
Promoting Community Health and Wellness through Arts and Nature-Based Interventions: A Literature Review

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Prepared for



by



About Prebys Foundation



PREBYS
FOUNDATION

Prebys Foundation is the largest independent private foundation in San Diego County and works to create an inclusive, equitable, and dynamic future for all San Diegans. The foundation advances excellence and shared opportunity through investments in groundbreaking institutions, ideas, and people to ensure more San Diegans are financially secure, healthy, empowered, and connected.

The foundation invests in four program areas: visual and performing arts, medical research, healthcare, and youth success, and pays attention to the impact of its work on climate, the region's character as a border region, and a robust democracy.

About The Nonprofit Institute



The Nonprofit Institute is housed within the School of Leadership and Educational Sciences at the University of San Diego. The Nonprofit Institute is committed to providing education, training and research to build leaders and strengthen organizations that help meet critical community needs.

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INTRODUCTION AND OVERVIEW

Prebys Foundation, the largest private foundation in San Diego County, aims to strategically invest in initiatives that enhance the social determinants of health for residents of San Diego. To ensure that its investment strategies are grounded in research, the foundation has engaged The Nonprofit Institute at the University of San Diego (NPI) to undertake a literature review. This review covers two areas of nonprofit work that are traditionally underfunded yet potentially impactful for improving social determinants of health: engagement with the arts and connecting with nature. The following questions guided the review:

Literature Review Guiding Questions

1. What does the scientific literature say about the benefits of arts- and nature-based programming for human health?
2. How are human health benefits defined in the context of arts and culture?
3. How are human health benefits defined in the context of nature?
4. What are compelling examples of place-based funder collaborations to support social prescribing of arts and/or nature?

To locate relevant literature, the NPI research team searched across a range of disciplines for peer-reviewed journal articles and research reports published by reputable research institutes that published the following: meta-analysis research reviews of empirical studies on arts and nature engagement and human health; foundational research articles that outline conceptual frameworks for understanding the effects of arts and nature on human health; recent empirical studies on health outcomes associated with arts and nature-based programs; research on social prescribing as a practice to more holistically address health concerns; and case studies of partnerships between arts and nature-focused community-based organizations, healthcare providers, philanthropy, and government. In total, over 80 articles and reports were reviewed.

This report starts with a conceptual discussion of how arts and nature intersect with health. Second, we present a synthesis of the academic and applied research literature on how the arts affect human health, and third, how engagement with natural spaces affects human health. The report concludes with innovative examples of how cross-sector partners are collaborating to improve health by connecting individuals and communities to arts and nature.

A Conceptual Framing of Arts and Nature and Health

The World Health Organization (WHO) defines health as “the presence of complete physical, mental, and social well-being, and not merely the absence of disease or infirmity.”¹ This broad definition of health recognizes the close, interdependent connection between physical, mental, social, and communal well-being. It draws on an evidence-based health framework called the social determinants of health. Social determinants of health refer to the social, economic, and environmental conditions that largely determine an individual’s health outcomes.² The social determinants of health are commonly grouped into five domains: 1) Economic Mobility, 2)

