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Editorial

Call for Papers
Journal of Research in Science Teaching
Special Issue
Community-driven Science: Evidence of and Implications for Equity, Justice, Science Learning, and Participation

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Profound equity challenges persist in efforts to promote community engagement with science, with the intersecting effects of multiple pandemics - racial and economic injustice, COVID-19, and climate change, among others. A public distrust of science, the historical lack of inclusion of multiple voices and perspectives in decision-making around scientific issues and in the production of scientific understandings, a lack of transparency of how science is done, including insights into who controls the agenda, whose knowledge counts, and who benefits, all shape how or why communities may — or may not — engage in science and/or the scientific enterprise. Consequently, a significant divide exists between the scientific community and many members of local communities. This has impacts in both directions. Scientists do not necessarily understand the needs, interests, and knowledge of people and communities, nor have they typically been educated or encouraged to support community-engagement as part of their scientific efforts. Many different communities may not understand, trust or engage with the scientific enterprise, for historicized and self-protecting reasons. For example, communities of Color, and low-

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income communities have powerful historical reasons for this distrust, as these communities have been often ignored or oppressed by the scientific community in de-humanizing and harmful ways. The field of science education is both partly responsible for these problems but is also key to addressing them.

The goal of the special issue is to generate understandings of and discourses around the possibilities for community-driven science within science education contexts – what it is, what it looks like, what people learn, how it is practiced, and its implications for democratizing the knowledge, practice and discourses of science and science education. We use "community-driven science" as an umbrella term to call attention to the opportunities that people have, collectively, to engage with science, in their local contexts, in ways that position them as critical stakeholders in the processes and outcomes of science. While this is often termed "citizen science" or "community science," we see community-driven science specifically as work in which stakeholders are involved in the scientific process from early on as co-owners of a research agenda that is for the *wellbeing* of the community and its members. This work can take many forms: from pre-service science teachers learning to use local environmental justice issues as contexts for learning (Varelas et al. 2017), to young people in a summer program collecting water quality data at their local creek and presenting to their city council (Ballard et al., 2017), to "fence-line" organizations using their own air monitoring samples to fight a chemical plant (Ottinger 2010), to youth organizing through STEM investigations to transform local injustices through place-based scientific inquiry (Morales-Doyle, 2017) and engineering design (Nazar et al., 2019). These examples encapsulate potential possibilities and

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historically embedded vulnerabilities of the communities in which this kind of work takes

place. Specifically, community-driven science in immigrant and communities of Color

recognizes their vulnerabilities with, towards, and of science, but also seeks to mobilize

knowledge inherent in the community.

While a goal of this special issue is to develop deeper understandings of the

variations in and possibilities for community-driven science, we offer an initial framing

based on the literature. First and foremost, community-driven science is of and for the

wellbeing of communities and their members. It involves a wide range of people –youth,

adults, and/or combinations –working on questions and problems that are authentic to

both the disciplines of science and to communities, where data generation and analysis can

potentially lead to answering those questions or problems (Morales-Doyle, 2017). Science

participation is of, within, and for communities (Calabrese Barton & Tan, 2010). Second,

community-driven science supports participants in learning about science and community

and the ways in which they intersect through the concerns at hand (Birmingham et al.,

2017; van Wart et al., 2020).

These and many other efforts give rise to questions about equity- and justice-related

concerns around community participation in science that the field of science education grapples

with that we hope this special issue will examine: How can the ways in which communities may

participate in and use science be integrated with science education approaches towards

promoting more just social futures for all (Upadhyay et al., 2020)? Why or how should

communities participate in science, especially given its inequitable history of participation and

impact (Bang et al., 2016)? How might people be supported in their potential roles as users, producers and critics of science, in ways that center their local and cultural knowledge and practices? How may efforts to engage communities in science become more anti-racist? What are the implications of work on these issues for equity, justice, science teaching and learning, and participation? These questions shine light on how and why the field of science education may be concerned with understanding equity-centered approaches to community participation in science, especially in communities historically and unfairly silenced, and its impact on people's learning and participation.

We invite a variety of manuscript types, and offer some questions for consideration that submitted manuscripts might address, though certainly should not be limited to:

- What are the possibilities for community-driven science as a form of justice-oriented science education?

- What are the benefits for community-driven science for participants? What do people learn, how and why?

- How do the frameworks and approaches for community-driven science expand or challenge basic questions around what is meaningful, worthwhile, good, and just in science teaching and learning? and social transformation?

- What are the variations in designs that are out there now and what can we learn from them? What are the implications for design?

The review process for the special issue will take place in two stages. In Stage 1, authors will submit an extended abstract that describes key dimensions of the proposed manuscript,

including a summary of the manuscript's approach (conceptual analysis, philosophical inquiry, quasi-experimental study, case study, historical analysis, etc.), as well as findings and implications. This extended abstract should not exceed 1,000 words. (References, tables and figures are not subject to the word limit.) The special issue guest editors will review the extended abstracts submitted in order to invite full manuscript submissions. The review will be guided by the potential of proposed manuscripts to be relevant, advance understanding of science teaching and learning, and have substantial impacts on the field, which are standard criteria for all JRST reviews. We solicit manuscripts based upon empirical data--qualitative, quantitative or both—situated in classrooms, communities and/or informal learning environments or that offer important theoretical or conceptual insights for the field of science education. In addition to these basic criteria, the guest editors will consider the extent to which manuscripts do one or more of the following: (1) extend the current work on community-driven science in science education in new directions, (2) introduce new perspectives, conceptual or methodological, from other fields to the corpus of science education literature on community-driven science, and (3) inform policy by connecting policy and community-driven science.

Guest Editors:

Heidi L. Ballard, University of California, Davis

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<div align="center">Timeline</div>

<div align="center">Submission Deadline for Extended Abstracts: June 15, 2021</div>

Issue Date for Manuscript Invitations: July 15, 2021

Submission Deadline for Invited Manuscripts: November 15, 2021

Submission Guidelines

Submissions of both extended abstracts and manuscripts should follow the publication guidelines

for the *Journal of Research in Science Teaching* and be submitted electronically to Manuscript

Central (http://mc.manuscriptcentral.com/jrst). In the submission interface, Step 4: Details &

Comments, select "Yes" for the Special Issue option, and then select "Community-Driven

Science" as the special issue title.

For the Stage 1 submission of an Extended Abstract, (1) Leave BLANK the abstract text box

found in submission Step 1: Type, Title and Abstract, and (2) Upload the Extended Abstract as a

file in submission Step 5: File Upload, labeling it as a "Main Document" in the File Designation

pull-down menu.

Inquiries concerning the suitability of possible contributions to this special issue should be

addressed to one of the Co-Editors or Guest Editors via email (see above). If you choose to use

the Journal's email address (jrst@unc.edu) for your message, please begin your message by

identifying both the Community-Driven Science Special Issue and the Editor(s) you would like

your inquiry to reach.

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