THE WORLD.

CRAIG MATHIESON

EDUCATOR

Nominated by **LISA KEATING; MARK WOOD FN'15**

SCOTTISH EXPLORER CRAIG MATHIESON IS THE FOUNDER AND HEAD OF THE CHILDREN'S CHARITY THE POLAR ACADEMY. A VETERAN OF BOTH NORTH AND SOUTH POLE EXPEDITIONS, HE DEDICATES HIS TIME TO TRAINING AND INSPIRING THE NEXT GENERATION OF YOUNG PEOPLE TO SUCCEED IN LIFE, ESPECIALLY HELPING THOSE WHO ARE STRUGGLING. A VETERAN OF MANY EXPEDITIONS, HE PARTICIPATED IN THE FIRST DEDICATED SCOTTISH EXPEDITION TO THE SOUTH POLE IN 2004.

The Polar Academy participants train for 12 months in Scotland, before a 10-day sledge hauling expedition in Greenland. Schools that have supported their own Polar Academy pupils have seen an increase in interest of scientific studies and outdoor education. Once back from the Arctic, the teenagers are tasked with the public speaking circuit. Teenagers speaking to other teenagers is very powerful when they talk about overcoming adversities, working hard to succeed, and the importance of being kind to each other. The success of The Polar Academy is Craig's legacy. With each new explorer who graduates, his/her knowledge, inspiration and belief is shared with thousands of individuals, who then strive to be the best versions of themselves.

Craig Mathieson began his career in the military and has always had an affinity for the outdoors. In 2006, he successfully trained and accompanied a high-school pupil to complete an expedition to the North Pole. This expedition not only had a huge positive impact on the pupil but also on his family and local community. It led to the founding of the Polar Academy, an extremely challenging year-long training programme that instills the sense of pride and confidence needed to achieve in life.

All explorers know in their heart the magical benefits of spending time outdoors and the transformative side effects of pushing oneself to undertake and accomplish difficult tasks. The young explorers and their families are changed and their outlook on life is positively altered. Many choose to continue outdoor pursuits while others are determined to aim for professions they previously thought were beyond them.

ABOVE: CRAIG AT GLENMORE, SCOTLAND
FACING PAGE: 1ST POLAR ACADEMY TEAM; SEASIDE EXERCISE PULLING TIRES THROUGH THE SURF

EDUCATION

KARINA OLIANI

WILDERNESS AND EXPEDITION DOCTOR

Nominated by **MARK HANNAFORD FI'20**

KARINA OLIANI, WHO SPECIALIZES IN WILDERNESS AND EXPEDITION MEDICINE, IS A POSTGRADUATE IN URGENCY AND EMERGENCY MEDICINE AT HOSPITAL ISRAELITA ALBERT EINSTEIN AND A PRACTICIONER IN NUTROLOGY AT HOSPITAL SANTA CASA DE MISERICÓRDIA IN SÃO PAULO. SHE FOUNDED THE DHARMA INSTITUTE, WHICH CARRIES OUT NEARLY A DOZEN VOLUNTARY MEDICAL EXPEDITIONS EVERY YEAR TO THE MOST NEEDY AND REMOTE PLACES IN BRAZIL AND ELSEWHERE IN THE WORLD. IN ADDITION TO SUMMITING EVEREST AND K2, OLIANI IS A PRIVATE HELICOPTER PILOT.

A restless soul passionate about medicine, nature, and adventure, Karina Oliani has made it her life's work to bring medical care to little-known remote areas surrounded by nature. Her experience as an explorer has taken her to more than 120 countries, during which she has built a formidable expedition résumé. She has summited Everest twice and was the first Brazilian woman to climb K2. She is also the first person to cross the lava lake of the Erta Ale volcano in Ethiopia (a Guinness World Record). Oliani is also a diving instructor who has made more than 5,000 dives, many among apex ocean predators.

It was during these adventurous experiences that Oliani realized the need to promote basic health and well-being in such remote places. Since then, she has worked to develop a strategy anchored by three pillars: specialized medicine, education, and environmental conservation through an initiative known as the Dharma Institute. She has carried out more than 10,000 medical consultations, surgeries, and procedures in 50 communities in nearly a dozen Brazilian states and other needy spots in the world.

"Often medicine is considered separate from adventure," says Oliani. "As I have found, a basic psychological understanding disproves this at the starting block, I like to think my approach exemplifies that, 'Where humanity goes, medicine must follow.' I'm honored to showcase medicine at extremes and with the spirit of exploration. My mission is to promote the health and well-being of remote communities through the provision of high-quality specialized medicine, education, and environmental conservation."

As a trailblazing Latin American woman, Oliani continues to inspire young women and girls to pursue their dreams and explore what is possible in life.

FROM TOP: KARINA OLIANI WITH CARIBBEAN REEF SHARKS IN THE BAHAMAS. PHOTOGRAPH BY ALE SOCCI. OLIANI CROSSES THE LAVA LAKE OF THE ERTA ALE VOLCANO IN ETHIOPIA. PHOTOGRAPH BY MARCELO RABELO.

EDUCATION

HALLEY RAMOS

ARCHITECTURAL PRESERVATIONIST

Nominated by **ALEX BOROWICZ TM'18**

HALLEY RAMOS IS A HISTORIC PRESERVATIONIST WHO DEPLOYS THE LATEST TECHNOLOGIES, SUCH AS AUGMENTED/VIRTUAL REALITY, 3D SCANNING/MODELING, AND COMPUTER-BASED FABRICATION, FOR THE EXPLORATION, RESTORATION, AND CONSERVATION OF CULTURAL HERITAGE. SHE IS A COFOUNDER OF SOE, AN ARCHITECTURE PRESERVATION STUDIO; AN ADJUNCT ASSISTANT PROFESSOR AT COLUMBIA UNIVERSITY; AND A PRESERVATIONIST AT THE NYC LANDMARKS PRESERVATION COMMISSION. HER WORK ADVANCES PRESERVATION THROUGH EMERGING DIGITAL TOOLS THAT DEEPEN OUR UNDERSTANDING AND ENRICH OUR EXPERIENCE OF PLACES AND OBJECTS.

My work opens up the ancient and recent past by bringing the 21st century into the field, allowing anyone to experience and learn about cultural heritage via augmented and virtual reality—whether through a computer screen or by walking through a virtual installation of a historic site. By making history accessible, while continuing to innovate along the way, my work has made important contributions by allowing anyone to explore via VR, while also training local communities to do this highly technical work themselves. For example, in a recent project with the International Committee of the Red Cross, I trained local photographers in Syria, Iraq, and Palestine to 3D scan significant urban sites that have been devastated by conflict. The data provide an immersive virtual tour experience to bring awareness to the impact of urban warfare on civilians.

After graduating, I started SOE, an architectural preservation studio, with my colleague André Jauregui, to develop and test new approaches for documenting and preserving cultural heritage. We've taken a tech-based approach to expand accessibility and interest in the exploration of historic sites, as well as to communicate history to advocate for social justice.

My research and practice expand beyond the digital realm, where I also use 3D scanning technologies to facilitate the physical replication and reproduction of damaged, missing, and stolen artifacts and architectural elements. I believe that emerging digital tools inform a new paradigm of preservation that deepens our understanding and enriches our experience of sites and objects. My aim is to advance cultural heritage preservation through innovative technology.