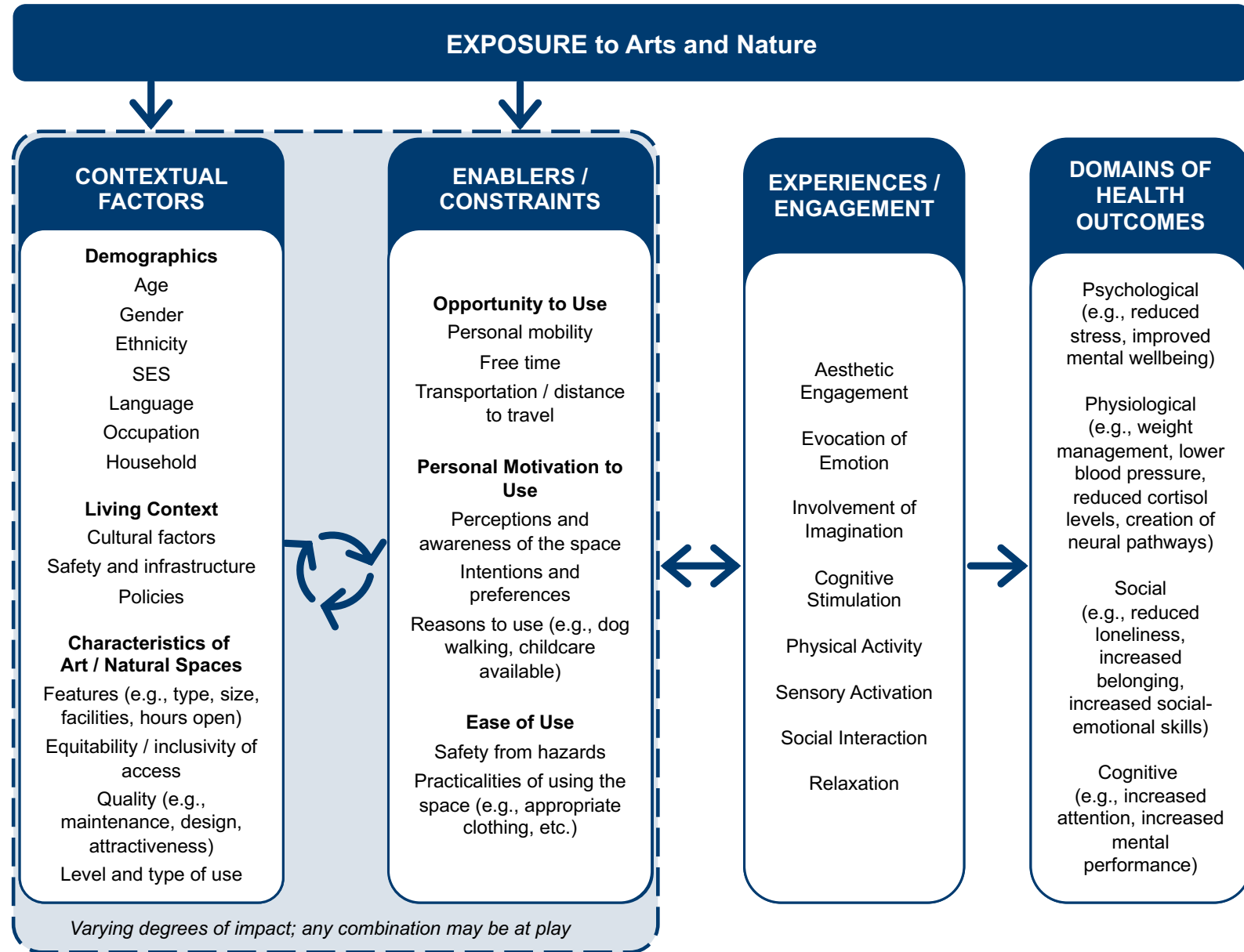
Education Access and Quality, 3) Healthcare Access and Quality, 4) Neighborhood and Built Environment, and 5) Social and Community Context.³ A growing body of research has shown that the conditions of our daily life, such as our income and the characteristics of our neighborhoods, have an outsized impact on our health.⁴ This recognition that a person's environment is deeply intertwined with their unique health outcomes has led to new lines of research exploring how interventions that improve people's social environments can impact health outcomes.

Many of the interventions aimed at improving social determinants of health focus on reducing social inequalities. Engaging with arts and nature can play a significant role in the social determinants of health by influencing various factors that contribute to overall well-being and quality of life. However, historically, access to natural spaces and the arts has been inequitable, with cultural spaces and public lands disproportionately serving affluent communities.

Figure 1 is a conceptual model that is derived from a series of conceptual frameworks in the arts and nature literature respectively, illustrating the relationship between exposure to arts and nature and the associated positive health outcomes.⁵ As shown in the model, the pathways between exposure and health outcomes are complex because of the **contextual factors** (column 1) that shape people's experiences such as the demographics of individuals and communities and the unique characteristics of natural/art spaces. Moreover, there are **enablers and constraints** (column 2) at play that impact individual health outcomes such as the extent to which individuals have opportunities, personal motivation, and ease of access to art and natural spaces. These contextual factors and enablers/constraints influence the way people **experience and engage** (column 3) in arts and culture and nature. These experiences serve as levers to produce longer-term psychological, physiological, social, and cognitive **health outcomes** (column 4).

