

Chapter 3

SciStarter 2.0: A Digital Platform to Foster and Study Sustained Engagement in Citizen Science

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ABSTRACT

In this chapter, the authors focus on how SciStarter has developed a new digital infrastructure to support sustained engagement in citizen science, and research into the behaviors and motivations of participants. The new digital infrastructure of SciStarter includes integrated registration and contribution tracking tools to make it easier to participate in multiple projects, enhanced GIS information to promote locally relevant projects, an online personal dashboard to keep track of contributions, and the use of these tools (integrated registration, GIS, dashboard) by project owners and researchers to better understand and respond to the needs and interests of citizen-science participants. In this chapter, the authors explore how these new tools build pathways to participatory policymaking, expand access to informal STEM experiences, and lower barriers to citizen science. The chapter concludes with a design for a citizen-science future with increased access to tools, trackable participation, and integrated competencies.

INTRODUCTION

Individuals come to citizen science from different perspectives and preferences, and engage in a wide range of projects from data collection to public policy (Irwin, 1995; Bonney et al. 2009). Many participate exclusively online in crowdsourcing projects such as Galaxy Zoo, Fold-It, and Eyewire. Hundreds

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of thousands gather data on-the-ground for academic and community research projects led by scientists at universities, government agencies/NGOs, and nonprofits. Untold others initiate their own projects in response to local environmental and health issues. All types of citizen science endeavors face challenges around data access and management, around access to tools, around relationships with scientists and project managers, and around making their scientific accomplishments visible as they accumulate over time. Among the most universal and ongoing challenges for all types of citizen science according to Crowston & Prestopnik (2013), however, “is attracting and retaining enough participants to make achievement of project goals possible” (p. 3). One known reason for this issue is the reality that individual projects and project types exist in “silos” –as self-segregated groups with particular shared interests (Dickinson, Zuckerberg, & Botner, 2010). SciStarter, an online citizen science “hotspot” and a research entity of Arizona State University (ASU), is building an innovative new platform to address these prolific issues in the field of citizen science.

As a research entity of ASU, SciStarter is helping researchers at the university’s Center for Engagement & Training in Science & Society (CENTSS) address fundamental questions about citizen scientists and their motivations. The Center is structured to develop and implement new modes of engaging audiences in conversations about how science and society interact, while maintaining a robust research platform about these interactions.

SciStarter features more than 1,600 searchable citizen science projects and events from across the globe, added by researchers and project owners, serving an engaged community of more than 50,000 citizen scientists. SciStarter selects projects from its database to promote on its site, and to share with Discover Magazine, Astronomy Magazine, Philadelphia Inquirer, NPR, PBS, the United Nations, the National Science Teachers Association and others through open APIs that allow the database of projects to be shared with other sites. SciStarter also brings these projects to life through its syndicated blog network on the Public Library of Science and DiscoverMagazine.com, as well as in the pages of Discover magazine each month.

While SciStarter has demonstrated success in promoting projects and attracting potential participants for those projects, its development team can attest to the challenge of attracting and retaining participants over time. The next iteration of the site, known as SciStarter 2.0, supports the theory and practice of citizen science by:

1. Helping expand, deepen, and sustain public engagement in science and
2. Serving as an aggregating platform to enable research on the motivations and behaviors of participants across the enormous range of variation in citizen science experiences.

BACKGROUND

The design of SciStarter 2.0 is based on the premise that ownership of information and resources and the ability to organize and display contributions, combined with greater access to projects and opportunities to connect socially with fellow citizen scientists and professional researchers, can lead to the deep and sustained engagement in citizen science. Research will be done to understand which platform features motivate increased engagement, either deeper involvement in individual activities or broader participation in many activities, and what the differential impact of those features are across demographic

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