HALLEY RAMOS UNDERTAKES FIELDWORK AT THE EASTERN STATE PENITENTIARY IN PHILADELPHIA, PENNSYLVANIA, WHERE SHE USED 3D SCANNING TO DOCUMENT REMNANTS OF A FRESCO THAT WAS DISCOVERED IN NOTORIOUS GANGSTER AL CAPONE'S FORMER JAIL CELL.

SHAWNA PANDYA MD

FI'19 — MEDICINE

Nominated by **MARK HANNAFORD MI'20 AND KELLIE GERARDI MN'13**

DR. SHAWNA PANDYA IS A PHYSICIAN, AQUANAUT, SKYDIVER, PILOT-IN-TRAINING, VP OF IMMERSIVE MEDICINE WITH LUXSONIC TECHNOLOGIES, DIRECTOR OF MEDICAL RESEARCH AT ORBITAL ASSEMBLY CORPORATION AND PODCAST HOST WITH WORLD EXTREME MEDICINE (WEM). SHE IS A GRADUATE OF THE SCIENTIST/ASTRONAUT CANDIDATE PROGRAM AT INTERNATIONAL INSTITUTE FOR ASTRONAUTICAL SCIENCES (IIAS) PROJECT POSSUM, DIRECTOR OF IIAS SPACE MEDICINE GROUP AND CHIEF INSTRUCTOR FOR IIAS OPERATIONAL SPACE MEDICINE COURSE. DR. PANDYA WAS ON THE FIRST CREW TO TEST A COMMERCIAL SPACESUIT IN ZERO GRAVITY IN 2015. SHE EARNED HER AQUANAUT DESIGNATION DURING THE 2019 NAUTICAL EXPERIMENTS IN PHYSIOLOGY, TECHNOLOGY AND UNDERWATER EXPLORATION (NEPTUNE) MISSION.

he mantra of WEM is *where humans go, medicine must follow.* It rings particularly true when referring to space medicine. It is no exaggeration to say that the innumerable hazards of the spaceflight environment, including radiation, microgravity, isolation, confinement and much more, are trying to kill you. Added to that, space medicine has been around for only 60 years and is continually evolving—from immediate concerns like deconditioning in microgravity to longer term questions like how to address reproduction in space. My publications, expeditions, testing, technology development, and concepts for future medical architectures are but small contributions to a rapidly evolving field. My hope is that future space medicine practitioners and researchers will look back at my work as a small part of the foundational fabric for medicine on the Moon, Mars and beyond.

I lend my knowledge base and experience to co-developing and deploying immersive technologies such as virtual reality and 360° video for medical skills development in space and on Earth. I also have the good fortune of being an architect and foundational voice for a future medical infrastructure on the world's first artificial gravity space station.

Growing up in an era when Canada's first female astronaut, Dr. Roberta Bondar, flew in space was tremendously inspiring to me. I thought, she is a Canadian and a female like me. So, all I need to do is go become a neuroscientist, physician and then an astronaut, just like her. This is what inspired me to pursue neuroscience, medicine and masters studies at the International Space University.

ABOVE: DR. SHAWNA PANDYA IN HER FLIGHT SUIT.
PHOTO: COOPER AND O'HARA PHOTOGRAPHY
FACING PAGE: ON AN EXPLORATORY SORTIE DURING AN ANALOG MISSION AT THE MARS DESERT RESEARCH STATION IN UTAH. PHOTO: DOUG CAMPBELL
DR. PANDYA TESTS NOVEL BIOMONITORING DEVICE IN ZERO GRAVITY.
PHOTO: INTERNATIONAL INSTITUTE FOR ASTRONAUTICAL SCIENCES

EMMANUELLE PÉRIÉ-BARDOUT

UNDERWATER EXPLORER

Nominated by **MARTIN KRAUS MR'15**

FASCINATED BY OCEANS SINCE CHILDHOOD, EMMANUELLE PÉRIÉ-BARDOUT TRAINED TO BECOME A SKIPPER AND HEAD A NAUTICAL BASE AT THE FRENCH NATIONAL SCHOOL OF SAILING AND LES GLÉNANS. IN 2004, SHE JOINED A YEAR-LONG EXPEDITION WITH FRENCH EXPLORER JEAN-LOUIS ÉTIENNE AS A SAILOR AND NAUTICAL ACTIVITIES MANAGER, THEN WAS FIRST MATE ON A POLAR SAILING BOAT IN NORWAY. AFTER A MISSION AT THE GEOGRAPHICAL NORTH POLE, SHE FOUNDED UNDER THE POLE WITH HER HUSBAND, GHISLAIN BARDOUT (SEE PAGE 50), IN 2008. AS A REBREATHER DIVER ON THE EXPEDITIONS AND CAPTAIN OF THE *WHY*, UNDER THE POLE'S SAILBOAT, SHE COLEADS PROGRAMS IN THE FIELD AND FROM THEIR HOME BASE IN BRITTANY, WITH A KEEN EYE FOR EDUCATION AND CONSERVATION.

For the past 15 years, through our Under the Pole program, we have undertaken numerous pioneering expeditions to explore submarine habitats. Some of these forays stand out for the rarity of the images brought back, others for the value of the scientific work and technological innovation in an environment where humankind can only stay on borrowed time: the ocean. To succeed in exploring polar, temperate, and tropical environments—seldom visited because of their difficult access—requires unconventional resources.

Only five to 10 percent of the ocean is known, mostly in shallow waters. Due to our unique expertise, we have embarked on an ambitious global program, Deeplife, to deepen scientific knowledge of the ocean's mesophotic zone—ocean depths between 30 and 200 meters. This intermediate zone represents a large part of the coasts and is largely unknown though crucial for their ecology, playing a fundamental role in the ocean's balance. Our work in this realm has changed our vision of the reef and demonstrated the absolute necessity of integrating this zone into global conservation programming. It revealed hot spots of sheltered biodiversity here: a greater coral diversity at 40 to 60 meters than in shallow waters, a potential refuge against global warming because of low coral bleaching beyond 40 meters depth, and the discovery of corals adapted to life down to 172 meters—a world record! We must consider coastal ecosystems in their continuity, from the surface to the depths, to ensure the conservation and sustainable management of marine biodiversity.

IN THE EXTREME NORTHWEST OF THE SVALBARD ARCHIPELAGO—AT ALMOST 80° NORTH—EMMANUELLE PÉRIÉ-BARDOUT AND HER DIVE TEAM ON THE RESEARCH VESSEL *WHY* ENTER THE WATER TO EXPLORE A MARINE ANIMAL FOREST IN THE MESOPHOTIC ZONE. PHOTOGRAPH BY FRANCK GAZZOLA, COURTESY UNDER THE POLE.