For example, an individual may live in a neighborhood with a nearby park but works during the day and perceives the park as unsafe at night, thus avoiding it. Another individual from the same neighborhood may visit the park during the day and spend time walking and talking with friends, fostering multiple positive health outcomes. Figure 1 captures this complexity and outlines potential causal linkages between art and nature exposure and health, providing a **roadmap for designing outcomes measurement**. Although measuring the specific domains of health outcomes presented in the 4th column can be challenging, assessing specific experiences and levels of engagement as shown in column 3 may be more feasible for evaluating most interventions.

Figure 1. A Conceptual Model for How Arts and Nature Influence Health Outcomes



RESEARCH ON ARTS AND HEALTH OUTCOMES

Defining the Arts and Engagement

The research literature on arts and health outcomes is multidisciplinary drawing from education, psychology, public health, medicine, and neuroscience. The arts and health field defines five broad categories of arts.⁶

1. Performing arts (theater, dance, music, etc.)
2. Visual arts (painting, ceramics, photography, craft, design)
3. Literature (writing, reading, listening)
4. Culture (going to museums, concerts, art exhibits, cultural festivals, etc.)
5. Online digital and electronic arts (animation, filmmaking)

These categories include both **active** and **passive** engagement with the arts, meaning actively producing art such as a painter painting a portrait and/or passively engaging with art such as being an audience member, a reader, a listener, or a museum-goer.

Defining the Health Outcomes of the Arts

There is a large body of research suggesting that arts-based programs are associated with positive health outcomes. Evidence for arts as a means to improve health falls into two primary categories: 1) arts for **prevention and promotion** and 2) arts for **healing and treatment**.

Arts for Prevention and Promotion Outcomes

Research on the role of art in preventing health problems and promoting healthy behaviors has focused at an individual, social, and community level across the human lifespan. Each art form has its own supporting literature base linking the unique attributes of the art form to specific health outcomes. For example, there is a large body of research that has studied what happens in the brain when we listen to music and how changes in neural pathways affect our mood. In contrast, the literature on dance and mental health examines the role of movement and exercise in reducing stress. The primary bodies of research cluster around arts and healthy **youth development**, arts to support **healthy aging**, arts and **mental health**, and arts to support **social cohesion**.

PREVENTION OUTCOMES

Arts and Healthy Youth Development: increased academic skills in reading, language arts, and mathematics, improved cognitive thinking, social development, and motivation⁷, language and auditory development in young children⁸, fewer disciplinary issues and greater compassion⁹, improved psychosocial well-being for children with physical and developmental disabilities¹⁰.

Art and Healthy Aging: Sustained memory and problem-solving skills¹¹, improved self-reported mental health and more social engagement¹², improved balance and mobility¹³

Arts and Mental Health: Stress reduction¹⁴, improved mood, reduced anxiety, calming neural activity¹⁵, healthier behaviors - eating well, exercising - independent of socio-economics¹⁶, increased coping skills during bereavement¹⁷

Arts for Social Cohesion: Increased feelings of belonging and social connection¹⁸ as protective factors for health¹⁹, greater sense of self-efficacy to engage with and act in one's community leading to improved mental health, celebration of culture, creative responses to trauma and racism, and civic capacity for policy change²⁰

Arts for Healing and Treatment Outcomes

Research on the role of arts engagement to support healing and treatment of medical conditions falls into the following categories: treatment for **mental illness**, **acute physical conditions** (e.g., hospital inpatients) and **chronic/non-communicable health conditions** (e.g., cancer, diabetes, brain injury, pain management). Healthcare organizations employ art therapies, music, and access to art activities such as crafting to aid in healing benefits to patients such as shorter hospital stays, better pain management, and a reduction in medication usage.

