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NATURE AND HEALTH

EMERGING KNOWLEDGE INFORMS NEW POLICY DIRECTIONS

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Nature and health in practice



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In 1984 an elegant study in *Science* showed that gallbladder surgery patients tended to have shorter hospital stays, less pain medication use, and fewer negative interactions with staff when they had a view of nature from their hospital room than when they didn't (Ulrich 1984). Since this important article came out, the number of peer-reviewed articles on nature and health in the medical literature has skyrocketed. The evidence suggests that the positive impacts of spending time in natural settings—forests, shorelines, open spaces—can be profound. Since then, the American Public Health Association, the American Academy of Pediatrics, and other professional organizations have affirmed the importance of spending time in nature for mental health during a pandemic (APHA 2020).

My experience with the topic of nature and health started many years ago in my practice as a pediatrician working on community public health and health inequities. I worked with my clinical partners and regional park partners to integrate nature into the care of the families served by our clinic, which provides well-child exams and medical treatments to a diverse, low-



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> *We needed to find ways to take the evidence and make it actionable*

income population of more than 12,000 children in Oakland, California. I was faced with several issues in bringing the science of nature and health to clinical interactions. First, while there were many large cross-sectional studies showing that nature was associated with good health outcomes, there were few experimental studies to better prove the concept (Taylor 2008; Bratman 2015; South 2018). Second, despite the many parks in our geographic region, we observed stark disparities in access to nature. In Alameda, less than 5% of total tree cover is in the flatlands of the county, which are also where the neighborhoods with the highest mortality and highest health inequity are located. Not surprisingly, the CalEnviroScreen score, which helps identify communities in California that are disproportionately affected by sources of pollution, was particularly high for these neighborhoods who also lacked access to nature (OEHHA 2020). Finally, lack of access to nature was compounded by the fact that Americans in general are spending less time in nature and have less experience and fewer skills in knowing where to go and how to get there. A simple park prescription didn't seem like it would work.

We needed to find ways to take the evidence and make it actionable. In our particular context we moved forward by listening to the needs of patients and clinicians. In response to their input, we created a program where healthcare providers gave patients referrals to nature for stress reduction and to promote resilience. We led monthly nature outings, with transportation, food, and programming provided, where families could spend time together and in community. We decorated the clinics with posters of local parks and integrated the nature referrals in our electronic medical system. Now, after six years, more than eighty outings, and thousands of patient interactions outdoors, I realize that despite the inequitable barriers to getting there, the joy and healing from being in nature is universal. I found that despite the expected obstacles, there is a well—a collective memory and enthusiasm—of interest about being in nature for healing. Through this

journey of creating a park prescription program in collaboration with a community, I've come to understand that how we connect to nature will be key in determining the future for all. I've also come to understand that simply providing access to the spaces is not enough. We must deal with the social conditions that ensure some of us have less access to nature than others. People won't be able to heal in nature as long as social issues such as racism and poverty impact daily human life. Importantly, I learned that the cultural connection to nature is not just something ancient and distant. There is a current and large desire and opportunity to re-engage our current lives with nature.

This special issue of *Parks Stewardship Forum* contains articles, art pieces, and a photo essay that focus on nature and human health. The pieces are written by an amazing array of people who have applied experience in how we may reintegrate time outdoors and nature into our lives, for our healing and for our future. This issue is meant to bring together theory and practice for ensuring lifelong access to nature for optimum health and well-being of individuals and communities. Here are the articles and themes represented.

In order to heal in nature, racism must be eradicated.

In “Justice in access to the outdoors,” Kelly D. Taylor and her co-authors discuss the ways in which nature has been used for harm against BIPOC (Black, Indigenous, and people of color) populations in the US. The authors lay out steps medical organizations can take to eradicate the impacts of racism on health by increasing access to the outdoors and by ensuring the outdoors are racism free.

In “Insider community-engaged research for Latinx healing in nature: Reflections on and extensions from Phase 1 of the Promoting Activity and Stress Reduction in the Outdoors (PASITO) project,” Eric Johnson and colleagues share insights from a community-engaged research project, and present an overall framework of how to think about

> *We will need clear frameworks of understanding how nature is associated with health*

personal health and the systems changes needed to accomplish healing in nature for everyone. In the process of reclaiming our relationship with nature for health, they discuss the importance of culturally competent research practices with insider researchers, and reveal steps towards recruitment, retention, and healing for Latinx participants.

Evidence, clear frameworks of thinking, and data will help nature integrate into health systems.

One hoped-for result of the health and nature movement is to encourage health systems recognize the value of nature for human health, and perhaps further the opportunities for park managers to work in partnership with health providers toward that shared goal. We will need clear frameworks of understanding how nature is associated with health. The following papers

discuss advances we need academically and in the field to take this movement forward.