ARTS

ARTS

DAVID BORISH

SOCIAL RESEARCHER AND VISUAL ARTIST

Nominated by **TRAVIS STEFFENS FI'14 AND SUNNIVA SORBY MI'19**

DAVID BORISH IS A SOCIAL AND HEALTH RESEARCHER AND VISUAL ARTIST PUSHING THE BOUNDARIES OF AUDIO-VISUAL METHODOLOGIES TO EXPLORE AND SHARE RELATIONSHIPS BETWEEN HUMANS AND THE ENVIRONMENT. BORISH DEVELOPED AN INNOVATIVE DATA ANALYTICAL STRATEGY THAT REPURPOSES VIDEO-EDITING SOFTWARE FOR QUALITATIVE INQUIRY, WHICH ALLOWS HIM TO EXPLORE VIDEO INTERVIEWS IN-DEPTH. THROUGH THIS METHOD HE HAS PUBLISHED MULTIPLE ARTICLES IN HIGH-IMPACT JOURNALS. AS A WHOLE, HIS WORK SUPPORTS THE EMOTIONAL, AUDIO-VISUAL, AND QUALITATIVE COMMUNICATION OF COMMUNITY EXPERIENCES WITH BIODIVERSITY LOSS, WHILE ALSO CELEBRATING ACTIONS OF STRENGTH, HOPE, AND RESILIENCE.

Place-based knowledge systems, such as Indigenous knowledge, are vital for understanding and addressing environmental issues, but there are major challenges with leveraging these sources in accurate and culturally appropriate ways. Oral and visual knowledge are often miscommunicated or misunderstood because they are not accessible to decision-makers outside of these communities. My work directly addresses this challenge by communicating community knowledge through a methodological process I call video-based qualitative analysis: blending creative storytelling techniques with traditional research methods.

During my PhD, I led a community-based film and research project called "Herd: Inuit Voices on Caribou." The goal was to create impact-driven documentary films and qualitative research papers about Inuit knowledge of, and experiences with, caribou population declines in Labrador, Canada. Rather than working on research first then the documentary film, I piloted new ways of repurposing video-editing software for qualitative inquiry that allowed me to work on both storytelling and analytical processes simultaneously. In this way, the video interviews I conducted could be used for video production and as data to be analyzed to gain more in-depth understanding of what participants shared relating to caribou.

The use of video-based qualitative analysis led to the coproduction of both award-winning documentary films and peer-reviewed articles about a range of social, environmental, and health topics, all based on the same video interviews. To support other explorers, researchers, and communities who wish to blend storytelling and research for environmental change, I have developed a variety of resources, including a summary, step-by-step guide, journal article, and short video explaining my creative process.

DAVID BORISH AND HIS TEAM OF FILMMAKERS GATHER FOOTAGE FOR THEIR PROJECT, "HERD: INUIT VOICES ON CARIBOU."

BILLY GAUTHIER

INUIT ARTIST, ENVIRONMENTALIST

Nominated by **MILBRY POLK MED'95**

BORN IN HAPPY VALLEY-GOOSE BAY, LABRADOR, BILLY IS A SELF-TAUGHT ARTIST WHO CARVES SERPENTINE, ANHYDRITE, IVORY, ANTLER AND BONE. EXHIBITING SINCE 2007, HE SECURED INTERNATIONAL ATTENTION IN 2010 WITH *BILLY GAUTHIER: VISIONS FROM LABRADOR IN VANCOUVER*. HIS INNOVATIVE AND PERSONAL STYLE HAS ESTABLISHED HIM AS ONE OF THE DEFINITIVE INUIT ARTISTS OF HIS GENERATION. HIS INTEREST IN CONSERVATION INSPIRED HIM TO BECOME A PEACEFUL ACTIVIST TRYING TO PROTECT HIS ENVIRONMENT, INCLUDING DEMONSTRATIONS AND HUNGER STRIKES PROTESTING THE MUSKRAT FALLS DAM PROJECT AND THE METHYLMERCURY POISONING OF LAKE MELVILLE THAT THREATENS THE TRADITIONAL INUIT WAY OF LIFE.

As an artist and culturalist, my work explores the beauty and traditional practices of my Inuit culture and the issues that arise in our homelands. My sculptures are often images of animals, the northern landscape and its people. They aim to show how Inuit are not just close to the land and animals, instead they are a part of us.

I realize that we can never go back to the way we were before "first contact." However, I believe that reconnecting to our lands is the best medicine for my people. I want more people to explore nature, to protect our last truly wild places, and to rebuild others. With my work as a culturalist, I've been able to share my knowledge with people that do not have the chance to speak with an Inuk. There are many things we can teach each other to be a bridge for my people and the rest of the world.

My work is often fanatically detailed and with fluid lines to capture the attention of the viewer so hopefully they begin to connect with the piece and gain an appreciation for the subject. I've always considered art an exploration of beauty and truths. I believe good art is art that inspires, art that opens our eyes to new ideas and makes us want to push ourselves a little further. I hope that my hand and chisel leaves a positive mark for humanity on this tiny planet.

ABOVE: BILLY GAUTHIER IN LABRADOR
FACING PAGE: EXAMPLES OF THE ARTIST'S CARVINGS

ARTS

LEO LANNA

ARTIST/CONSERVATIONIST

Nominated by **JOE GRABOWSKI FI'18**

LEO LANNA IS A BRAZILIAN SCIENTIST, NATIONAL GEOGRAPHIC EXPLORER, AND TED SPEAKER WHOSE PRIMARY FOCUS IS SEARCHING FOR PRAYING MANTISES IN TROPICAL RAINFORESTS BY NIGHT. THROUGH HIS PROJETO MANTIS, HE LEADS EXPEDITIONS IN AMAZONIA AND THE ATLANTIC RAINFOREST, SOME OF OUR PLANET'S MOST ENDANGERED ECOSYSTEMS, AND ADVOCATES FOR THE MYSTERIOUS DIVERSITY FOUND IN DARKNESS. LANNA BELIEVES BIOLOGICAL SCIENCES ARE NOT ONLY ABOUT DATA, BUT ALSO THE INTRINSIC CONNECTION SCIENTISTS DEVELOP TO THE LIVING BEINGS THEY RESEARCH. IT IS FOR THIS REASON THAT HE CARES FOR EVERY MANTIS HE HAS COLLECTED UNTIL ITS NATURAL DEATH.