TREATMENT OUTCOMES

Arts for Mental Illness Treatment: Increased self-awareness and mindfulness skills for youth experiencing mental illness²¹, reduced symptom distress and increased flexibility in mindset²², Reductions in anxiety, depression, and other negative symptoms after music therapy²³

Arts for Acute Illness Treatment: Music improved physiological responses for premature infants²⁴, Reduced stress, negative feelings, pain, and high blood pressure during hospital stays and in intensive care units^{25,26}

Art for Chronic Illness Treatment: Decreased negative emotions and distress, increased social networks, distracted from thoughts of illness, reduced cortisol levels²⁷, enhanced structural neural plasticity in stroke patients²⁸, reduced pain for cancer patients²⁹

RESEARCH ON NATURE AND HEALTH OUTCOMES

Defining Engagement with Nature

Research on the effects of spending time in nature and health outcomes is interdisciplinary, involving multiple fields such as environmental psychology, public health, ecology, medicine, neuroscience, sociology, and urban planning. Although there is no single definition of nature across these disciplines, the following definition of nature has been broadly adopted and was applied in this review.

“Areas containing elements of living systems that include plants and non-human animals across a range of scales and degrees of human management—from a small urban park to pristine wilderness.”³⁰

Although people engage with nature anytime they step outside or look out a window, the research literature broadly defines a set of nature engagement activities that have been linked to positive health outcomes including:³¹

- Conservation activities such as habitat restoration
- Wilderness activities such as hiking, learning survival skills, camping
- Horticulture and gardening
- Care farming such as animal husbandry
- Exercise or sports such as swimming, running, surfing, etc.
- Creative programs utilizing the outdoors for arts and using natural materials
- Nature appreciation such as citizen science, bird watching, etc.
- Mental health treatments completed in nature such as retreats

In considering the ways in which engagement with nature positively impacts health outcomes, the research literature has wrestled with how to define what it means to meaningfully engage with nature. There have been efforts to define the most effective “dose” to produce positive outcomes, which includes both the quantity of time spent in nature and the quality of the interaction with nature. While there is no clear consensus on dose, one study using a representative sample of nearly 20,000 people from England showed that people who spent 120 minutes or more in nature were more likely to report good health and positive well-being.³²

Defining Health Outcomes of Engaging with Nature

The research evidence for engagement with nature as a means to improve health has generally fallen into **physiological, psychological, social, and cognitive** health benefits.³³ These outcomes are interrelated, where improved psychological well-being positively impacts physical well-being, which can have cognitive and social benefits as well. As an example, studies have shown that spending time in nature can reduce stress and restore attention which equates to physical (lowers blood pressure and cortisol levels), psychological (improved mental well-being), and cognitive (improved attention) benefits.

OUTCOMES

Nature for Physiological Health: Reduced cortisol levels (a stress hormone)³⁴, lower risk of obesity in children³⁵, lower risk of mortality³⁶, reduced pain³⁷, increased physical activity among children³⁸

Nature for Psychological Health: improved self-esteem³⁹ and reduced ADHD symptoms in adults and children⁴⁰, increased happiness, positive affect, and decreased depression and anxiety^{41,42}

Nature for Social Health: Reduced isolation⁴³, reduced loneliness and increased social play among children⁴⁴, increased social interaction and associated improved mood⁴⁵

Nature for Cognitive Health: Increased attention, improved memory, and improved cognitive performance on tasks⁴⁶

Benefits to Engaging with Nature for Children

There is ample evidence that people spend less time in nature than in the past, and this is of particular concern for children where research shows myriad benefits to spending time in nature for healthy physical, social and cognitive development. For example, playing outdoors on playgrounds and in natural landscapes has been shown to increase physical exercise which improves cardiovascular fitness, muscle strength, and flexibility⁴⁷ and fosters social-emotional learning skills.⁴⁸ Additionally, schools with more access to green spaces have been shown to have higher academic achievement even when controlling for socio-economic factors.⁴⁹

Connectedness to Nature

Studies have attempted to identify the factors that ultimately lead to positive health outcomes resulting from time spent in nature. One of the primary mediating factors is developing a connection with nature.⁵⁰ A connection with nature refers to the feeling and belief that there is a connection between the self, others, and the natural world.⁵¹ In numerous studies, adults and children who participated in experiences that fostered a connection to nature reported improved mood, higher life satisfaction, and better well-being.^{52,53} Programs that encourage connections to nature often result in increased pro-environmental behaviors. These include engaging in community cleanups, voting for environmental protections, and conserving habitats, demonstrating positive impacts at both individual and societal levels.⁵⁴