In “Toward a unified model of stress recovery and cognitive restoration in nature,” a team of researchers in the lab of Dr. David L. Strayer presents a unifying theory of how nature improves cognitive health and reduces stress. This important piece provides a framework that can be used to advocate for programs that allow for nature contact.

In “Equitable healthcare requires equitable access to nature,” Dr. Stephen Lockhart helps us understand the applications of nature from the perspective of a large healthcare organization. He emphasizes that it is time to stop thinking of equitable access to nature and green spaces as simply something that is nice to have. His



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recommendation to create a novel metric to identify and quantify disparities in nature access is an important step towards addressing them through targeted interventions.

Humans, animals, and planets share One Health.

We need to improve our relationship with nature as a way to improve health and promote healing. It will take time to thoroughly articulate humans' relationship with nature, what this relationship means to people and the planet, and how to improve that relationship to benefit the health of all organisms.

In "Beyond COVID-19: Conserving nature to prevent the next pandemic," Dr. Tierra Smiley Evans and colleagues make the fundamental point that, in these times, we have an obligation to change the way we perceive and interact with

nature, including the animals and environments we share. They stress that everyone can contribute toward preventing the next pandemic, "be it by reducing our own environmental impact, creating outdoor sanctuaries for wildlife habitat, protecting national parks and other key biodiversity areas, or developing the next vaccine—we all have a role to play."

In this issue's installment of The Photographer's Frame photo essay series, stunning images from Amy Bond and colleagues at the One Health Institute demonstrate how people and animals share health. In "One health for all: The intrinsic connection among people, animals, and our shared planet," they demonstrate that health will truly happen when the world is safe, healthy, and sustainable "not just for people, but for every living creature on earth."

> *The COVID pandemic really made us pivot on what we thought was nature and where we could find nature*

Culture facilitates changes in human behavior and can encourage connection with nature.

In her Coloring Outside the Lines column for this issue, “The joys of nature: A cultural mosaic,” Nina S. Roberts talks about how the joy of nature is embedded in many cultures, and also that the more of us who experience the wonder of nature, no matter our cultural reference point, the more our planet has a chance to heal.

By creating art, Dr. Latifat Apatira and Dr. Rupa Marya help current and future generations find cultural connections to nature. Through her beautiful prints, Dr. Apatira encourages us to actually see the plants around us in order to cultivate a deeper awareness of the plants in our environments. Through her prints, she reminds us that these living beings exist even in urban areas, and are part of our healing. Dr. Marya’s band, Rupa & the April Fishes, sing for the water and for each of us in their stunning video “Growing Upwards.” In her introduction to the video, she reminds us that we are not separate from nature, and that we, even now, are part of the web of life. Her art encourages us that there is still an opportunity to reimagine and heal the web of life so we have healthy ecosystems.

Parks play a vital role in the solution; community is at the heart of parks.

The COVID pandemic really made us pivot on what we thought was nature and where we could find nature. It is as big as national parks and as small as a tree right in our neighborhood.

In “One hundred years of health in US national parks,” Diana B. Allen and Captain Sara B. Newman shine a light on the vital and enduring connection of America’s national parks and public health up to the present day, and major milestones marking the National Park Service’s dedication to the nation’s health, including a 100-year partnership (1921–2021) with the United States Public Health Service.

In “Parks: A vital community condition,” Dr. Sadiya Muqueeth employs a series of case studies to

better understand how neighborhood parks can be integrated into community health. She illustrates that (a) access, quality, and the community’s sense of belonging in public space is critical; (b) community must be at the center for the work; and (c) partnerships facilitate multi-sector benefits.

In “Writing a new playbook: A regional coalition for healthy lands, people and communities,” Annie Burke shows us a path forward for parks in facing the COVID-19 pandemic. At the onset in 2020, parks were faced with what seemed like an impossible conflict between people’s increased need to be outdoors and the need for infection control. Burke explains how, by coming together in a diverse coalition, parks and other land managers in California’s Bay Area stepped up to convene, connect, and catalyze action to ensure public access to parks during a pandemic.

Now is an opportunity

The articles in this issue articulate a vision. Currently, we have an opportunity to create an inclusive, global culture that centers the health of all people alongside all of nature—allowing for both human and planetary health. From the wealth of experience detailed in the authors’ work in this issue, it is clear that it will be important to be honest with ourselves about what is broken and keeping us unhealthy if we are to make real change. In that context, and building on that honesty, nature-based interventions can become key in supporting individual, community, and planetary health for generations to come.

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On the cover of this issue

Family exploring tidepools at Cabrillo National Monument, California. | [GEDAPIX](#)

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