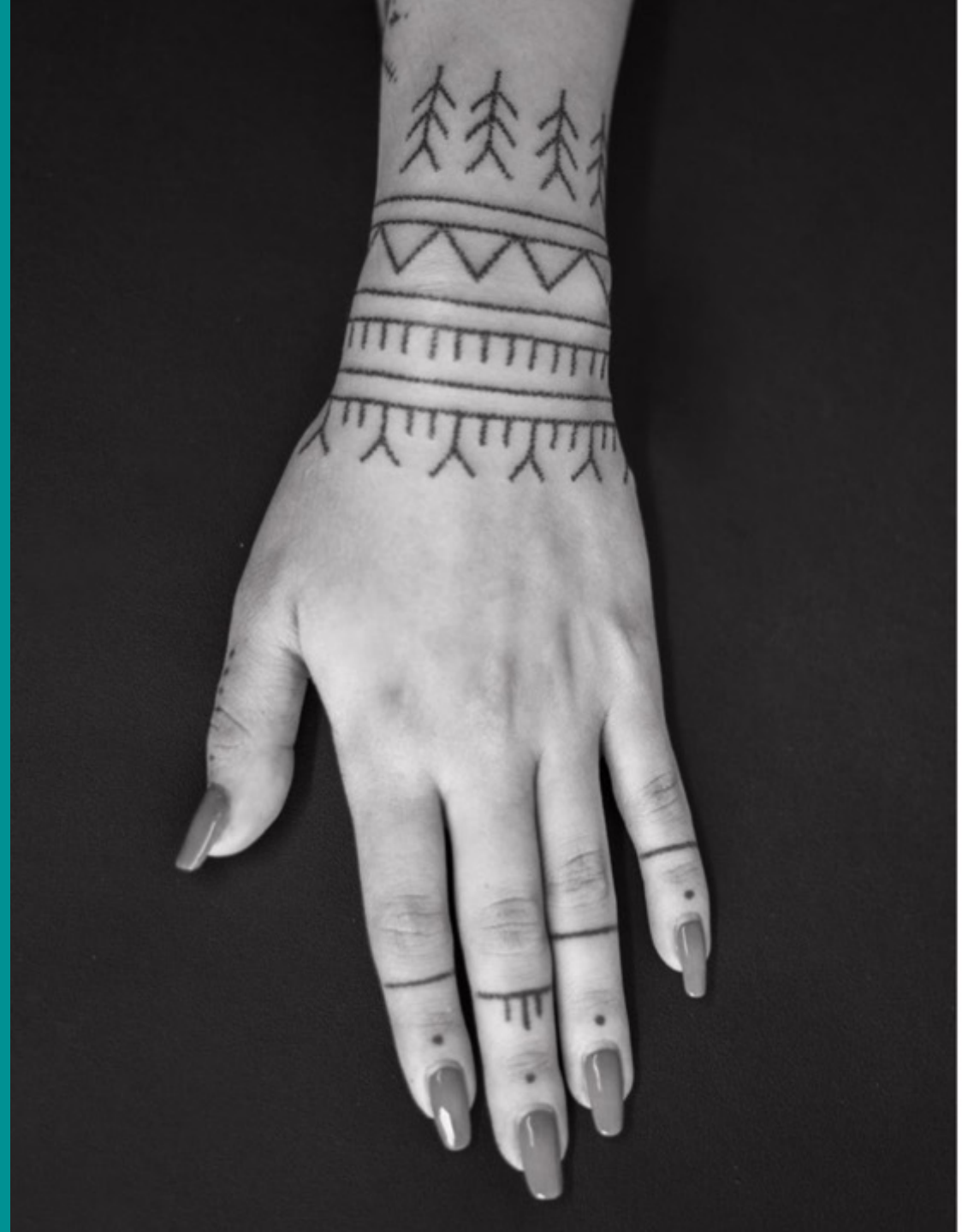
Under the veil of night, rainforests enter a new dimension—one that is both spectacular and ephemeral. With flashlights and cameras, I have had the privilege of exploring this labyrinth of wonders, searching for new and rare species of praying mantises. As they are silent, scentless, and camouflaged animals, my search for them demands a delicate connection to the environment if we are to unveil its extraordinary biodiversity.

I founded Projeto Mantis in collaboration with my partner and husband, Lvcas Fiat. Through a blending of science and art, we have embarked on a multidisciplinary approach in advocating for conservation and rainforest exploration.

Our science is slow-paced with a rare no-kill protocol that supports our educational and environmental awareness outreach. Through documentaries; our lectures in museums, schools, and universities; and workshops and online campaigns, we aim to expand the impact of our work beyond scientific academia. Mantises have become a flagship species for many people we have been able to touch, and we're dedicated to remain a beacon of hope and inspiration within our country and field area. Knowledge can rapidly change misconceptions of insects, and our stories are filled with emotion as we are deeply connected to the rainforests we call home.

Most recently, our field research has come to focus on the world of mantises after nightfall. In 2018, *National Geographic* depicted a flower phenomenon beautifully captured by photographer Craig Burrows: biofluorescence. His artistic and scientifically intriguing photos left me stunned and curious. I asked: do mantises fluoresce? In 2021, when we traveled to Amazonia to document mantises under ultraviolet light, we discovered that mantises not only fluoresce, the whole jungle shines in every hue and color one can imagine! We were able to capture the largest set of biofluorescence ever—more than 250 species of animals, from frogs to opossums, snakes and tarantulas, to mantises, in brilliant light, in images that will be published later this year.

FROM TOP: EXTRAORDINARY BIOFLUORESCENCE OF A BRAZILIAN HOODED MANTIS (*CHOERODOCIS RHOMBOIDEA*). PHOTOGRAPH BY LEO LANNA AND LVCAS FIAT. A BRAZILIAN DRAGON MANTIS (*STENOPHYLLA CORNIGERA*) IN ITS NATURAL HABITAT IN THE ATLANTIC RAINFOREST OF BRAZIL. PHOTOGRAPH BY LEO LANNA.



PANINNGUAQ LIND JENSEN

TATTOO ARTIST

Nominated by **MARTIN NWEEIA FN'99**

PANINNGUAQ LIND JENSEN HAS RESEARCHED AND WORKED WITH *TUNNIIT*, TRADITIONAL INUIT MARKINGS, SINCE 2016. THE NUMBERS OF MARKED INUIT IN GREENLAND HAVE GROWN TO MORE THAN A THOUSAND PEOPLE. PANINNGUAQ IS WORKING ON EIGHT CHILDREN'S BOOKS TO MAKE INUIT CHILDREN AWARE OF TRADITIONAL KNOWLEDGE AND TRADITIONS WITHIN THEIR CULTURAL HERITAGE. SHE IS ALSO CO-WORKING ON A DECOLONIZATION ANTHOLOGY. SHE HAS MADE A DOCUMENTARY ABOUT HOW LOCAL PEOPLE, HUNTERS, FISHERMEN, REINDEER HERDERS AND SHEEP FARMERS LIVING NEARBY WERE AFFECTED BY THE MINE THAT CONTAINED RADIOACTIVE SOILS.

I have been sharing knowledge with every person I have marked. It is important for me that they know exactly what they received. Inuit are amazing storytellers so they should have the honor of passing on the knowledge to their closest friends and family. It is my way to plant as many good seeds as possible to start the conversations about tunniit, because marking their body is not enough. We have to go deeper than that. It is about reviving tunniit in our daily consciousness and in our contact with others. Reviving a whole cultural tradition doesn't happen in one person. It happens collectively.

That is also why I am passionate about writing children's books. I grew up thinking that Inuit were only people that lived in Greenland a long, long time ago, so, I know how important it is that we write books about ourselves. Children need books that normalize cultural traditions and values that are not supported or protected in a colonized and capitalistic world where there is not much space for indigenous peoples. Many Inuit children are growing up experiencing their mothers, aunts and grandmothers, and some men, taking back their markings. This is why it is important to bring them into the process. They will carry on and pass knowledge and traditions to future generations.

Our markings belong to Inuit. It is our heritage and our birthright. We decide when and with whom we are comfortable sharing.