SUMMARY OF RESEARCH ON ARTS, NATURE, AND HEALTH

As indicated in the conceptual framework presented earlier, participating in the arts and spending time in nature share common health benefits. **Both art and nature interventions have been shown to effectively prevent and treat psychological, physiological, social, and cognitive health challenges.** Given this mounting evidence, health experts argue that connecting people to arts and nature-based interventions can positively influence social determinants of health. To summarize, engagement with arts and nature positively influences the five domains of the social determinants of health as follows:

- 1. Social and Community Context: Community Cohesion and Social Connections**
Both arts and nature provide platforms for community engagement and social support. Art projects, cultural events, and natural settings like parks and gardens can bring people together, fostering social interactions and reducing feelings of isolation. These shared experiences build a sense of community and belonging.
- 2. Education Access and Quality: Cognitive Skill-Building and Nature Connection**
Engagement with the arts enhances cognitive development and promotes critical thinking, creativity, and problem-solving skills. Similarly, exposure to nature enhances environmental awareness and connection to place, fostering a sense of stewardship and sustainable practices.
- 3. Economic Stability: Employment Opportunities and Economic Mobility**
The arts industry and nature-related sectors (like tourism, conservation, and outdoor recreation) provide job opportunities. Skills gained from arts and nature activities can open doors to various career paths, contributing to economic stability and mobility.
- 4. Neighborhood and Built Environment: Public Spaces and Environmental Quality**
Artistic interventions in public spaces and the presence of natural landscapes enhance the built environment, making neighborhoods more inviting and livable. Green spaces improve air and water quality, reduce urban heat island effects, and provide habitats for wildlife.
- 5. Health Care Access and Quality: Physical and Mental Health**
Time in nature promotes physical activity, such as walking, hiking, and cycling, essential for physical health. Both art and nature reduce stress, anxiety, and depression, contributing to better mental health. Engagement with the arts and nature provides emotional expression and therapeutic benefits.

Despite the many positive outcomes associated with access to arts and nature, there have been some unintended consequences of improving the living conditions of a neighborhood through arts and nature enhancements such as through public art installations or park improvements. These enhancements can be a precursor to increasing the home values of a neighborhood and gradually displacing poorer residents (i.e., gentrification).⁵⁵

Social Prescribing

There is a growing movement called social prescribing, a practice whereby doctors and other healthcare clinicians refer patients to community-based programs to alleviate illnesses largely influenced by social conditions.⁵⁶ Social prescribing is viewed as an approach to addressing social determinants of health using existing community resources. The concept was first introduced in the United Kingdom in the 1980s, and over the past 10 years, it has become a formalized practice with more than 2.5 million people receiving 'social prescriptions' from primary care doctors. As of 2021, social prescribing programs had been created in at least 17 countries.⁵⁷ While the concept is becoming better known in the U.S., formalized programs are still in their infancy. The UK model is difficult to replicate in the U.S. due to differences in the healthcare systems. Advocates for expanding social prescribing in the U.S. view it as a way for people to access holistic services that aid physical and mental health.⁵⁸

Given the research suggesting a strong connection between human health and engagement with arts and nature, it is not surprising that movements in social prescribing have largely drawn on arts and nature-based interventions to address common health challenges not typically resolved with medical-based interventions. Because formalized social prescribing programs are still relatively new, there are limited studies on their effectiveness in improving community-level health.⁵⁹ However, there is evidence that social prescribing programs positively impact recipients' perceptions of their health and well-being.⁶⁰

The following two case studies illustrate ways in which philanthropy, government, and nonprofits have attempted to play a role in improving community health through arts and nature. The first case study comes from an initiative in Massachusetts to implement arts and culture prescriptions for residents. The second case study highlights the efforts of a network of funders to pool resources and expertise to increase equitable access to natural spaces.

A CASE STUDY ON SOCIAL PRESCRIBING IN THE ARTS

Mass Cultural Council's Culture Rx: Art on Prescription

In Massachusetts, Culture Rx is the first social prescription program in the United States, and it is designed to prescribe arts and culture interventions for health conditions. The program was launched in 2020 by the Mass Cultural Council, a state agency that promotes the arts and humanities through grantmaking, initiatives, and advocacy efforts. The pilot program was designed to 1) provide funding to cultural organizations to develop partnerships with healthcare providers and 2) cover the costs of prescribed services. Based on a study of the first 12 cultural organizations and two healthcare provider agencies that participated in the pilot, there were some early successes and challenges identified.