FACING PAGE: TUNNIIT EXAMPLE

TAIRA MALANEY

WILDLIFE & HUMAN INTEREST FILMMAKER

Nominated by **NATALIE CASH FR'21**

TAIRA MALANEY IS A WRITER, DIRECTOR, AND EDITOR FROM GOA, INDIA. SHE FOUNDED EMAHO FILMS IN 2016 TO TELL POWERFUL, CHARACTER-DRIVEN STORIES THAT EXPLORE PROFOUND RELATIONSHIPS BETWEEN HUMANS AND THE NATURAL WORLD, HARNESSING THE EMOTIONAL POWER OF THESE STORIES TO CREATE ON-THE-GROUND, IMPACT-DRIVEN CAMPAIGNS. DURING HER STUDY OF PSYCHOLOGY, MALANEY FOCUSED ON FOSTERING EMPATHY IN YOUTH, THEN WORKED WITH A MARINE CONSERVATION ORGANIZATION IN THE ANDAMAN AND NICOBAR ISLANDS, WHERE SHE USED FILM SCREENINGS TO BREAK THROUGH LANGUAGE BARRIERS AND HELP LOCAL YOUTH BUILD A POSITIVE RELATIONSHIP WITH THE MARINE WORLD. AN AVID DIVER, SHE HAS CREATED SEVERAL AWARD-WINNING SHORT FILMS AND IS CURRENTLY DIRECTING HER FIRST FEATURE FILM, *THE TURTLE WALKER*.

When I made the decision to transition from developmental psychology to film, I did not realize the important role my prior learnings would come to play in the way I tell stories. When an audience feels empathy and compassion for a character struggling to achieve a mission, that can drive them to action. Human emotion, particularly what motivates empathy in an audience, is what I draw on to create impact films on topics of concern.

A prime example is Amche Mollem, a campaign run by local scientists, students, doctors, artists, farmers, and lawyers in Goa, India, to protect the state's only wildlife sanctuary and primary water source from three large infrastructure projects initiated by the government. Understanding the call to action, I decided to tell the story through the local community's perspective and created *My Mollem*, a short documentary released in 2021. The film was viewed by hundreds of thousands of citizens across India. They began protesting, and the issue was brought to the Central Empowered Committee (CEC) in the Supreme Court of India. The CEC has ordered a reexamination of all three projects, revoking one and modifying two.

In 2019, we launched an impact campaign, which is the subject of *The Turtle Walker*, my feature documentary set to release this year. For phase one, which is complete, we partnered with an NGO, ReefWatch Marine Conservation, to help expand a pilot megafauna stranding program in India, from Karnataka all the way up to Gujarat. Hundreds of sea turtles, dolphins, whales, and marine birds have since been rescued and rehabilitated. Our goals for phase two include using the film to introduce marine studies into schools across the country.

The most meaningful part of my work is immersing myself into the world of another person or animal, gradually learning about their way of seeing the world.

FROM TOP: TAIRA MALANEY DIRECTS SCENES FOR TWO OF HER DOCUMENTARIES—THE FIRST ON SEA TURTLES, THE SECOND ON A FISHING COMMUNITY IN SOUTHERN INDIA. PHOTOGRAPHS BY SUMAIYA SAYED AND KRISH MAKHIJA, RESPECTIVELY.

ARTS

TOM MARTIENSSEN

DOCUMENTARY CINEMATOGRAPHER

Nominated by **MARK WOOD MI'15**

TOM MARTIENSSEN IS AN EMMY-WINNING DIRECTOR AND CINEMATOGRAPHER. HE HAS FILMED IN OVER 50 COUNTRIES AND TERRITORIES FROM AFGHANISTAN TO THE ARCTIC TO THE HIMALAYAS TO THE PACIFIC ISLANDS. HIS PASSION FOR STORYTELLING BEGAN WHEN HE WAS WORKING AS COMBAT SEARCH AND RESCUE IN AFGHANISTAN. WHILE AT THE BBC, HE SURVIVED AND SUBSEQUENTLY COVERED THE 2015 EARTHQUAKE IN NEPAL AND WORKED UNDERCOVER IN THE MIDDLE EAST TO REPORT ON ISIS. TOM IS CURRENTLY DIRECTING FILMS AROUND THE TOPICS OF CONSERVATION IN NIGERIA, POACHING IN KENYA, CULTURE IN GLOBAL INDIGENOUS COMMUNITIES, AND HIGH ARCTIC EXPLORATION. HE COLLABORATES ON HIS PROJECTS WITH DIAMOND DOCS AND THE BBC.

I have traveled to dozens of countries and spent time with hundreds of people and their communities, including farmers, fishermen and storytellers. Over the years these narratives and stories change, but recently the message is, "It's different now. I can't predict the seasons. The weather is strange. We've never seen so much rain. The rains are late this year."

In 2021, in a Fulani herders village in West Africa, which is a three-day walk from the trailhead with no internet, no power, and no communication, in a region cut off by mountains and rivers for most of the year, a man looks me in the eyes and tells me, "Climate change means I can't look after my cattle anymore." A Fulani man in an area with no connection to the outside world used the phrase, "climate change."

The world is changing faster than we can document. I try. I tell the stories of the people who show us we need to change, and they teach us how we can. The rangers that protect our wild spaces. The conservationists on the brink to save species. The Indigenous guardians. The scientists and explorers who brave loneliness and fight governments and the elements in order to progress our understanding of the world we live in.

Documentaries are perhaps our most powerful medium in the modern age. They have the potential to change perspectives and perception to the point of changing policy, shifting leadership, and even changing governments. In the discovery of truth, our stories reveal the most important messages and inform the collective psyche across the world.

I am currently directing and shooting four documentaries. In Nigeria, I'm making a film with the BBC, following the attempts to protect one of the world's last true wildernesses, a vast unexplored national park on the brink of survival. In Kenya, I'm exploring why rhinos are the most important species for conservation. In the high Arctic, I'm following a journey that is hampered by the fact that the Poles are disintegrating. And more!

ABOVE: TOM MARTIENSSEN, UYUNI, BOLIVIA. PHOTO: MAX CRUZ
FACING PAGE:FILMING AFRICAN PAINTED DOGS, LAIKIPIA, KENYA.
HIGHLY PROFESSIONAL RANGERS GATHER TO ANALYZE THEIR PATROLLING SKILLS, SOSIAN, KENYA. PHOTOS: HENRY HARTE

ARTS

GEORGE MCKENZIE, JR.

MR'21 — PHOTOGRAPHER

Nominated by **CONSTANCE DIFEDE MED'01**

GEORGE MCKENZIE, JR. IS A NATIONAL GEOGRAPHIC SOCIETY AWARD-WINNING PHOTOGRAPHER AND DOCUMENTARIAN FROM BROOKLYN, NEW YORK. HIS WORK EXPLORES THE INTERSECTION OF WILDLIFE, NATURAL HISTORY, CULTURES AND CONSERVATION THROUGH VISUAL STORYTELLING. IN DECEMBER, GEORGE ACCEPTED A POSITION IN FLORIDA WITH THE PATH OF THE PANTHER PROJECT. AS A CAMERA TRAP TECHNICIAN, HE OVERSEES A NETWORK OF CAMERA TRAP SYSTEMS IN THE NORTHERN EVERGLADES TO DOCUMENT THE RECOVERY OF THE ENDANGERED FLORIDA PANTHER. THIS WORK CONTRIBUTES TO BOTH FIELD RESEARCH AND PUBLIC AWARENESS FOR THE FLORIDA WILDLIFE CORRIDOR, A COLLABORATIVE CAMPAIGN TO PERMANENTLY CONNECT, PROTECT AND RESTORE VITAL CONSERVATION LANDS.

I would like to give voice to people who are not usually represented. The impact of my work centers around storytelling from a person of color's perspective. Wildlife and natural beauty surround us. While often overlooked, it is often most unique where you least expect to see it. I discovered a greater appreciation of the natural world through the lens of a camera in largely urban surroundings. I wanted to share stories that were not being told from my perspective. Not only through a camera lens, but through my cultural lens as well. I decided that the only way to change the story is to change the storyteller.

When I began to work professionally, I often focused on stories highlighting people of color and the communities in which we lived. As my understanding of the natural world increased, so did my awareness of its fragility. It was no longer enough to just tell my specific stories. It became apparent that I needed to share the tools I used in order that others could amplify the message by sharing their stories as well. Through social media, as a National Geographic instructor and Fjällräven guide, I mentor young people around the globe. It makes a difference when a young person from a background similar to mine sees what I'm doing and realizes the possibilities for their own lives.

Learning expression through photography changed the course of my life. It is important to encourage students to understand that their lives have value. They have a story to tell. Learning to use a camera, paint brush, sketch pencil or pen gives them the ability to see the world around them, and also confidence.

ABOVE: GEORGE MCKENZIE, JR. PHOTO: C. WARD
FACING PAGE: THE EVERGLADES, PART OF THE FLORIDA WILDLIFE CORRIDOR BORDERED BY MODERNIZATION.

ANTHONY OCHIENG ONYANGO

PHOTOGRAPHER

Nominated by **BUFFY REDSECKERMR'19**

ANTHONY OCHIENG ONYANGO IS A WILDLIFE ECOLOGIST, EDUCATOR, AWARD-WINNING CONSERVATION PHOTOGRAPHER AND FILMMAKER WHO IS BASED IN NAIROBI, KENYA. HIS WORK IS FOCUSED ON CONSERVATION CONTENT DEVELOPMENT THAT INSPIRES ACTION ACROSS ALL AGES AND BACKGROUNDS. HE IS THE FOUNDER OF TONYWILD, A PLATFORM THAT USES VISUALS TO CREATE AWARENESS ON CONSERVATION, AND BIOPHILIC CONVERSATIONS, A PLATFORM THAT EMPOWERS YOUNG PEOPLE TOWARD CONSERVATION CAREERS. AMONG OTHER AWARDS AND HONORS, HE IS A INFONILE'S EVERYDAYNILE PHOTOJOURNALISM FELLOW 2021, JACKSON WILD MEDIA LAB FELLOW 2020, AND NATURE ENVIRONMENT WILDLIFE FILMMAKERS PITCH WINNER 2020.

Conservation science, photography and film are big aspects of *TonyWild*. Our projects go beyond creating environmental awareness to nurturing and educating people to appreciate wildlife and nature. especially youth. These include the Visual Ecological Literacy program, Wildlife is Life campaign and the MITIgation project. Through our Visual Ecological Literacy program, we showcase images of wildlife and human-wildlife interactions in and around schools in Kenya and use them to teach about wildlife conservation and its importance to society. We have trained twenty-five young people in conservation photography and storytelling in partnership with conservation stakeholders in Kenya and Africa. Our MITIgation project focuses on ecological restoration by inspiring young people to become the conservation philanthropists of the future.

For a very long time, conservation in Africa has been centered on individuals or groups of people rather than on communities living with wildlife and young people. This should not be the case. Conservation should be part of everyone's role and responsibility. This can be done through storytelling. Conservation in Africa has always been shared from points of view other than those of the people who have lived with the wildlife for centuries. This has led to the near loss of conservation stories based on local communities, cultural behavior and indigenous knowledge among today's generation of Africans. It has also led to negative attitudes towards wildlife and nature and a lack of political goodwill to protect wildlife and wild spaces.

ABOVE: ANTHONY OCHIENG ONYANGO PHOTO: MARYANNE NYAMBURA
FACING PAGE: ONYANGO AT DARAJA ACADEMY. PHOTO: N. OTIENO
ONYANGO TEACHING "LESSON ONE!" PHOTO: GABRIEL OOKO

AISHWARYA SRIDHAR

PHOTOGRAPHER

Nominated by **BUFFY REDSECKER MR'19**

AISHWARYA SRIDHAR IS AN AWARD-WINNING CONSERVATION PHOTOGRAPHER, FILMMAKER AND PRESENTER. AN EMERGING FELLOW AT THE INTERNATIONAL LEAGUE OF CONSERVATION PHOTOGRAPHERS, HER WORK REVOLVES AROUND USING VISUAL MEDIA TO CREATE POSITIVE CONSERVATION IMPACT. SHE HAS TRAVELLED ACROSS HOSTILE TERRAINS DOCUMENTING UNIQUE STORIES OF INDIA'S RARE AND ENDANGERED SPECIES. SHE HAS PRODUCED, DIRECTED AND PRESENTED FOR LEADING NETWORKS INCLUDING NATIONAL GEOGRAPHIC, DISCOVERY, BBC EARTH AND DD NATIONAL. A CANON EOS INFLUENCER AND DECATHLON AMBASSADOR, SHE IS ALSO PASSIONATE ABOUT YOUTH EMPOWERMENT AND REGULARLY CONDUCTS TALKS AT SCHOOLS AND COLLEGES.

As a wildlife filmmaker and photographer, I strive to make wild creatures relatable, turning them into heroes of their own story, and following their struggles and triumphs. My film *Tiger Queen of Taru* followed the life of a wild tigress named Maya from the dense forests of Central India. The film portrayed Maya as a mother and queen, driving home the message that big cats are not just carnivores but can experience emotions as well. Using color, perspective, technology and a strong narrative, I seek to create interesting views of the natural world and provide recognition to these mute creatures. I am developing a series, which will follow me as I explore the deepest jungles and meet ex-poachers, scientists and conservationists to learn what it takes to protect India's last primates.

FACING PAGE: IN FIELD IMAGES OF AISHWARYA TAKING PHOTOS WITH A LONG LENS.

I have been working for the last four years with conservation organizations, local fishing communities and the government towards policy protection for the Panje wetlands of Navi Mumbai. A film inspired a national signature campaign, and it was attached as proof to a Public Interest Litigation filed at Bombay High Court. This resulted in a high court order stopping all further land reclamation work in and around that area. The state government has subsequently lent their support to declare Panje as a Ramsar wetland site, protecting the wetland and the livelihood of the local fishing communities. Now, I am working on a documentary focused on wildlife trafficking.

My passion motivates me to ensure that as global storyteller with an Indian heart, I want to be at the forefront of films that bring the beauty and mysteries hidden in the deepest, remotest canopies right into people's living room, inspiring them to think, care, act and preserve what's left on our planet for the future.