Early Successes:

- Healthcare providers reported that their patients increased their awareness of resources, and healthcare providers were glad to be able to expand their prescriptions to more nontraditional options.
- There were improved and increased partnerships between healthcare providers and cultural organizations.
- The participants who were referred to cultural programs by their healthcare providers self-reported overwhelmingly positive experiences.

Early Challenges

- Participants were often not able to carry out their “prescriptions” due to transportation barriers.
- Some of the cultural programs were not accessible to people whose primary language was not English, and some of the arts activities were not perceived as being inclusive.
- Cultural organizations received funding only when a prescription was actually utilized but there was not adequate funding put towards creating robust processes for building and promoting the program.
- Because the pilot program was small, there was not always a good fit between a patient's needs and the participating cultural organizations available for referrals. Expanding the number of healthcare providers and cultural organizations was a key recommendation in the evaluation.

Culture Rx has created an Arts on Prescription Field Guide for organizations and agencies interested in implementing social prescription programs.⁶¹ Additionally, the pilot program is in the process of scaling up in the form of a new program called Art Pharmacy.⁶²

A CASE STUDY ON PHILANTHROPIC INVESTMENTS TO CONNECT PEOPLE TO NATURE

Blue Sky Funders Forum

Blue Sky Funders Forum⁶³ is a funders collaborative that exists to inspire and increase philanthropic investments and the community of funders supporting equitable access to meaningful outdoor experiences and connections to nature.

Blue Sky Funder Forum **engages** and convenes funders to expand philanthropy that supports the many benefits of a stronger connection to nature, **activates** funder collaboration to advance shared goals, and **showcases** successful programs, strategies, and innovative partnerships.

1. Engage and Convene Funders

Blue Sky engages funders through invitations to events and through membership in the Funders Forum. Blue Sky hosts a number of events throughout the year where funders can come together to learn, collaborate, and network. Some examples of events that were offered to funders in the past year include the following:

- a. Taking Early Childhood Education Outdoors: Funders were invited to learn about the critical systems-change advancements and approaches for incorporating outdoor experiences and learning in early childhood settings.
- b. Nature=Health Webinar Series: Funders and practitioners were invited to learn about how human health and well-being are impacted by access to and time spent in the outdoors. A panel of speakers, including both researchers and activists, presented the latest research and discussed current work being done in this space.
- c. Member Coffee Chats: Members shared and discussed a range of topics such as unique program models, funding for impact, and partnerships to advance outdoor equity.

2. Activate Collaboration

Blue Sky invites organizations to collaborate and envision a future that encourages outdoor access and environmental education. Examples of collaborative initiatives are:

- a. **Rethink Outside:** Through a multi-year process of collecting feedback from hundreds of stakeholders, a shared narrative about equitable outdoor access was developed. The goal of the shared narrative was for advocates and stakeholders to develop common messaging of the benefits of time spent in nature, and the need to bring more resources and more action to advancing this work.⁶⁴
- b. **Environmental Literacy Grantmaking Database:** In collaboration with Environmental Grantmakers Association, a Tracking the Field database was

developed where Blue Sky members can search for grants focused on environmental literacy.

- c. **Partner Resources:** Blue Sky maintains a partner resource website with up-to-date research and resources related to environmental literacy and connecting people to nature. **Sample partner resources include:**
 - i. **Children and Nature Network Research Library:** Citations for hundreds of peer-reviewed research articles that comprise the evidence base for the benefits of connecting children with nature.
 - ii. **Youth Outdoor Policy Playbook.** A tool to help legislators and community leaders advance state policies that support getting kids outdoors.

3. **Showcase Programs and Partnerships**

Blue Sky draws on its members and funder network to identify innovative programs and partnerships and elevate them through its website and events.

- a. Case Studies: Blue Sky highlights innovative programs and partnerships that are shared by member organizations.
- b. Blog: periodically published a blog highlighting innovative programs and strategies
- c. Blue Sky publishes its own research briefings on topics related to outdoor access and environmental literacy.

APPENDIX: TOP REFERENCES AND RESOURCES

Arts and Health Outcomes

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