MICHEL STROGOFF

FILMMAKER

Nominated by **TRAVIS STEFFENS FN'14**

"GOFF" STROGOFF IS A FORMER SHARK, TURTLE, AND SEA CUCUMBER FISHERMAN WHO BECAME AN ENVIRONMENTAL FILMMAKER, PHOTOGRAPHER, AND ADVENTURER. HIS LIFE CHANGED WHEN THE BRITISH NGO BLUE VENTURES STARTED WORKING IN HIS SMALL FISHING VILLAGE AND HE LEARNED ABOUT CONSERVATION AND MARINE PROTECTION. IN 2014, BY CHANCE HE MET AN ENVIRONMENTAL FILMMAKER WHO TAUGHT HIM TO FILM AND PHOTOGRAPH. HE NOW TRAVELS TO SOME OF THE MOST REMOTE PLACES IN MADAGASCAR AND DIVES DEEP INTO UNCHARTED CAVE SYSTEMS, FILMS THE RELOCATION OF MADAGASCAR'S LARGEST LEMUR, AND GOES UNDERCOVER TO EXPOSE THE ILLEGAL TORTOISE AND TURTLE TRADES.

The most meaningful aspect of my work is to document the realities of what is happening to the environment in Madagascar. By opening peoples' eyes, change and solutions can be found. This is what happened to me! My first job in broadcast TV was to go further out to sea than I had ever been with the Malagasy Coast Guard. We boarded huge industrial vessels to witness the enormous bycatch and waste. As a local fisher, this made me angry and inspired me to try and help protect our oceans. By showing people imagery of this, I hope that others will be inspired to join me to protect our planet.

I take risks by going undercover to expose wildlife crimes. If we don't do something now, it will be too late. People must know the consequences of their actions or they will not stop! To expose the illegal tortoise trade in Madagascar, we posed as buyers with hidden cameras and managed to infiltrate a group of illegal tortoise traders who were selling critically endangered species. They are now in jail for their crimes, and I hope this will stop other people from becoming involved in this trade.

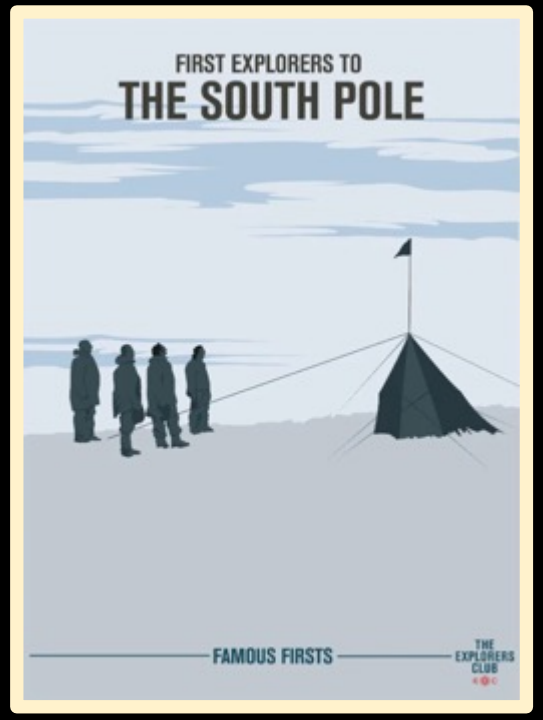
On a recent expedition, one highlight was filming giant whale sharks and green turtles by swimming with them. As a former shark fisherman, I had always been very afraid of sharks. On our last day of filming we needed footage. I spotted the most curious shark which swam right up and circled me and the snorkelers. The interaction was incredible as the shark really seemed to connect with us. I managed to get some best ever shots!

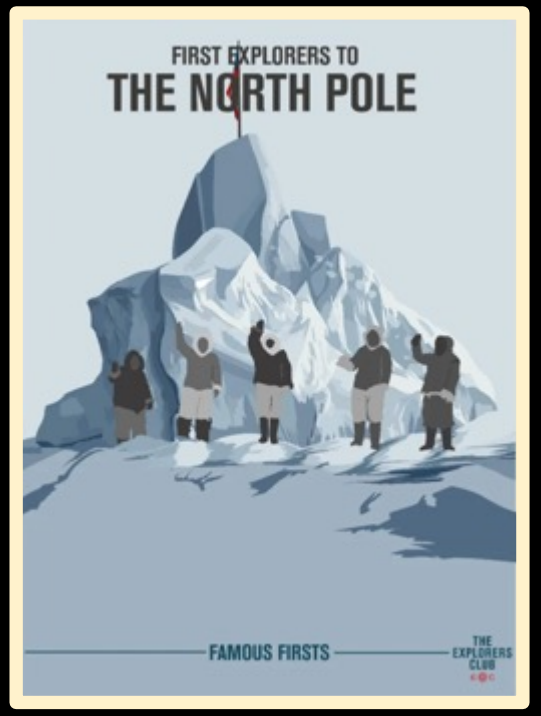
ABOVE: MICHEL "GOFF" STROGOFF PHOTO: LOUISE JAPSER/BLUE VENTURES
FACING PAGE: STROGOFF PHOTOGRAPHING DRYING SHARK FINS, NW MADAGASCAR. PHOTO: CHRIS SCARFFE

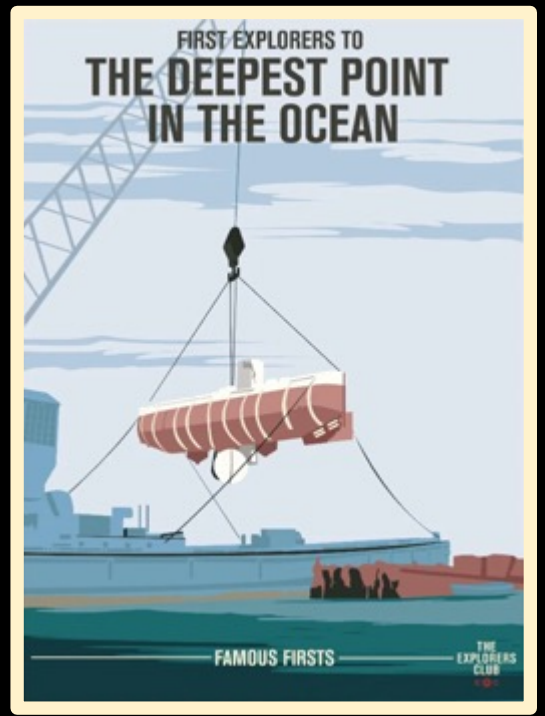
Famous Firsts

The Explorers Club commemorates our members who were “Famous Firsts” over the years, achieving remarkable feats of Scientific Exploration

explorers.org







EXPLORERS CLUB WEEKEND (SWITZERLAND CHAPTER)

Switzerland.

Lake Geneva Region and Online

Weekend of Fri 1st – Sun 3rd Sep '23; *ExplorersWeekend.org*

The Explorers Club (Switzerland Chapter) is organizing a series of events in the Lake Geneva Region during the weekend of Fri 1st to Sun 3rd Sep '23 – for free and open to all those interested in learning more about Exploration.

Three days of activities related to Exploration and Field Sciences including:
Expedition Lectures, High Mountain Skills Training and Social Gatherings.

The Explorers Club (TEC) Talks @ EPFL Rolex Learning Center and Online
Friday 1st Sep '23, from 17:00 – 22:00; free to attend; please bring your own drinks/snacks; epfl.ch

"TEC Talks" about expeditions hosted in partnership with EPFL Club Montagne at the prestigious Rolex Learning Center, one of the most remarkable buildings in the world (rolexlearningcenter.epfl.ch).

A series of mini-lectures "TED Style" (around 15 minutes long) will be given by The Explorers Club (explorers.org) members present in Switzerland and equivalent online sessions will be presented by our members abroad, as well as by guest speakers from other relevant institutions active in Field Sciences.

The event program is still being finalized; a sample online lecture theme would be our recent session *"Death, Disaster, and Directives - Find out how to hope for the best, plan for the worst, and avoid unpleasant outcomes in the field"*: youtube.com/watch?v=I-KpZbWGtcY8

After the mini-lectures wrap around 21:00, participants are most welcome to stay longer to continue their exploratory conversations and network with like minded peers until the building closes at midnight.

Capacity at the Rolex Learning Center is significant but still limited, so please book your free ticket via: eventbrite.com/e/the-explorers-club-tec-talks-epfl-rolex-learning-center-tickets-690781244297. Several online sessions held from 17:00 to 21:00 CET will be announced via ExplorersWeekend.org.

Sponsors would be most welcome to help us cover key organizational costs such as catering/tech/admin.

Rolex Learning Center © epfl.ch

High Mountain Skills Building @ Les Diablerets Glacier (3'000m/10'000ft)
Saturday 2nd Sep '23, 09:00 – 17:00; cable car ticket required to access venue; glacier3000.ch

We will be heading up to a nearby glacier to practice High Mountain skills at 3000m and foster a series of discussions with participants, who can share their own expedition experiences. The cable car operates every 20 minutes from Col du Pillon (09:00 – 16:50). As the Friday event ends late, we will focus these activities in the afternoon but suggest that those who never visited arrive earlier to benefit from its majestic beauty. There are several activities around the summit, so please come equipped accordingly if you would like to attempt those – layered clothes, harness, sturdy boots, crampons, etc. Please register your interest to participate in this part of the weekend program via eventbrite.ch/e/high-mountain-skills-building-les-diablerets-glacier-3000m10000ft-tickets-701650203557

Twin Peaks Walk © glacier3000.ch

San Martín Cup Finals @ Geneva Polo Club (GPC)
Sunday 3rd Sep '23, 11:00 – 18:00; €20 entry fee with a drink, several upgrades available; genevapolo.com

The Geneva Polo Club (GPC) will be hosting the Finals of Copa San Martín and have kindly provided us in past events with our own club tent. This is an opportunity to mingle with other exploration-minded individuals in a relaxing environment and get to meet the local equestrian community. No equipment is required other than a curious spirit and joie de vivre… plus a hat and sun lotion just in case.

Explorers Tent © genevapolo.com

For more details on how to attend or sponsor this series of events please contact Marcelo Garcia via switzerland@explorers.org.

EXPLORERS CLUB WEEKEND (SWITZERLAND CHAPTER)

Switzerland.

Lake Geneva Region and Online

Weekend of Fri 1st – Sun 3rd Sep '23; *ExplorersWeekend.org*

Main Event Venues and Core Stakeholders

EPFL Rolex Learning Center (RLC)

epfl.ch; en.wikipedia.org/wiki/École_Polytechnique_Fédérale_de_Lausanne; rolexlearningcenter.epfl.ch en.wikipedia.org/wiki/Rolex_Learning_Center; youtube.com/watch?v=LxbbECorRs (RLC intro)

As the EPFL flagship venue, stunning Rolex Learning Center (RLC) is their most prestigious location with a famously unique architecture: single one-room space, floor undulations and curved patios.

EPFL is known as the "MIT of Europe" – a world class top 10 university specializing in Engineering and Natural Sciences. The mission of The Explorers Club significantly overlaps with the EPFL 2021–2024 Strategic Plan below, therefore one of our key goals is to identify potential areas of stakeholder synergy:

1. Adapting our education portfolio to meet society's needs
2. Promoting the next generation of scientists, engineers and architects
3. Bolstering our research excellence in key scientific areas
4. Promoting a culture of open science
5. Deepening our relationship with the Swiss community
6. Developing a sustainable campus and dynamic community
7. Further enhancing the sustainability and stability of our funding

Geneva Polo Club (GPC)

genevapolo.com; eventbrite.ch/e/copa-san-martin-2023-tickets-686696605067 (ticket info)

The Geneva Polo Club was founded in 2008 near downtown Geneva on a 30-hectare estate and has hosted 100+ tournaments held from May to October in a very relaxed and casual atmosphere. The fallback activity in case of foul weather is the Geneva Natural History Museum (ville-ge.ch/mhng).

Les Diablerets Glacier (3'000m/10'000ft)

glacier3000.ch; glacier3000.ch/en/information/tickets-and-prices (ticket info)

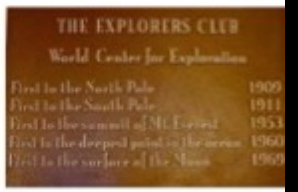
One of the most accessible glaciers in Switzerland just around two hours from Geneva Airport, making it an ideal location for High Altitude skills training with its safely groomed "Glacier Walk" slope and several Alpine Climbing routes providing multiple opportunities to consolidate lessons learned. If conditions are too dangerous, the alternative is to meet at the Olympic Museum in Lausanne (olympics.com/museum).

The Explorers Club (Switzerland Chapter)

explorers.org; en.wikipedia.org/wiki/The_Explorers_Club; mensjournal.com/adventure/how-to-become-a-member-of-the-explorers-club-w487146; glexsummit.com; https://youtu.be/hgbtlaPyTdE (TEC Behind the Scenes)

The Switzerland Chapter is the national representation of The Explorers Club (TEC), an international multidisciplinary professional society with the goal of promoting Scientific Exploration and Field Studies.

The club was founded in New York in 1904 and has since served as a major meeting point for explorers and scientists worldwide. The club is proud of its famous firsts, as our members have been first to the North Pole, the South Pole, the summit of Mt. Everest, the deepest point in the ocean, and to the surface of the Moon.



Our "Famous Firsts" expeditions by TEC members – the last line was left blank for the upcoming Mars Landing

TEC HQ gala with the "Original Jedis", our Apollo moonwalker members; "virtual" lightsabers are jocular

A past TEC President served as an "Indiana Jones" inspiration; this is his whip on display at our NY Clubhouse

Many thanks to EPFL Club Montagne for their support in the organization of our event at the Rolex Learning Center

Links to Zoom Sessions via:
tiny.cc/ExplorersWeekend

This is a nonprofit event co-hosted by EPFL Club Montagne, The Explorers Club (Switzerland Chapter) and WisdomAccelerator.org – a Swiss NGO.

Lake Geneva Region and Online | Weekend of Fri 1st – Sun 3rd Sep '23
Explorers.org – EPFL.ch – Glacier3000.ch – GenevaPolo.com – WisdomAccelerator.org

Feel free to contact us for further details on how to participate in future

ExplorersWeekend.org events or on how to apply to join The Explorers Club.

The Explorers Club Switzerland Chapter Chair

Marcelo Garcia — switzerland@explorers.org